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Preface

In 2003 ACC launched *The New Zealand Patient Handling Guidelines*. Those Guidelines, developed over five years, found popularity with many sectors of the health industry. The 2003 guidelines were designed to assist in the reduction of manual and patient handling injuries, the most common types of serious injury in the health workforce. It was a comprehensive resource, and the section on techniques was widely used. As there have been considerable developments in equipment, techniques, safety culture and bariatric care since 2003, a review of the Guidelines was initiated by ACC in 2009. This review resulted in a number of preliminary reports to assist the development of a new version of the Guidelines.

An investigation of serious injuries in the residential care sector, occurring during 2007-2009, resulted in the report *Taxonomy of Injuries in Residential Care*.[1] The report noted that serious injuries (defined as more than 60 days off work) were most frequently caused by lifting patients and, to a lesser extent, other types of manual handling. The likelihood of returning to work after 60 days off work was relatively low.

In 2009, a review of international research literature on patient handling was undertaken.[2] The review concluded that a multi-factorial approach was necessary to reduce the high rates of musculoskeletal injury among healthcare staff.

A review of the 2003 Guidelines, also undertaken in 2009, noted that there were still many providers who had done little to develop an adequate safety culture related to patient handling, and that a review of the Guidelines was necessary to incorporate many of the more recent developments. The review suggested specific improvements to the Guidelines.[3]

In 2010, a survey of users of the 2003 *The New Zealand Patient Handling Guidelines* was undertaken. The survey report made a series of recommendations to improve the practical aspects of the document for workplaces, including revising the techniques section, updating the equipment and facility design sections, and including a new section on bariatric clients.[4]

1. Ludcke, J., & Kahler, R. (2009). *Taxonomy of Injuries in Residential Care*. Brisbane: The InterSafe Group Pty Ltd.
2. Thomas, D. R., Thomas, Y. L., Borner, H., Etherington, M., McMahon, A., Polaczuk, C., & Wallaart, J. (2009). *Patient Handling Guidelines: Literature Review*. Wellington: ACC.
3. Thomas, D. R., Thomas, Y. L., Borner, H., Etherington, M., McMahon, A., Polaczuk, C., & Wallaart, J. (2009). *Report on the Review of The New Zealand Patient Handling Guidelines*. Wellington: ACC.
4. Thomas, D. R. & Thomas, Y. L. (2010). *Survey of Users of The New Zealand Patient Handling Guidelines*. Wellington: ACC.

These new Guidelines have undergone international review, as well as a public submission period in June and July 2011. The review and re-writing process has resulted in a more comprehensive Guidelines document, with the new title *Moving and Handling People: The New Zealand Guidelines*. The new title more accurately reflects the wide variety of users who are the target audiences for the document. The concerns raised by previous users have been addressed where possible.

Acknowledgements

The editorial team responsible for writing the Guidelines consisted of David Thomas, Anne McMahon and Yoke Leng Thomas.

The development of the Guidelines was conducted by a revision panel. Panel members contributed to the writing, and provided input and comments on drafts. The panel comprised of:

- Emeritus Professor David Thomas, ResearchWorks NZ Ltd
- Yoke Leng Thomas, ResearchWorks NZ Ltd
- Anne McMahon, Moving and Handling Coordinator, Waitemata District Health Board (WDHB)
- Dr John Wallaart, ACC
- Chris Polaczuk, ACC
- Angela Stevenson, Whitireia New Zealand.

The development of the 'Techniques for moving and handling people' section involved considerable work by the WDHB Moving and Handling team. We especially wish to thank the Moving and Handling Coordinator, Anne McMahon, and her educators for the considerable time they put into this section. The team included:

- Stephanie Anderson – Enrolled Nurse, older adults
- Amy Boreham – Physiotherapist, community
- Mark Cranswick – Senior Physiotherapist, Pain Management Unit
- Sian Gaunt – Moving and Handling Educator
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- Yasmin Orton – Occupational Therapist, clinical team leader older adults
- Luke Skinner – Senior Physiotherapist, stroke and rehabilitation

- Helen Smith – Staff Nurse, orthopaedics
- Susan Vial – Clinical coach, mental health in older adults
- Kathleen Whyte – Moving and Handling Coordinator, Bay of Plenty District Health Board (previously a WDHB educator).

We wish to thank the following international specialists in moving and handling people who reviewed the Guidelines:

- Mike Betts, Chairman of National Back Exchange, United Kingdom
- Dr Mike Fray, Healthcare Ergonomics and Patient Safety Unit, Loughborough University, UK
- Dr Sue Hignett, Healthcare Ergonomics and Patient Safety Unit, Loughborough University, UK, co-chair of the European Panel on Patient Handling Ergonomics.

We also wish to thank other people who contributed information and comments on specific sections during the revision process:

- Associate Professor Robyn Dixon, University of Auckland
- Carole Johnson, UK
- Dr Fiona Trevelyn, AUT, Auckland.
- Tony Johnston, Australia
- Roger Kahler, Australia
- Mary Muir, UK
- Kathy Peri, University of Auckland
- Hal Robertson, Australia.

Disclaimer

The information provided in these Guidelines is intended to assist injury prevention. Every effort has been made to ensure that the information is accurate. The information provided, however, does not replace or alter the laws of New Zealand or any other official guidelines or requirements.

ACC does not accept any responsibility or liability:

- For any action taken, or reliance placed, on the information in this document
- For any error, inadequacy, flaw or omission in the information provided in this document.

All images and other references to equipment are provided for illustrative purposes only and are not, and should not be taken as, endorsement of any specific equipment or supplier.

Part A: Introduction

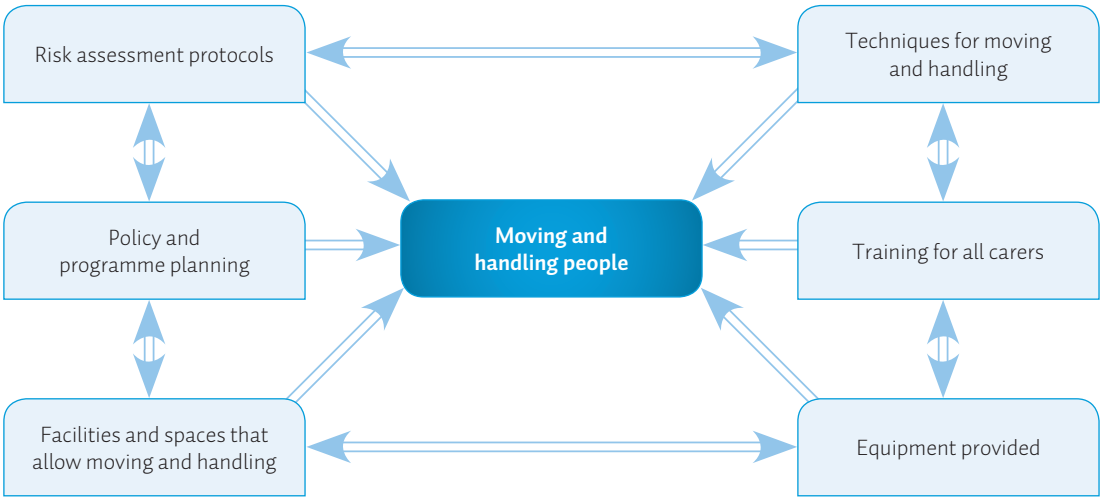
Part A: Introduction is intended for all people involved with moving and handling and provides an overview and rationale for moving and handling programmes. It includes the following sections:

Section 1 Introduction

Section 2 Why moving and handling programmes are needed.

Part B: Core skills and competencies

THE SIX CORE COMPONENTS OF A MOVING AND HANDLING PROGRAMME



In these guidelines, six core components have been identified as essential for an effective moving and handling programme. The figure above shows these six components.

Part B: Core skills and competencies covers information relating to the development of skills and competencies among carers who move and handle people. These include risk assessment, techniques and training. The sections in Part B are intended for practitioners such as moving and handling coordinators, trainers, health and safety managers and others involved in developing moving and handling programmes. Part B includes the following specific sections:

Section 3 Risk assessment

Section 4 Techniques for moving and handling people

Section 5 Training for moving and handling people

Section 6 Organising training.

Part C: Physical resources

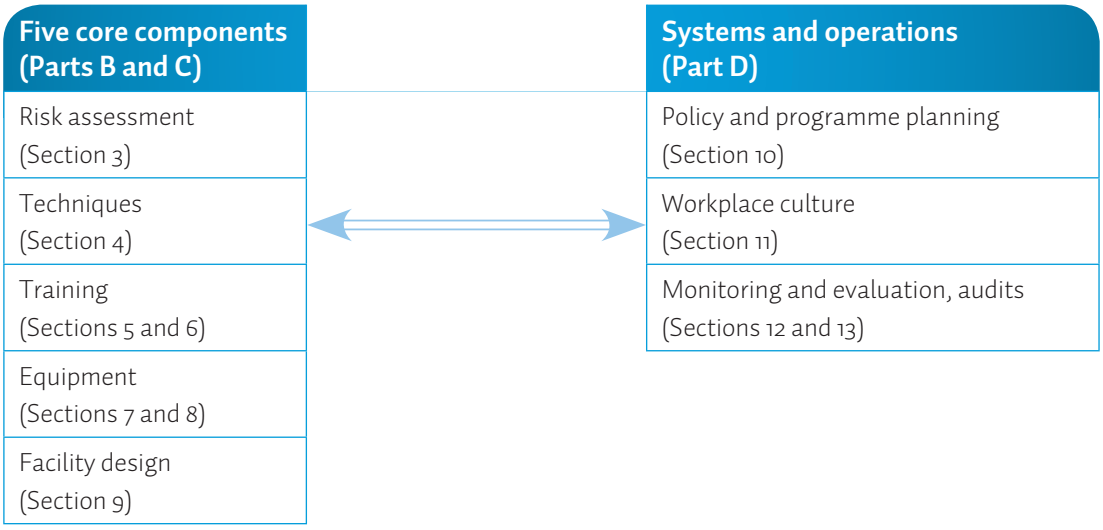
Part C: Physical resources is intended for moving and handling coordinators, trainers, health and safety managers, architects and others involved in developing moving and handling programmes. It provides information on equipment and equipment maintenance, facility design and the upgrading of facilities. It includes the following sections:

Section 7 Equipment for moving and handling people

Section 8 Equipment management

Section 9 Facility design and upgrading.

Part D: Organisational systems for moving and handling



Part D: Organisational systems for moving and handling outlines the multiple components needed for moving and handling programmes. Part D will be useful to managers and other decision-makers for developing programmes including policies, workplace culture and monitoring and evaluation operations. It includes the following sections:

Section 10 Policy and programme planning

Section 11 Workplace culture

Section 12 Monitoring and evaluation

Section 13 Audits.

Part E: Emerging topics in moving and handling

Part E: Emerging topics in moving and handling signals that there are a number of topics relating to moving and handling people that are becoming important, which were not covered in the earlier sections of the Guidelines. These include facilities and services, working with people with disabilities, children with disabilities at school, home care providers, bariatric clients and mortuaries. Some of these topics, such as moving children with disabilities, are covered in separate publications.[1] A separate section on working with bariatric (obese) clients is included, as this area has clearly emerged as a core topic in moving and handling. Subsequent versions of the Guidelines may include additional emerging topics.

The following section is included in emerging topics:

Section 14 Bariatric clients.

1. Ministry of Education. (2004). *A 'LITEN-UP' Approach to Moving Students with Special Education Needs*. Wellington

SECTION 1

Introduction

Contents

1.1 Need for revision of the Guidelines

The first version of the *New Zealand Patient Handling Guidelines* was published in 2003. Since then there have been numerous developments in moving and handling across the world. Within New Zealand, there have been changes in workplaces, demographic patterns (an ageing population, an ageing workforce, the increasing weight of clients in healthcare services) and development of organisational policies and practices. In the process of carrying out the revision of the Guidelines, now titled *Moving and Handling People: The New Zealand Guidelines*, the revision panel has taken these changes into account.

BOX 1.1

Developments in moving and handling people since 2000

The developments include:

- More than 20 manuals on moving and handling people available from websites
- An increase in evidence-based research literature relevant to practice
- Development of specialist websites
- Increasing evidence showing the cost-effectiveness of moving and handling programmes
- More extensive implementation of moving and handling programmes in healthcare settings.

In the past 10 years, there has been a dramatic increase in moving and handling manuals and guides published in countries such as Australia, Canada, the United States and the United Kingdom. As well, there are many websites that provide resources for moving and handling people and numerous papers published in research journals. Research provides convincing evidence supporting the cost effectiveness of moving and handling programmes in reducing injury rates and absenteeism among healthcare staff, as well as enhancing the quality of client[1] care.

Research and technology influence the way that healthcare facilities and educational institutions approach various aspects of workplace safety. In New Zealand healthcare, the *Health and Safety in Employment Act (1992)* states that it is responsibility of both employers and employees to ensure workplaces provide a safe work environment through hazard identification and controls. There is a growing body of evidence that the moving and handling of people is a 'significant hazard'.[2] Musculoskeletal injuries, pain and loss of function can lead to absenteeism, burnout, staff turnover and early retirement. The implementation of moving and handling programmes[3] is a major injury prevention initiative intended to enhance the wellbeing of both staff and clients. Moving and handling programmes can also address rising health costs and budget constraints. With every injury, there are substantial costs

1. The generic term 'client' is used throughout the Guidelines to make clear the distinction between the person being moved (the 'client') and the person doing the moving (the 'carer'). We use the term 'client' instead of 'patient' as the Guidelines are also intended to be applicable to non-healthcare organisations that do not use the term 'patients'.
2. For example; Pompeii, et al (2008) and Waters, et al (2006).
3. The term 'moving and handling' is used throughout these Guidelines. The more specific term 'patient handling' is also commonly used in New Zealand and other countries.

to the employer and the employee, in addition to the costs of claims. There are also added costs should clients or other people be injured while being lifted, transferred or repositioned. Clients who are not moved enough, or who are moved incorrectly, can experience health complications resulting in longer inpatient stays, potential disabilities and increased risk of morbidity. The effective moving and handling of people is part of quality and safety of care for clients.

The purpose of this revised version is to develop a New Zealand standard that reflects current evidence-informed practice for moving and handling people in New Zealand, consistent with international standards. Evidence-based practice is applicable across a range of occupational roles, and can create and sustain an environment that is safe for both people receiving care and their carers. It is about implementing a system or programme that encourages a culture of health and safety within organisations, regardless of size, where risks to clients and carers are identified and eliminated or minimised. These Guidelines provide information from which organisations and groups are encouraged to develop their moving and handling people programmes. The Guidelines provide standards for training that can be adapted to suit the needs of specific organisations in relation to clients, work environments, resources and staff.

1.2 Overview of the Guidelines

Each of the Guidelines sections has been written so that it can be read independently of the other sections. For that reason, there is a small amount of overlap in the text between some sections. Of the 14 sections in the Guidelines, 13 are included in four general topics relevant to moving and handling programmes. The final part of the Guidelines has been labelled Emerging Topics in Moving and Handling. A section on working with bariatric or obese clients has been included as this area because it has emerged as an important topic in moving and handling. The four main parts of the Guidelines are described next.

Part A: Introduction (Sections 1–2)

This first section provides an overview of the Guidelines and the revision process. It includes a description of audiences for specific sections, international developments in moving and handling people, and relevant legislation and government agencies in New Zealand. The second section describes the need for moving and handling programmes and presents information about the extent of injuries resulting from client moving and handling in New Zealand, the costs of these injuries and the need to develop more effective client moving and handling systems.

Part B: Core skills and competencies (Sections 3–6)

Part B Core skills and competencies covers the skills and competencies required by carers who move and handle people. These include risk assessment, specific moving and handling techniques and the training needed to learn these techniques. The section on organising training has been put into a separate section from the description of training for moving and handling, as these topics are likely to have somewhat different audiences. Core Skills and Competencies is intended for practitioners such as moving and handling coordinators, trainers, health and safety managers and others involved in developing moving and handling programmes.

Part C: Physical resources (Sections 7–9)

The three sections in Part C provide information on equipment and equipment maintenance, facility design and the upgrading of facilities. Part C will be of interest to moving and handling coordinators, trainers, health and safety managers, architects and others involved in developing moving and handling programmes. There are two sections on equipment: the first includes descriptions of the types of equipment and the second covers management systems for equipment. The two equipment topics are presented in separate sections as they are likely to have somewhat different audiences, and to avoid having a very long section on equipment.

Part D: Organisational systems for moving and handling (Sections 10–13)

Part D outlines the multiple components needed for moving and handling programmes. It includes sections on: policy and programme planning, workplace culture, monitoring and evaluation and audits. The topic of audits has been included as a separate section to avoid the section on monitoring and evaluation being overly long. These sections will be useful to managers and other decision-makers for developing and upgrading moving and handling programmes.

1.3 Who should read the Guidelines?

If you manage an organisation or work in a setting that requires the moving and handling of people, you should be familiar with most of the sections in this document. Table 1.1 shows the sections with which specific occupational groups should become familiar. Some organisations where the moving and handling of people is common are: DHBs (hospitals); residential care facilities and hospitals for aged care, private hospitals, clinics and surgeries; schools with disabled children; community care services for elderly people and those with disabilities.

The key groups of audiences for the Guidelines are:

Managers: including ward and unit managers, occupational health and safety managers and advisers, moving and handling coordinators and trainers

People who handle people: (whom we refer to in the Guidelines as 'carers') including nurses, health aides, doctors and medical specialists, teachers and ambulance staff

Senior management and facility owners: including directors and decision-makers, and owners and operators of private and non-profit-making facilities

People involved in facility design: including project managers, planners, architects and tradespeople

Education and training institutions: lecturers, tutors, trainers and students.

TABLE 1.1 GUIDELINES SECTIONS RELEVANT TO SPECIFIC AUDIENCES

Guidelines section	Ward or unit managers, occupational health and safety managers, trainers	Carers – people who move and handle people or clients	Senior management, directors and policy-makers	Facility design managers, planners, tradespeople
1. Introduction		▲	●	▲
2. Why moving and handling programmes are needed	●	●	●	▲
Part B: Skills and competencies				
3. Risk assessment	●	●		▲
4. Techniques for moving and handling people	●	●		
5. Training for moving and handling people	●	●	▲	
6. Organising training	●	●		
Part C: Physical resources				
7. Equipment for moving and handling people	●	●	▲	●
8. Equipment management	●	▲	●	●
9. Facility design and upgrading	●	▲	●	●

● = Very relevant ▲ = Relevant

Continued ...

Guidelines section	Ward or unit managers, occupational health and safety managers, trainers	Carers – people who move and handle people or clients	Senior management, directors and policy-makers	Facility design managers, planners, tradespeople
Part D: Organisational systems for moving and handling				
10. Policy and programme planning	●	▲	●	▲
11. Workplace culture	●	●	●	
12. Monitoring & evaluation	●	●	▲	
13. Audits	●	●		
Emerging topics				
14. Bariatric clients	●	●	▲	▲
Glossary, Index				

● = Very relevant ▲ = Relevant

1.4 International developments in moving and handling people

Since 2000, there has been a series of developments in Australia, the UK, and the USA, in the moving and handling of people. Most of the developments in Australia have been focused at state level, with Queensland, New South Wales and Victoria having produced guidelines and other resources intended to reduce moving and handling injuries. National nursing organisations in both Australia and the UK have identified specific competencies relating to the moving and handling of people. Some of the developments in legislation, standards and practice in the UK, the USA and Australia are summarised below.

United Kingdom

In the UK, the legislation covering client handling are the *Manual Handling Operations Regulations (MHOR)* 1992 and subsequent amendments (to 2004). The regulations require employers to:

1. Avoid hazardous manual handling operations as far as is reasonably practicable
2. Assess any hazardous manual handling operations that cannot be avoided, for example by using an assessment checklist
3. Reduce the risk of injury so far as is reasonably practicable
4. Review risk assessments.

BOX 1.2

UK policy and legislation

The *Royal College of Nursing* in the UK has had a directive since 1992 regarding the manual handling of patients. Its position is, 'There is rarely conflict between the needs of the patient and the safety of the nurse'.

The *Manual Handling Operations Regulations (1992)* permit manual lifting only where it is 'unavoidable'. The regulations require an employer to avoid the need for employees to carry out manual lifts 'so far as is reasonably practicable'.

Other areas covered in the UK regulations include the task, the load, the working environment, individual capabilities and employers' duties.

In the UK, moving and handling has become a specialist occupation, and moving and handling practices and programmes that reduce risks for carers are widespread. There is a national guide for the handling of people that is updated periodically.[4] Specific health authorities and regions in the UK have published guides and manuals related to client handling.

4. The most recent edition is Smith, 2011.

United States of America

The USA has a two-tiered legislative system (federal and state). At the federal level, a patient handling bill, the *Nurse and Patient Safety and Protection Act of 2006*, was still working its way through the system as at August 2010. At state level, between 2005 and 2009, nine states enacted safe patient handling legislation (Illinois, Maryland, Minnesota, New Jersey, New York, Ohio, Rhode Island, Texas and Washington, with a resolution to do so from Hawaii). Seven states require a comprehensive programme in healthcare facilities, and the legislation outlines expectations of employers and employees, reporting requirements and financial incentives for implementing patient programmes, including tax relief for capital costs.[5]

Australia

In Australia, national (federal) requirements for client handling are set by the Australian Safety and Compensation Council (ASCC), also known as Safe Work Australia. Two standards cover client handling: the *National Standard for Manual Tasks (2007)* and the *National Code of Practice for the Prevention of Musculoskeletal Disorders from Performing Manual Tasks at Work (2007)*. The aim of the standards and code of practice is to prevent injuries caused by performing manual tasks at work by setting out ways to identify and manage risks. Several states have legislation on health and safety in workplaces, which cover people handling.

In Victoria, client handling is covered by the *Occupational Health and Safety Regulations (2007)*. Two manuals provide detailed information:

- *Transferring People Safely: A guide to handling patients, residents and clients in health, aged care, rehabilitation and disability services (3rd ed, 2009)*
- *A Guide to Designing Workplaces for Safer Handling of People: For health, aged care, rehabilitation and disability facilities (2007).*

In New South Wales, manual handling is covered by the *Occupational Health and Safety Act (2000)*, and is administered by WorkCover Authority of NSW. WorkCover has published multiple resources related to manual handling and patient handling including *Implementing a Safer Patient Handling Program 2005, Manual Handling for Nurses: Guide (2005)*.

In Queensland, manual handling is covered by the *Workplace Health and Safety Regulation (2000)*. This regulation describes what must be done to prevent or control certain hazards that might cause injury, illness or death. Information on procedures for handling people is included in *Manual Tasks Involving the Handling of People Code of Practice (2001)*. Queensland Health published the second edition of its patient handling guidelines in 2010.[6]

5. From: *Nursing World*, 2010.
6. See Queensland Health, 2010.

1.5 Legislation in New Zealand

Manual handling and patient or client handling are covered by health and safety legislation in New Zealand. The law or Act that is applicable to workplace health and safety is the *Health and Safety in Employment Act (1992)* (with 2002 amendments).

The Health and Safety in Employment Act requires employers to take all practicable steps to ensure the health and safety of employees and others at work. Adopting a client handling policy and implementing a programme (see Section 10 in these Guidelines) will assist in helping employers to meet their legal responsibilities.[7] In general, these responsibilities include:

- Proactively preventing harm to employees
- Identifying, assessing and controlling or eliminating significant hazards that can cause harm, including harm later on
- Monitoring health if a significant hazard cannot be eliminated
- Educating employees about the risks and how to avoid them
- Providing training and supervision to prevent employees harming themselves or others (including clients).

BOX 1.3

Key terms for health and safety in New Zealand

Harm – illness, injury or both, and includes physical or mental harm caused by work-related stress.

Serious harm – permanent loss of bodily function, or the temporary severe loss of bodily function, or musculoskeletal disease.

Hazard – an activity, arrangement, circumstance, event, occurrence, phenomenon, process, situation, or substance that is an actual or potential cause or source of harm.

Significant hazard – a cause, or potential cause of serious harm or non-trivial harm whose effects on any person may depend on the extent or frequency of the person's exposure to the hazard.

Source: Department of Labour, *Keeping Work Safe*, 2009

7. Further information is available in: Department of Labour, 2009.

Employer responsibilities[8]

The Act noted above makes it clear that employers have a duty to ensure people are not harmed at their workplaces. To do this they must establish health and safety systems with employees to:

- Identify hazards in the workplace, then
- Ensure those hazards are eliminated, isolated or minimised.

In providing a safe working environment employers must also ensure that employees are properly trained and supervised, so they can work safely. If a hazard in the workplace can reasonably be eliminated, it should be. That depends on how much harm it might cause, and how difficult and expensive it would be to eliminate the risk.

When a hazard cannot be eliminated, employees have a right to know about the hazard, the level of risk, and what they need to do (or not do) in order to work safely. The aim is to do things better in order to achieve a safe and healthy workplace, not just because that is what the law says, but because it's better for everyone.

Employers must:

- Provide employees with information about any hazards and how to protect themselves from them. For example, they should be told how to deal with any risks in their work, any effects they could have on themselves or others, and how to get help easily if there are problems
- Ensure that employees have and use the right protective equipment or clothing. They can choose to provide their own protective clothing, but if they make that decision the employer must ensure it is good enough for the job
- Record and investigate any accidents or 'near misses' to employees and visitors to the workplace. When a person suffers serious harm, the Department of Labour must be advised.[9]

Employee responsibilities

Employees can make their workplaces safer by:

- Being involved in processes to improve health and safety
- Complying with correct procedures and using the right equipment
- Wearing appropriate clothing
- Helping new employees, trainees and visitors to the workplace to understand the right safety practices and why the practices exist
- Communicating incidents and concerns to their employer.

8. Adapted from Department of Labour, 2010.
9. For further information on the definition of a serious harm injury, visit the website: www.osh.dol.govt.nz/law/hse-harm.shtml.

1.6 Government agencies

Four agencies have responsibilities for and interests in preventing workplace injuries in healthcare services. These are:

- ACC – the Accident Compensation Corporation
- Department of Labour
- Ministry of Health
- DHBs.

ACC

ACC has led the development of client moving and handling in New Zealand through the publication of the *New Zealand Patient Handling Guidelines*, its emphasis on injury prevention, and a specific focus on the prevention of injuries in the healthcare industry. ACC has published nearly all the current information relating to moving and handling clients in New Zealand. A recent initiative in the field has been the development of the *Preventing and Managing Discomfort Pain and Injury Programme* (the DPI Programme) for workplaces. Other roles have included providing tools relating to training programmes for DHBs and other training providers, and funding evaluations of new programmes, such as the pilot implementation in Auckland hospitals of the Guidelines, and the evaluation of a pilot training programme at a DHB.

Department of Labour

The Department of Labour administers the legislation relevant to health and safety in workplaces. It provides copies of legislation, guides and health and safety pamphlets, many of which are available on its web pages. The Department implemented the *Workplace Health and Safety Strategy* (WHSS) in 2005. In 2001, ACC and the Department published the *Code of Practice for Manual Handling*. The Department of Labour also investigates serious workplace accidents.

Ministry of Health

The Ministry of Health works as a policy adviser, regulator, funder and service provider. Some of the responsibilities of the Ministry potentially related to client and patient handling are:

- Strategy, policy and system performance – providing advice on improving health outcomes, reducing inequalities and increasing participation, nationwide planning, coordination and collaboration across the sectors
- Monitoring and improving the performance of health sector Crown entities and DHBs, which are responsible for the health of their local communities

- Funding and purchasing health and disability support services on behalf of the Crown, including the maintenance of service agreements, particularly for public health, disability support services and other services that are retained centrally
- Administration of legislation and regulations, and meeting legislative requirements.[10]
  (Source: www.moh.govt.nz/moh.nsf/indexmh/aboutmoh-what).

DHBs

The DHBs are fundamental drivers of change across the health sector. For example, in 2009 a joint working group from the DHBs and the New Zealand Nurses Organisation produced a report entitled *Safe Staffing, Healthy Workplaces: DHB Sector Analysis of Progress*. The purpose of this report was to provide an overview of the status of the DHB sector with regard to the development of safe staffing and healthy workplaces, and to consider the implications of this for the sector agenda. Staff working for DHBs move and handle large numbers of people on a daily basis.

Since the publication in 2003 of *The New Zealand Patient Handling Guidelines*, some of the 20 DHBs in New Zealand have implemented moving and handling initiatives. These include the appointment of moving and handling coordinators and facilitators, implementing moving and handling programmes and providing training for carers. DHBs have an important role in providing models for moving and handling people for community services and residential care.

10. At the time of writing (June 2011), the Ministry of Health had not been actively involved in promoting programmes for moving and handling people, unlike health authorities in many other developed countries.

1.7 Processes used in the revision of the Guidelines

In 2009 preliminary work for the Guidelines' revision was carried out by a review panel that identified sections of the Guidelines that needed revision, and scoped the revision generally. A literature review on safe patient handling was completed as part of the 2009 review. A taxonomy of injuries in residential care that resulted in claims to ACC was also used during the preliminary review.[11] Three reports from the preliminary work are listed in the references at the end of this section. [12]

ResearchWorks NZ Ltd was contracted by ACC to revise the 2003 *New Zealand Patient Handling Guidelines* in 2010. The revision process included the following tasks and consultation activities:

- A national survey of 50 users of the Guidelines – the survey was publicised in various ACC newsletters, and through direct contact with DHBs and residential care facilities over several months
- Convening a panel to review the original document
- Inviting speakers from DHBs, ACC and universities to speak to the panel
- Drafting the new Guidelines
- Arranging for panel members to provide feedback on the drafts
- Arranging for national and international reviews
- Incorporating changes arising from the reviews where appropriate.

In the early stages of the revision an email network was formed. The network comprised people who completed the survey and anyone who requested inclusion. News about the revision, and requests for comments on specific points, were sent to this network and to people in the ACC DPI Programme.

11. Ludcke & Kahler, 2009.
12. Thomas et al, 2009a, 2009b, 2010.

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WorkSafe Victoria. (2009). *Transferring People Safely: A guide to handling patients, residents and clients in health, aged care, rehabilitation and disability services* (3rd ed.). Melbourne.

New Zealand web addresses

ACC – www.acc.co.nz

Department of Labour – www.dol.govt.nz and www.osh.dol.govt.nz

District Health Boards New Zealand (DHBNZ) – www.dhbnz.org.nz

Ministry of Health – www.moh.govt.nz

International web addresses related to moving and handling people*

Safe Lifting Portal
www.safeliftingportal.com
Healthcare site designed to support safe lifting and caregiver injury prevention programmes

American Nurses Association, Nursing World website
www.nursingworld.org
See section on *Ergonomics/Handle with Care*

Department of Veterans Affairs, USA, *Safe Patient Handling and Movement* page
www.visn8.va.gov/patientsafetycenter/safePtHandling/default.asp

European Agency for Safety and Health at Work
osha.europa.eu/en/sector/healthcare
See *Publications for healthcare*

National Back Exchange UK
www.nationalbackexchange.org

NIOSH - The National Institute for Occupational Safety and Health, CDC, USA
www.cdc.gov/niosh/topics/healthcare/
See section on *Ergonomics and Musculoskeletal Disorders*

The Safety Library (USA and several other countries)
www.thesafetylibrary.com/lib/healthcaresafety/patienthandling.php
(requires paid membership for access to resources)

WorkSafeBC, Canada
www2.worksafebc.com/Portals/HealthCare/PatientHandling.asp

* Note these web addresses (URLs) were operating in June 2011. If the URL does not work, try a search on the organisation name.

SECTION 2

Why moving and handling programmes are needed

Contents

2.1 Injuries from moving and handling people: Prevalence and costs

Moving and handling people can potentially be a serious hazard. Many countries, including New Zealand, have high injury rates among healthcare staff compared with other occupational groups. Healthcare workers have one of the highest rates of musculoskeletal disorders among all occupational groups.[1]

- Healthcare workers lead all other occupations for the risk of back injuries requiring hospitalisation in women
- Hospitals, nursing and residential care facilities lead all industries for workplace injury and illness
- Carers and health assistants have the highest risk of injuries, as their jobs require frequent client transferring and repositioning
- Musculoskeletal injuries make up the largest proportion of total injuries.

Carers performing high rates of client moving and handling each day are much more likely to report back pain. The daily number of client moving and handling tasks is a key measure for assessing the risk of back pain.

Carers are at risk of musculoskeletal injury when their work involves moving and handling clients. Repositioning clients in bed and transferring clients from bed to stretcher are the most physically demanding tasks performed by carers. Even though repositioning clients can appear to be a straightforward or mundane activity, it can lead to injuries to staff (see Box 2.1 for examples).

Carers who do the most client moving and handling tasks each day are more likely to experience lower back pain. The use of appropriate equipment greatly reduces musculoskeletal strain and the risk of injury among staff.

BOX 2.1

Examples of reasons given for staff injuries resulting from moving clients (quotes from ACC claim forms)

- Lifted patient [and developed] acute cervical neck pain and radiation to shoulder
- Transferring patient who fell back, got pulled forward and hurt back
- Transferring patient at work, injured lower back
- Working at a rest home, helping an elderly lady up, pulled back muscle
- Lifting patient, patient slipped, pulled right shoulder
- While putting a resident to bed, she rolled onto my hand
- While lifting and transferring patients noticed increased pain in low back.

Source: ACC claims data, June 2010 (for people away from work for 30 days or longer)

1. Thomas et al, 2009.

Other factors, besides the physical workload, contribute to injuries and lead to staff taking sick leave. These include:

- Irregular and long shifts
- Lacking adequate sleep and being less alert while moving and handling clients
- Staff who feel they have little control over their work and an unsupportive work environment are more likely to report back problems.[2]

Moving and handling injury costs in New Zealand

In New Zealand, the estimated annual social and economic cost of workplace injuries is $1.347 billion, and these injuries account for around 14% of all injury costs in New Zealand.[3] Workplace injuries are one of the six priority areas for injury prevention in the *New Zealand Injury Prevention Strategy* (NZIPS).

Accident Compensation Corporation (ACC) claim data for back injuries provide an indication of some of the costs of injuries in healthcare facilities in New Zealand. Claims such as these result in direct costs to healthcare providers.

- There were 4,800 new workplace claims for back injuries for the 12-month period July 2009 – June 2010
- ACC paid $126.4 million in claim payments in that 12-month period for new and ongoing back claims
- Of the 4,800 new claims, 301 claims were in the health sector, with new claim costs of $6.5 million over 12 months.[4]

Within the health sector, ACC data showed a 28% increase in injury claim costs for the New Zealand residential care (or retirement village) sector in a five-year period (2004-2008). In 2009, the entitlement claim cost (for injuries that caused the employees to be away from work for more than a week) was $6 million per annum for the residential care sector. By comparison, the hospital sector experienced an 11% increase in injury costs in the same five-year period, with entitlement claims being around $8 million per annum.[5]

Figure 2.1 shows the costs of work-related entitlement claims recorded by ACC for employees in health services (hospitals and aged-care residential services) in the five-year period to June 2010. These claims, which cost ACC around $8 million per year, were for discomfort, pain and injury (DPI), including soft tissue pain and injuries to the head, neck, upper and lower back, arms and legs.

An analysis of long-term claims (claims paid for 60 days or more) from residential care employees (2007-2009) showed that long-term claims accounted for 38% of all claims and 84% of the cost of claims. Among these claims, 63% were for injuries to the lower

2. Thomas et al, 2009
3. New Zealand Government, 2010
4. Source: ACC claims data, June 2010
5. Ludcke & Kahler, 2009.

back or shoulders, and 26% were for upper or lower limb injuries. Fifty percent of the injuries occurred during client moving and handling, 16% during equipment moving and handling, 4% while using equipment during client moving and handling, and 17% from falls occurring at the same level (mostly slips on wet surfaces and trip falls).[4]

Among healthcare staff, falls are the second most common type of injury after injuries occurring when moving and handling clients. Falls among healthcare staff occur both while attending to clients and during other aspects of their work (see Box 2.2).

BOX 2.2

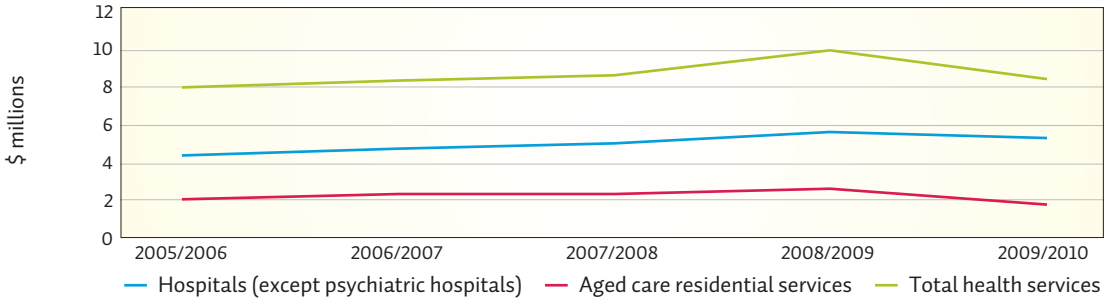
Examples of fall injuries among healthcare staff

- Helping a patient, tripped and fell backwards on outstretched hand, injured left wrist
- Showering resident, slipped and injured left knee
- Fell while putting shoes on resident, toppled and pulled abdominal muscles
- Tripped over equipment landing heavily
- Walking on kitchen floor and slipped onto knee
- Serving lunch to residents, tripped over person's handbag on floor beside their chair.

Source: ACC claims data, June 2010

Injuries to healthcare staff and their associated costs are substantial in New Zealand. Industry initiatives to reduce injuries need to include both hospitals and residential care services, and especially injury-reduction strategies for employees in aged-care residential services and retirement villages.

FIGURE 2.1 ACC WORK-RELEATED ENTITLEMENT CLAIMS IN THE HEALTH SERVICES SECTOR (SOURCE: ACC DATA, JULY 2011)



Estimating the cost of workplace injuries to employers and staff

The most commonly reported costs for workplace injuries, including moving and handling injuries, are the claim costs incurred by ACC. However, these are only one part of the overall cost. Expenses to employers and injured individuals and their families are also significant and need to be included in cost estimates.

For employers, the costs of injuries to staff include not only additional salary expenses for replacement staff (part of which may be met by ACC under entitlement claims) but also other costs. These additional costs include:

- Providing induction training for new staff (and temporary replacement staff)
- Paying overtime to other staff to cover for injured staff
- Costs related to increased staff turnover
- Cost of injury investigation, recording details of the injury and notifying ACC, and absenteeism and sick leave days (which are not covered by ACC)
- Difficulties for employees returning to work following injuries.

Taking staff turnover as an example, the estimated average cost of replacing a registered nurse in the United States, including productivity losses, is 1.3 times the annual salary of a nurse.[6] A New Zealand study reported that four out of ten staff nurses in hospital general wards move jobs each year, costing hospitals on average around $25,000 to replace each nurse[7] (a figure that does not include the loss of productivity). These costs will vary depending on the education, experience and tenure of the nurse who leaves, whether or not there is a nurse shortage, and other organisational and environmental factors.

Replacement costs may include the costs of:

- Advertising and recruitment
- Vacancies (e.g. paying for agency nurses, overtime, closed beds and hospital diversions)
- Hiring (e.g. paperwork, background checks and moving and travel expenses)
- Orientation and training for new staff
- Decreased productivity (the difference between full productivity and productivity during the induction and learning period)
- Termination for long-term staff who leave
- Potential client errors, compromised quality of care
- Poor work environment and culture, dissatisfaction and distrust
- Loss of organisational knowledge
- Additional turnover.[8]

The costs to individuals who are injured and their families can be substantial. They will often include medical and specialist fees not covered by ACC, transport costs and prescription costs. They will also include costs that are more difficult to estimate, such as increased stress and workload for other family members, loss of leisure time and activities, and potential loss of future income. Table 2.1 shows a hypothetical example of the cost of an injured healthcare employee being away from work for

6. Jones, 2005.
7. North et al, 2006.
8. Jones, 2007.

three months. Examples of similar cost estimates for injured employees in other occupations are described in the 2002 report published by the Department of Labour: *Aftermath: The Social and Economic Consequences of Workplace Injury and Illness* (Adams et al, 2002).

TABLE 2.1 EXAMPLE OF COSTS FOR AN INJURED EMPLOYEE AWAY FROM WORK FOR THREE MONTHS

Cost source	Total cost	Cost to ACC & Dept of Labour	Cost to employer	Cost to individual and family
Salary/wages for injured person while away from work	$15,000	$15,000 paid to employer by ACC		
Replacement staff for injured person	$5,000		$5,000 ($20,000 for temp staff less $15,000 from ACC)	
Assessment by medical specialist	$800	$800 ACC		
Visits to general practitioner and physiotherapist	$600			$600
Prescriptions	$200			$200
Transport for health visits	$300			$300
Incident report costs (staff time)	$800		$800	
Health and safety visits and compliance costs	$900	$600 (DoL)	$300	
Total cost estimates	$23,600	$16,400	$6,100	$1,100
Intangible costs			Increased staff turnover, induction training for temporary staff	Possible loss of future income, loss of leisure time, increased workload on family

2.2 The benefits of moving and handling programmes

Moving and handling programmes significantly reduce the rates of injury resulting from client moving and handling, as well as the associated costs. Programmes that are successful in reducing injuries to healthcare staff need multiple components, such as support from management, an appropriate policy, training, risk assessments, equipment, facility design, auditing and reviews. There are also financial savings through lower costs from injuries, and reduced staff absenteeism and turnover.

BOX 2.3

Benefits of including ceiling lifts in intervention strategies

The rapid economic gains and reduction in the frequency and cost of patient handling injuries make a strong case for ceiling lift programmes as part of an intervention strategy. Incorporating ceiling lifts into the design of new facilities or during renovations is most cost effective. The most effective interventions include the installation of ceiling lifts and training staff how to use them.

Source: Chhokar et al, 2005

An outlay on the right training and equipment can save money through reduced injuries to staff and clients. For example, incorporating ceiling hoists into the design of new facilities or during renovations is a cost-effective option. The payback time (the time when the savings from reduced injury costs exceeds the costs of installing ceiling hoists) from the installation of ceiling hoists has been reported as being around three years[9] – when the ceiling hoists were installed so that they could be used effectively for moving and handling. Section 12 has examples of how payback costs can be calculated.

9. See Chhokar et al, 2005; Miller et al, 2006.

2.3 Preventing injuries to carers and clients

Injury prevention research and programmes play a vital role in reducing injuries and their associated costs. In New Zealand several government agencies, including ACC, have ongoing injury prevention programmes. Research on the causes of injuries, and the most effective ways of preventing injuries, is essential to avoid an ongoing escalation in the costs of injuries, both to state agencies such as ACC and to individuals and their families.

There are significant reductions in injuries, back problems and absenteeism rates among healthcare staff following the introduction of lifting and transfer equipment such as hoists (mobile and ceiling hoists). Following the installation of ceiling hoists, there are significant reductions in three to five years in the risk of injury, and sustained decreases in days lost, workers' compensation claims and other direct costs associated with client moving and handling injuries.[10]

Training staff in people moving and handling techniques alone is ineffective in reducing injuries. Only a moving and handling programme with multiple components is effective in reducing back problems and other injuries among healthcare staff. Core programme components typically include:

- A policy on moving and handling clients
- A training programme for staff in moving and handling people
- Risk assessment protocols, documentation and an incident reporting system
- The provision of moving and handling equipment
- Facilities that are designed or modified for moving and handling people.[11]

Installing ceiling hoists is one of the most cost-effective intervention strategies, even after taking into account the initial costs. Incorporating ceiling hoists into the design of new facilities and during renovations reduces injury rates to staff and clients, and provides for future proofing of facilities.

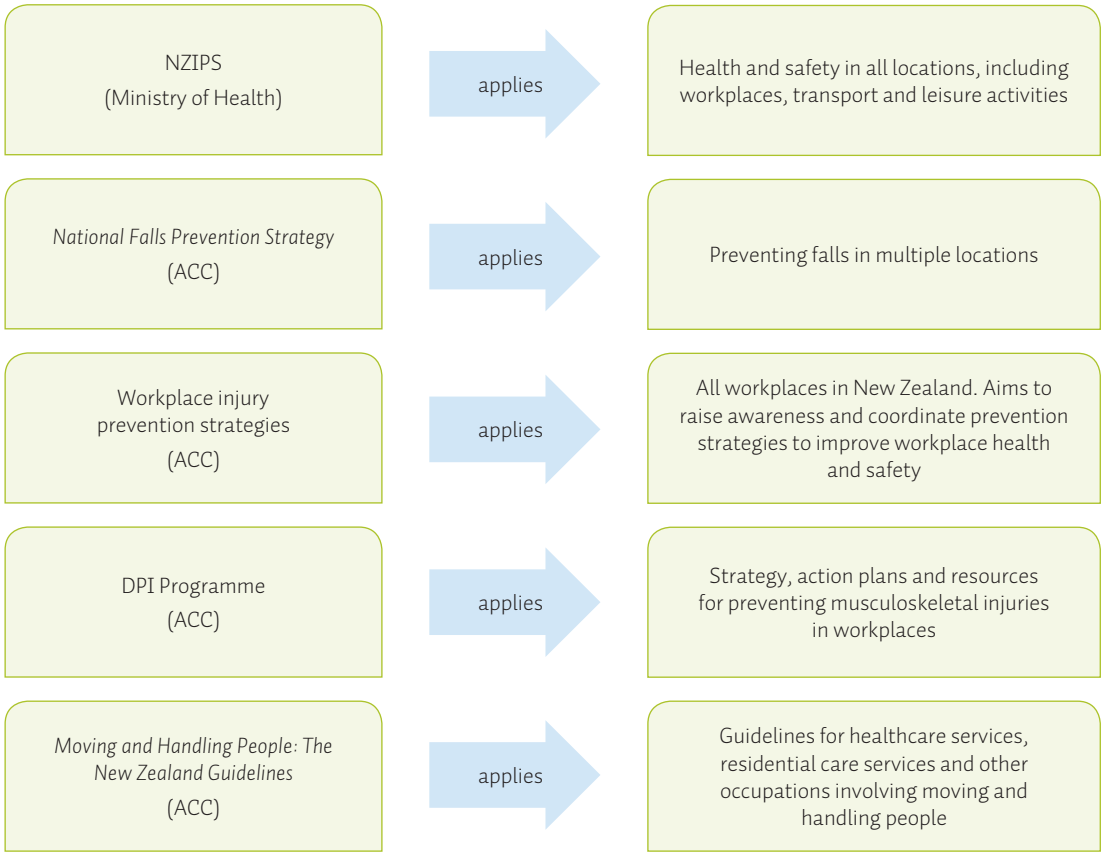
The costs of providing equipment, improving the design of buildings for moving and handling people and providing staff training are generally recovered after three years.[12]

10. Thomas et al, 2009.
11. Components identified in the literature review by Thomas et al, 2009.
12. See, for example, an Australian study by Bird, 2009.

2.4 Injury prevention in New Zealand

There are several national injury prevention initiatives in New Zealand. These initiatives provide a context for preventing injuries to carers involved in moving and handling people. Figure 2.2 shows the main injury prevention strategies.

FIGURE 2.2 INJURY PREVENTION INITIATIVES IN NEW ZEALAND



Moving and Handling People: The New Zealand Guidelines is designed as a resource for preventing moving and handling injuries in workplaces and other locations. The prevention of manual handling injuries is an integral part of three national strategies: workplace injury prevention, falls prevention and the NZIPS. These strategies are described below.

New Zealand Injury Prevention Strategy

The NZIPS was established in 2003. It provides a framework for the injury prevention activities of government agencies, local government, non-government organisations, communities and individuals. The strategy is intended to focus national injury prevention efforts and resources by providing a clear direction to agencies, organisations and communities that have either a direct involvement or contributory role to play in injury prevention in New Zealand. The six national priority areas in the strategy are motor vehicle traffic crashes, suicide and deliberate self-harm, falls,

workplace injuries (including occupational diseases), assault, and drowning and near-drowning. The six areas account for at least 80% of injury deaths and serious injuries in New Zealand.[13]

National Falls Prevention Strategy

Falls are the leading cause of hospitalisation as the result of injury, and one of the top three causes of injury-related deaths in New Zealand. Between 1993 and 2002, more than 160,000 people were hospitalised for fall-related injuries, accounting for 43% of all unintentional injury-related hospital admissions.[14] Complementing the *National Falls Prevention Strategy*, preventing slips, trips and falls in workplaces is one of the priority areas in the *Workplace Health and Safety Strategy for New Zealand to 2015*. Facilitating safe client moving and handling can reduce falls for both clients and staff.

Workforce injury prevention programmes

Two government agencies have ongoing workplace injury prevention programmes. In 2005, the Department of Labour initiated the *Workplace Health and Safety Strategy for New Zealand to 2015*, which aims to enhance New Zealand's workplace health and safety performance and reduce workplace injuries. The ACC WorkSafe Cycle provides a guide on how to set up and support the comprehensive systems and procedures required for effective workplace health and safety, to reduce injury and illness in the workplace. A major injury prevention programme promoted by ACC within workplaces is *Preventing and Managing Discomfort, Pain and Injury* (the DPI Programme).

DPI Programme

The DPI Programme is ACC's approach to the prevention and management of workplace musculoskeletal conditions. This multifaceted approach encourages workplaces to focus on both the prevention and management of these problems.[15]

The DPI Programme amalgamates three separate injury-related programmes for the workplace:

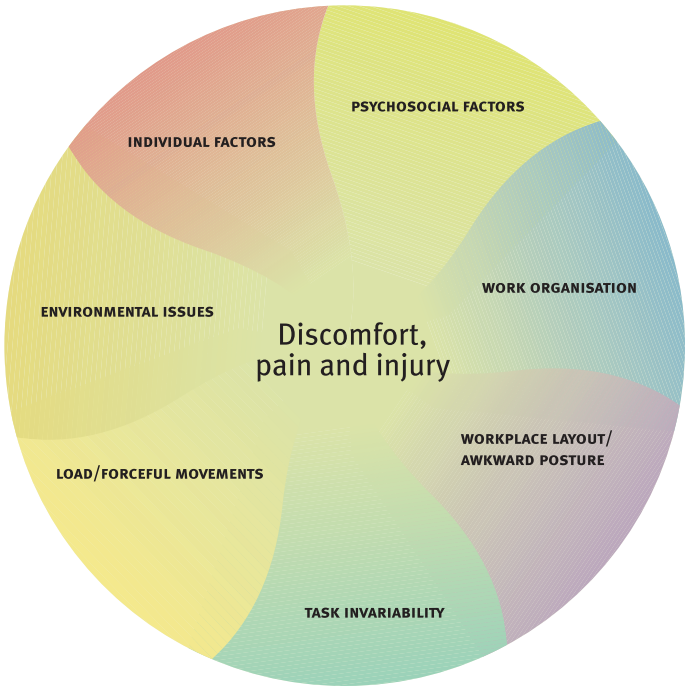
1. Occupational overuse syndrome (OOS) prevention programme
2. Acute low back pain programme
3. Serious (specific) back injuries prevention programme, which included the early patient handling guidelines.

DPI can be prevented or managed if the pain and its contributory factors are addressed in the early stages. Where feasible, workers should be able to stay at work, providing changes are made to address factors contributing to their conditions. The

13. New Zealand Government, 2003.
14. ACC, 2005.
15. Information about the DPI Programme is available from the ACC website at: www.acc.co.nz.

seven groups of factors that combine to contribute to DPI are shown in Figure 2.3 and described below.

FIGURE 2.3: THE DPI FRAMEWORK



Individual factors – things a person can and can't change about the way they are, such as their strength, physical fitness, skills and training.

Psychosocial factors – the way a person interacts with their social environment and the influences on their behaviour, including the development of a culture of safety.

Workplace layout/awkward postures – the way the workplace is set up and the working positions workers adopt, including the facility design and space available.

Work organisation – how work is arranged, delegated and carried out. For moving and handling people this includes policies, management support and training.

Task invariability – how much a task changes over time.

Load/forceful movements – what a person handles and the forces they have to apply to use them, including the use of specific client handling techniques and equipment.

Environmental issues – where the work takes place and the conditions in which a person works, including workplace size, resources and staff skill levels.

Manual handling

Manual handling is a priority area in the *Workplace Health and Safety Strategy for New Zealand to 2015* (Department of Labour, 2005) and is a significant hazard for the healthcare workforce. Broadly, manual handling work requires a person to lift, lower, push, pull, carry or otherwise handle an object. Examples include lifting boxes, packing in a supermarket, undertaking cleaning tasks, operating machinery, using

hand tools and moving and handling people. Poor manual handling practices can lead to musculoskeletal injuries, including sprains and strains and overuse disorders. The Department of Labour is responsible for the ongoing development of the strategy and action plans related to workplace health and safety. It also coordinates the promotion and evaluation of the strategy, monitors implementation, produces accountability reports, and collects and disseminates information through the strategy's website (www.whss.govt.nz).

2.5 Preventing injuries in New Zealand workplaces

A key principle in the prevention of injuries is that primary prevention with multiple strategies works best (Box 2.3). It is better to allocate resources to prevent injuries rather than only provide treatment for injuries once they have occurred. Primary prevention involves tackling the causes of injuries that are most amenable to change. One view is that there are three general strategies for isolating, eliminating or minimising the likelihood of injuries (sometimes referred to as the three Es):

- **Education** – persuading people to alter their behaviour, for example through training
- **Engineering** – designing the work environment and providing equipment for moving and handling people
- **Enforcement** – requiring changes that reduce injuries by law or administrative rules, such as organisational policies and programmes.

BOX 2.3

Key points in the *New Zealand Injury Prevention Strategy*

Current evidence suggests that injury prevention will work best when it:

- Addresses the multiple factors that contribute to injury
- Encourages environmental and behavioural change
- Engages the people who are most at risk
- Involves action across sectors (e.g. health, police, education)
- Is sustained and reinforced over time.

Source: New Zealand Government, 2003, p. 9

Who should be responsible for making the changes that can reduce workplace injuries? There are four key groups of change agents:

- **State or government agencies** that identify the broad strategies needed and the specific health and safety requirements, and help provide resources for organisations and individuals
- **Organisations**, such as companies and employers where healthcare, residential care, disability care and other staff work
- **Professional associations and unions** (e.g. the New Zealand Nurses Organisation, The New Zealand Public Services Association and the Service and Food Workers Union)
- **Individuals in workplaces**, such as managers and employees, for whom the initiatives are intended to reduce the risk of injuries.

Each of these four groups has key roles in creating a **culture of safety** in New Zealand workplaces (see Section 11 Workplace culture). A culture of safety is one that fosters and promotes a working climate where safety is valued by every person working in an organisation. Such a culture ensures that responsibility for safety is an integral part of every manager's and employee's job.

The purpose of fostering a safety culture in an organisation is to guide how employees behave in the workplace. Safety culture involves a focus both on the attitudes and behaviour of employees and on their work activities. Workplace behaviour is shaped by what behaviours are acceptable and rewarded by management and colleagues. Creating a safety culture requires an assessment of rewards systems to ensure they encourage safe behaviours by both managers and employees. One way of thinking about safety culture is adding an emphasis on working safely to the existing cultural patterns in a workplace, rather than creating a separate layer of workplace patterns.

An essential part of sustaining injury reductions for the long term is to set up monitoring systems that allow assessments of ongoing effectiveness and ensure that the prevention strategies used are cost effective. This requires setting up incident reporting systems where injuries and events that could have led to an injury ('near misses') are routinely recorded and reviewed. This is more effective when incidents are reported anonymously. Active reviews of incidents, followed by appropriate actions, should operate in all organisations to ensure continuing improvement in health and safety systems.

A key feature of the development of a safety culture in New Zealand has been the growth of workplace health and safety initiatives, such as the appointment of occupational health and safety managers (see Box 2.4). Many workplaces now have designated managers or coordinators for health and safety. Large organisations often have health and safety sections with several people, each of whom has responsibility for a specific aspect of health and safety. For example, many District Health Boards in New Zealand have occupational health and safety managers responsible for staff and client safety. Some units have designated people responsible for ensuring the safe moving and handling of clients. In some cases businesses use external health and safety consultants to provide advice on the most effective ways to set up and improve their health and safety systems.

BOX 2.4

Development of occupational health and safety positions in New Zealand

- Occupational health and safety managers monitor workplace hazards and risks and advise workers and managers on how to minimise or eliminate or reduce hazards
- In 2006 there were 1035 health and safety positions in New Zealand
- In June 2009 there were 590 private occupational health and safety businesses. Most of these were in Auckland, Canterbury and Wellington.

Source: www.careers.govt.nz

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SECTION 3

Risk assessment

Contents

3.1 Why risk assessment is important

A 'risk' refers to the possibility of something happening. In moving and handling, the term 'risk' is usually used to refer to the possibility of an injury or other negative outcome occurring. A low risk means a low likelihood of a negative outcome. A 'hazard' is a feature of a task or environment that may lead to injury or harm to a carer or to a client. The purpose of risk assessment is to identify and manage hazards to reduce the likelihood of incidents occurring that could cause harm or injury for carers and clients. Risk assessment is a key preliminary procedure for all types of moving and handling. It needs to be undertaken prior to moving and handling people to ensure hazards are eliminated, isolated or controlled.

BOX 3.1

New Zealand legislation and risk assessment

The use of the term 'hazard' in these Guidelines is consistent with its use in the *Health and Safety in Employment Amendment Act (1992)*, and the procedures recommended for reducing risks are consistent with those required of employers by that legislation.

'We regard the lack of systems for identifying and/or not regularly reassessing hazards in places of work as being serious non-compliance with the health and safety legislation.'

(Department of Labour, 2009a, p. 13)

In many countries (e.g. Australia, Canada, the United Kingdom and the United States) local, regional and national health authorities now have guidelines and codes of practice that include conducting risk assessments before moving and handling people.[1] A primary focus in client moving and handling guidelines is that hazards related to moving and handling clients should be clearly identified and eliminated, minimised or controlled where feasible.

In New Zealand, best practice for moving and handling in workplaces comes under the jurisdiction of the Department of Labour and the Accident Compensation Corporation (ACC). *The Health and Safety in Employment Act (1992)* requires employers to provide safe places of work. Employers are expected to set up systems and procedures to identify hazards in the work environment, assess their significance, provide controls and evaluate the effectiveness of the controls.

1. For example, Royal College of Nursing, 2003; Johnson, 2011.

3.2 Risks related to moving and handling

Several research studies have identified that client moving and handling tasks are associated with an increased risk of injuries (Box 3.2), including an extensive study based on ACC claims in New Zealand (Box 3.3). The identification and control of hazards related to these moving and handling tasks need to consider the following factors:

- Workplace organisation, such as policies and procedures, shift patterns, staff available to assist, workplace culture and training for staff
- Physical work environment, such as workspaces, layout of furniture and equipment available
- Client characteristics such as size and weight, the ability and willingness of the client to understand and cooperate, and any medical conditions that influence the choice of method for transferring or repositioning the client
- Carers and the physical demands of a task, such as the force required, awkward postures and the frequency and duration of the task.

BOX 3.2

Client handling tasks associated with injuries to carers

- Transfers between bed and chair
- Transfers between chair and toilet
- Lateral transfers between bed and stretcher
- Repositioning in bed
- Repositioning in a chair
- Sitting to standing.

Sources: Nelson et al, 2003; Royal College of Nursing, 2003; Waters et al, 2007

BOX 3.3

Moving and handling tasks associated with higher risks of injury for carers in New Zealand residential care

A taxonomic study of ACC entitlement claims that involved 60 days or more off work between July 2007 and May 2009 reported that lifting patients was the most frequently reported task leading to long-term claims. Lifting patients involved 74% (129) of the 176 claims for injuries that occurred while moving and handling patients within the New Zealand residential care (or retirement village) sector. Of the 129 claims involving patient lifting incidents, 61 had information about the types of transfer during which the carers were lifting the patients. Among these 61 claim incidents, 33 (54%) involved transferring patients to or from equipment (e.g. bed, chair, wheelchair, toilet, commode), 15 (25%) involved catching falling patients, and seven (11%) involved picking patients up from the floor.

Source: Ludke & Kahler, 2009, pp. 27-28

3.3 Identifying hazards in workplaces

For controlling risks in workplaces, the *Prevention and Management of Discomfort, Pain and Injury Programme* (DPI Programme), established by ACC in 2006, describes seven general factors related to workplace hazards (see Section 2). These seven factors provide a general context for identifying hazards and controlling risks related to people moving and handling. Hazard identification should be part of risk assessment. Four specific groups of hazard are outlined that make people moving and handling activities potentially hazardous. These hazards need assessment to reduce the risk of injury to carers. It is important to become familiar with these hazards so that the risks can be managed by eliminating, isolating or controlling them.

(i) Hazards related to workplace organisation and practices

Examples of workplace features that are potentially hazardous include:

- Administrative policies and procedures. A lack of, or inadequate, policies and procedures, or policies and procedures that are not followed, can increase the level of risk associated with performing a people moving and handling task
- Equipment not provided or not maintained adequately, for example when a hoist maintenance programme is not followed, funding is not provided for the replacement of obsolete equipment, some types of equipment are not available – such as hold-ups on slide sheets or slings sent to laundry, or not enough equipment is allocated to specific units
- Staffing levels. Too few staff for the number of clients and for people moving and handling tasks can result in increased work demands being placed on the existing staff, for example through more transfer tasks (repetition) on each shift and long durations on moving and handling tasks. This can lead to fatigue and reduced work capacity, and to staff taking shortcuts and unsafe practices. Under-staffing is common during peak times, for example during activities for daily living such as bathing and dressing
- Extended workdays. Long work hours (more than eight hours) can lead to increased exposure to the risk of injury, for example when overtime becomes necessary because staff on the next shift are suddenly unavailable, or people are working in 12-hour shifts catering for dependent people (see Box 3.4)
- Working in isolation. For example, when caring for a dependent person in their home, a carer generally does not have the opportunity to call for assistance. The availability of assistance to a carer will affect the level of risk associated with performing people moving and handling actions
- Lack of variability. This can increase the load on body tissues owing to a lack of changes in posture and the reduced chance of recovery, for example by performing one action repeatedly, such as holding a limb

- Inadequate rest breaks. Not allowing enough time between people moving and handling tasks can contribute to fatigue and overexertion. An example is busy work schedules leading to missed work breaks
- Lack of consultation with workers when purchasing new equipment
- Inadequate training
- Workplace attitudes and practices that do not support a culture of safety.

BOX 3.4

Long working hours reduce quality of care

A case brought before the New Zealand Health and Disability Commissioner involved a person being cared for in her home by nursing agency staff. She had developed pressure sores and foot ulcers as a result of inadequate care. The notes for this decision reported that: 'The records indicate that in the several months prior to Mrs A's death, it was not uncommon for one caregiver in particular to work in excess of 100 hours per week. There are instances of staff working 24-hour shifts with relief for only several hours in the morning or early evening.'

Source: Health and Disability Commissioner, Decision 02HDC08905, retrieved 19 August 2010 from www.hdc.org.nz/2010

(ii) Hazards in the physical work environment

- Slip, trip and fall hazards such as wires and wet floors
- Uneven work surfaces
- Space limitations (small rooms, lots of equipment, clutter)
- Inadequate space around beds and toilets
- Facility design inadequate for transfer tasks in the transfer area and for the equipment required
- Inadequate lighting.

(iii) Hazards related to clients

- Poor mobility
- People who are difficult to move because of their size or condition
- Variation in client cooperation
- A client's ability to hear, see and understand, which may affect their mobility and ability to cooperate
- Cognitive issues such as confusion and dementia
- Language and cultural differences
- Unpredictability of client when being moved

- Client anxiety and fear of moving, which can limit cooperation
- Medical attachments to client, which may limit their ability to help
- Pain, which can affect a client's ability to cooperate.

(iv) Hazards for carers and use of moving and handling techniques

- Force – the amount of physical effort required to perform a task (such as lifting, pushing and pulling) and to maintain control of equipment
- Repetition – performing the same movement or series of movements frequently during the working day
- Awkward positions – assuming positions that place stress on the body, such as leaning over a bed, kneeling or twisting the trunk while moving a client, reaching away from the body or over shoulder height for long periods and while exerting force
- Carer lacks knowledge or training
- Carer may be wearing inappropriate footwear and clothing
- Insufficient number of carers for moving and handling tasks
- Carer working long hours or is fatigued
- No suitable equipment available
- Unsupportive workplace culture.

Uncooperative and aggressive clients

When a client is combative or aggressive, the carer should not attempt to hoist, transfer or reposition the client if there is a risk to the carer's personal safety. If there is an actual or potential risk to the client if a transfer is not carried out, restraint may be necessary. In this case the factors influencing the decision relating to restraint should be documented and all carers should be made aware of these factors.

Healthcare standards in New Zealand require that any restraint used must be the least restrictive for the least amount of time, and used only after all less restrictive interventions have been attempted and found to be inadequate. Restraint is a serious intervention that requires clinical justification and oversight and should be used only in the context of ensuring, maintaining and enhancing safety, while maintaining the client's dignity. If a client is being physically restrained, the carer must be trained and certified in restraint practice. For carers working alone in the community, there should be an agreed procedure for seeking assistance. This is essential to prevent undue distress and serious harm to the clients being restrained, and to maintain the safety of carers.

An uncooperative or aggressive client who needs to be moved and handled for personal care may need to be assessed under the *Mental Health (Compulsory Assessment and Treatment) Act (1992)*. In such a case, a care plan involving all members of the care

team should be in place. A restraint register, or equivalent process, is legally required to provide a record of restraint use for audit purposes, as described in the Standards New Zealand document: *Health and Disability Services (Restraint Minimisation and Safe Practice) Standards*.[2]

Organisations need to develop their own policies and procedures on calming and restraint that complement their moving and handling policies. Policies should be based on the *Health and Disability Services (Restraint Minimisation and Safe Practice) Standards*.[2]

2. See Standards New Zealand, 2008

3.4 Workplace hazard management and risk controls

Workplace health and safety policies should incorporate moving and handling and are the responsibility of management. They should include risk assessment and risk control processes.

Typical risk control features include:

- Written information and protocols (e.g. hazard register with risk or hazard control plan, workplace profile)
- Equipment provided for moving and handling clients
- Training programme for client moving and handling
- Incident and injury reporting systems.

Carers should be familiar with their workplace hazard registers and risk control policies and procedures. The subsequent steps in workplace risk assessment processes should be consistent with risk control and hazard management policies.

Workplace profile

Further information on developing a workplace profile in which workplace risk controls for moving and handling can be included, are described later in this section (3.6 'Risk assessment tools') and a detailed example is shown in Appendix 3.2. For some locations, such as residential care facilities and community settings, the workplace risk assessment process may need to be adapted to control risks for carers and clients (see Box 3.5 and Appendix 3.5).

Client risk assessment (load)

Client characteristics that can affect moving and handling risks include (but are not limited to) size and weight, level of dependency and mobility and extent of client compliance. Some specific points to note are that:

- A client's physical characteristics must be known and prepared for in planning
- Clients may have specific physical constraints such as their fragility, tiredness, having contractures, being unable to lie flat, intravenous lines, drainage bags, intubation and frames
- Clients can sometimes be resistive, unpredictable, confused and uncooperative.

Carer risk assessment (individual)

The capabilities of carers involved in moving and handling clients include their physical ability, training related to moving and handling, level of stress and fatigue and the number of other carers involved. Examples of specific risks for carers are:

- Staff who are inexperienced, inadequately trained or unfamiliar with clients and moving and handling equipment
- Continual moving and handling of clients for long periods
- Inadequate staff numbers for safe moving and handling.

BOX 3.5

Example of a community risk assessment

Task – caring for a client in a low bed and on a double bed, including:

- Clinical procedures carried out on the client in bed
- Turning in bed
- Moving up and down the bed
- Sitting client to lying and vice versa
- Bed-bathing
- Getting client in/out of bed.

People involved – carers, including public health nurses, family members and physiotherapists.

Identified risks

- Prolonged stooped postures when attending to client
- Awkward posture when moving client in bed.

Control measures – the level of risk depends on the client and the environment and should be assessed locally. For medium to high risks, consider using these options when working with a client:

- Place knee(s) on bed or floor to reduce stooping when attending to the client (consider infection-control issues)
- Provide electric profiling bed
- Provide hoists and sliding boards for transfers to and from bed
- Keep the client in bed until equipment is available
- Provide extra staff as required
- Provide low stool for carers and staff.

An assessment may result in a recommendation to move furniture or provide equipment. This would need to be discussed with the client and their family. The environment should be managed appropriately, and if the client and family refuse assistive equipment, care may need to be scaled down to avoid risks to carers.

Adapted from: Royal College of Nursing, 2003

Task risk assessment

A task risk assessment includes identifying the specific type of moving and handling task, matching the moving and handling procedure with the load and task, and ensuring that the equipment needed for the task is available. Note that the following are higher-risk tasks:

- Repositioning in a bed
- Repositioning in a chair
- Transfers between bed and chair
- Transfers between chair and toilet
- Lateral transfers between bed and stretcher
- Sit to stand
- Prolonged or sustained holds, such as holding a limb while changing a dressing or changing clothing.

The task will need re-planning if carers need to do any of the following:

- Awkward postures, such as prolonged or repeated bending forward or sideways, twisting, and working at or below knee level
- Exerting high force, such as when holding, restraining or pushing or with loads not equal for both sides of the body
- Reaching away from the body or over shoulder height for long periods or while exerting force (see Box 3.6).

BOX 3.6

One carer or more than one carer needed?

A common question, particularly for clients receiving care in their homes, is whether one carer or two or more carers is needed to transfer a client. Best practice is that, for all new clients and clients whose status has changed, there must be a rigorous **on-site** risk assessment carried out by a person who is experienced in moving and handling assessments. The risk assessment should then be used to determine how many carers are needed for specific types of client transfers. Where there is a significant change to a client's mobility or following an incident, a risk assessment should take place as soon as possible.

Environmental risk assessment

An environmental risk assessment includes the physical space, equipment available, floor surfaces, clutter, lighting, noise and temperature. For a comprehensive environmental assessment for a client, some specific environmental features to assess are:

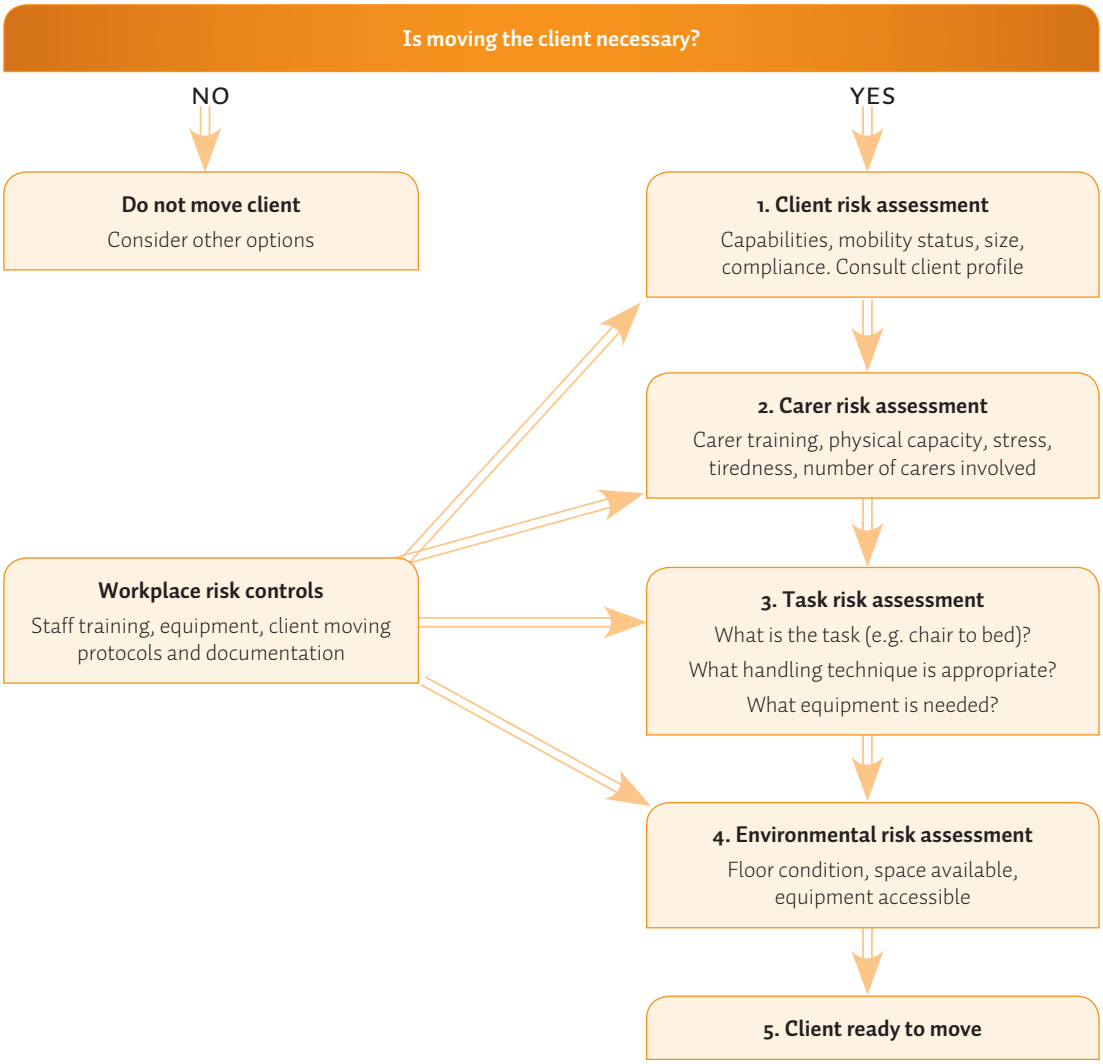
- Inappropriate furniture and fittings, such as wind-up and manual-adjust beds, low baths and low client chairs
- No grab rails in bathrooms, toilets or corridors
- Limited space and access to working areas
- Equipment not easily moveable
- Slippery floors
- Carpets that make pushing equipment difficult
- Narrow doorways or ramps
- Changes of level at lifts.

An example of a specific system or approach for client risk assessment, known as the 'LITEN-UP' approach, is shown in Appendix 3.1. LITEN-UP has been used in some facilities in New Zealand since 2003 and is suitable for use where a healthcare provider wishes to use a specific client risk assessment system.

3.5 The risk assessment process

Before any moving and handling of a client, there should be a systematic risk assessment to identify risks and organise controls. Figure 3.1 provides an overview of the process of risk assessment.

FIGURE 3.1 OVERVIEW OF THE RISK ASSESSMENT PROCESS



When a decision has been made that a client should be moved, the carer needs to carry out the specific risk assessment procedures relating to the client, the carer (or carers), the task and the environment in which the task will take place. The components for the specific risk assessments are described in more detail below.

The risk assessments set out in this section are primarily relevant for inpatients or clients receiving ongoing care. Carers who have only brief contact with clients (e.g. ambulance and fire service staff) should use briefer checklists or assessments, which can be adapted from the examples shown in this section.

3.6 Risk assessment tools

This section outlines five assessment procedures that contribute to the overall client assessment. The assessment procedures include the workplace profile, client profile and client mobility, falls and pre-movement risk assessments. Examples of specific assessment tools are included in the section appendices. These tools and examples illustrate possible ways for conducting risk assessments. Each organisation should adapt the existing tools and forms to suit its specific needs, or develop its own tools.

Developing a workplace profile

The workplace profile is a specific moving and handling audit of the environment in which carers work. It can include both people handling and object handling. From the workplace profile, controls are developed to maximise staff and client safety within the workplace. A workplace profile and risk control plan help organisations meet their legal responsibilities. It sets out what the risks are, what will be done about them, and when changes should be made and by whom. They can also be used to record and control risks and other safety issues identified during client moving and handling. The information gathered should be integrated into the organisational moving and handling programme and included in training programmes.

The workplace profile can be used to:

- Identify and prioritise the areas that are potential risks or need improvement to reduce moving and handling risks
- Establish a baseline from which to measure improvements
- Give a 'snapshot' of the workplace, including a client's home where relevant – information that could be useful when dealing with consultants, designers, suppliers and technical experts
- Develop information that can be compared with other work units or organisations
- Provide information needed to prepare a risk control plan
- Provide information needed as part of the organisational moving and handling programme.

Who does the workplace profile?

The ward or unit manager is responsible for completing or delegating the task of completing the workplace profile and developing a control plan to address the risks identified. They should work with the client moving and handling adviser or the health and safety coordinator and arrange for discussions at staff meetings to get feedback from staff. The workplace profile should be completed at least every year, and updated earlier whenever there is a significant change in the workplace.

What does the workplace profile involve?

The workplace profile is in two parts:

- **Workplace details** – this covers client populations, staff numbers, equipment and facilities
- **Workplace risk assessment** – this uses a scoring system to identify risks and prioritise actions to build an effective client moving and handling programme.

Risks you will need to think about include:

- **Equipment** – Do you have the right equipment for the tasks you carry out, do you have enough equipment, what sort of condition is it in and is it readily accessible for staff to use? Are there an equipment maintenance schedule and replacement plan?
- **Staff** – Do you have enough staff, do they know what is expected of them, has everyone done the basic training required, and do you have clear policies and procedures to guide them? Is the workplace culture supportive?
- **Environment** – Is there enough space for moving and handling operations, can you improve the layout and remove clutter to improve conditions, and can you provide mobility aids to help clients be more independent?
- **Incident reporting** – Do you have a culture of reporting near misses and accidents relating to moving and handling?

Appendix 3.2 at the end of this section provides an example of a workplace profile.

The client profile

The client profile summarises a client's details, capabilities and action plan. The client profile includes information on individual client characteristics and factors that could affect client moving and handling. It provides information needed to make decisions about the techniques and equipment required, and other controls for client moving and handling. Where relevant, it can include 'clinical reasoning' relevant to specific recommendations regarding equipment and techniques (see Box 3.7).

The client profile should be signed off by an authorised person. In healthcare facilities, this will usually be a registered nurse, physiotherapist or occupational therapist. The profile provides a guide for all carers who work with the client. Appendix 3.3 provides an example of the summary details that can be included in a client profile. Each organisation needs to ensure that, whatever type of client profile is used, it contains information relevant to moving and handling.

Who does the profile and when?

For admissions to health facilities, usually a registered nurse, occupational therapist or physiotherapist completes the client profile when a client is admitted. Staff who are required to complete or review the client profile should be identified by the

organisation or unit manager and trained appropriately. The profile should be reviewed periodically or as circumstances change, such as:

- When the client's condition or treatment changes
- At agreed periods as per policy (e.g. in some District Health Boards it is every three days)
- When conditions in the ward or unit change (for instance if layout or procedures change)
- When the client moves to a different ward or service
- When there has been an incident or injury involving the client.

BOX 3.7

Clinical reasoning in client profile information

Including clinical reasoning for a technique or equipment choice helps where staff may later question a decision, or do not understand why a specific choice was made. For example, a carer has tried a simple turning device to assist a standing turn from wheelchair to bed, but the client feels unsteady because they prefer to hold on to something during the turn. Instead, a turning device with a handle is used. A new supervisor makes an independent assessment and decides the more expensive device is not necessary, failing to consider the previous decision outcome that the ordinary turn disc was unsuccessful. The new supervisor restarts the process, potentially leading to distress for the client and frustration for other staff. Documented clinical reasoning, especially in complex situations, enables future assessors or practitioners to understand the decisions taken and review these appropriately.

Source: Carole Johnson, moving and handling consultant, UK

For residential care facilities, there should be an initial risk assessment at the time of admission of a client and at regular intervals following admission. The initial risk assessment should be completed by a staff member who has had training in moving and handling risk assessments and is deemed qualified to do so by the organisation. Prior to any transfer, the risk assessment should also be checked by the carer who will be moving the client.

For clients in home care, an initial on-site risk assessment should be carried out by a carer deemed qualified by the organisation. It should involve the client, the client's family where appropriate and if applicable the funder. The risk assessment should note what moving and handling equipment will be required, what changes (if any) are needed in room or building layout, and whether the client will require assistance from one or two carers for specific transfers (see Appendix 3.3). The carer assigned to the client will be responsible for carrying out the care specified by the risk assessment prior to each client transfer. Sole carers should be able to request specialist risk assessments following any significant changes in clients' mobility, profile or environment, or following any indication that more than one carer or different equipment may be required to transfer clients.

What information is included in the client profile?

The client profile summarises the client's details, capabilities and needs and provides a moving and handling plan when needed (see Appendix 3.3). It consists of two parts:

1. **The client risk assessment** covers factors that can affect client handling and increase moving and handling risks, such as pain, medication, orthotics and compliance. If the assessment shows there are any risk factors, the second part, the moving and handling plan, must be completed
2. **The moving and handling plan** records the techniques, the equipment considered appropriate for each moving and handling task and the number of carers required. It should be followed by everyone carrying out the tasks, unless the client's condition has changed. For instance, a change in a client's condition or medication may have altered their balance or ability to follow instructions. Not every client will need a moving and handling plan, but the assessment part of the profile should be done for every client and regularly reviewed in case things change.

The client profile provides carers with the information they need in a clear and consistent way. It provides a quick overview of the client's condition and any moving and handling needs. It sets out the techniques and equipment most suitable for each moving and handling task, and provides a quick checklist of the factors that carers need to consider before they carry out the task.

The client profile should be:

- Available to everyone who works with the client
- Considered, and if necessary reviewed, before each moving and handling task is carried out
- Kept with the client's medication and treatment care plan (at the bedside)
- Sent with the client if they move to another ward or service.

Involve the client where possible in the development of the client profile. This will assist with introducing any specialist equipment required. It is essential to explain to the client how the equipment works and what the benefits are. It is also important that the client understands that the assessment is reducing the risk of injury to carers and themselves.

Client moving and handling plan

The client moving and handling plan includes:

- Client mobility assessment
- Falls risk assessment
- Equipment
- Techniques
- Staff required.

A client mobility assessment is carried out whenever a new client is admitted. It assesses the client's need for assistance. There are several systems used to assess client mobility or dependency. These range from simple to quite complicated systems. In most cases, it is better to have a simple system that allows for additional comments when needed. The client mobility information should be incorporated into the client profile and should be accessible to all staff responsible for caring for the client. Client mobility information should be updated regularly. The frequency of updating depends on the client's condition and progress.

Box 3.8 describes some commonly used categories of client mobility that can be used to assess a client prior to moving them. The client's mobility status will determine the selection of a specific technique for the moving and handling task. For clients categorised as 'assisted movement', the assistance required may range from moderate to substantial. This is reflected in having more than one technique for some transfers where clients need assistance. These variations should be recorded on the client profile form.

BOX 3.8

Assessment of client mobility

Independent: Client does not require assistance, able to move on own without supervision.

Supervised movement: Client can move on own provided they are supervised. May need oral instruction and some physical assistance (such as lowering the bed or positioning a chair) with preparation for a move.

Assisted movement: Client requires some or considerable physical assistance. Client is cooperative, willing to assist movement and has weight-bearing capacity.

Dependent: Client is completely dependent on help from carers to move. Client is unable or unwilling to assist.

Each facility needs to develop its own system that can be easily conducted and clearly communicated to all staff involved in moving and handling clients. Examples of two systems for categorising client mobility are shown in Table 3.1.

An example of a more complex mobility scale is the Physical Mobility Scale, developed to assess mobility in frail older people.[3] In this scale, eight movements are covered (Box 3.9) and each movement is scored on a six-point scale (0 = unable to do unaided; 5 = independent, no assistance required).

BOX 3.9

Movements covered in Physical Mobility Scale

1. Rolling
2. Lying to sitting
3. Sitting balance
4. Sitting to standing
5. Standing to sitting
6. Standing balance
7. Transferring from bed to chair
8. Ambulation ability.

Source: Nitz et al, 2006

TABLE 3.1 EXAMPLES OF MOBILITY ASSESSMENT TOOLS

Example 1 Hoist, Assist, Supervise, Independent (HASI)*	Example 2 Patient Movement Classifications**
Hoist – moving and transfers require the use of a hoist	**Total assist/max assist** – patient performs less than 50% of task and demonstrates any of the following: poor safety awareness, serious gait impairment, poor sitting balance and/or weight bearing restriction (Red colour code)
Assist – some assistance is needed from the carer and/or use of equipment	**Mod/min assist** – patient performs 50-75% of task but may be unsteady, unpredictable, have a motor planning deficit and/or a weight bearing restriction (Orange colour code)
Supervise – client can move by self but needs supervision by a carer during movement	**Supervision/mod independent** – patient performs 100% of task but requires assistance setting up or using equipment (Green colour code)
Independent – client can move without assistance or supervision	
* Waitemata District Health Board provided the information about HASI.	** Swedish Medical Centre, 2007, Safe Patient Handling Risk Assessment.

3. Nitz et al, 2006.

Falls risk assessment

When a client is assessed as being at risk of falling, this risk status should be communicated to all staff, the client and the client's family. This should be recorded in the client profile and mentioned during handover communication, on signage, and in line with any local falls prevention strategy, policy or documentation. If the client's mobility is likely to change over a day, the client profile should reflect these changes so that information on the client's mobility is up to date. The risk rating should reflect the client's least able times. For example, someone who can walk with an aid and lots of assistance may still need hoisting at 3am for a toilet visit, so both should be recorded.

Pre-movement risk assessment

A pre-movement risk assessment is carried out immediately before moving a client. Staff and carers should be familiar with the workplace profile and the client profile, and use the information from these sources as part of the pre-movement risk assessment. The purposes of the pre-movement risk assessment are to identify specific risks prior to moving a client and to plan the move so that the risks are controlled or reduced. This may involve consultation among carers or between a carer and unit manager, especially where several pre-move risk factors are identified. An example of a pre-movement risk assessment form is shown in Appendix 3.4.

A pre-movement risk assessment needs to be done prior to every move. Any changes in the client's condition need to be documented in the client's notes. If a carer is in doubt regarding the client's condition, they should seek advice from their clinical or professional supervisor.

3.7 Monitoring risk assessment

The final step in the process of managing exposure to the risks associated with people moving and handling is to monitor and review the effectiveness of measures. This is necessary to make sure the systems are working as intended. Monitoring assesses the extent to which organisational systems and control measures are working and ensures they are implemented systematically throughout the workplace. It is important to consult a range of staff, particularly those who have worked with the control measures.

A specific part of monitoring and review is to conduct audits of risk assessment procedures. An audit refers to a performance review intended to ensure that what should be done is being done. Where there are gaps, an audit should provide information that enables improvements to be made. Instructions on how to conduct a risk assessment audit are described in Section 13 Audits.

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Appendices: Resources for risk assessment

These appendices include resources relating to risk assessment. It is recommended that each organisation adapt existing tools and forms to suit its specific needs, or develop its own tools. Examples of other tools are in the reports listed in 'References and resources'.

Appendix 3.1 Example of a risk assessment system: The LITEN-UP approach

Appendix 3.2 Example of a workplace profile

Appendix 3.3 Example of information included in a client profile

Appendix 3.4 Example of pre-movement risk assessment form

Appendix 3.5 Example of a client assessment profile for home caregivers

Appendix 3.1 Example of a risk assessment system: The LITEN-UP approach

This appendix describes an example of a specific system or approach for client risk assessment, known as the 'LITEN-UP' approach. LITEN-UP has been used in some facilities in New Zealand since 2003. It is suitable for use where a healthcare provider wishes to use a specific client risk assessment system.

The purpose of LITEN-UP is to ensure that client handling is safe for both carers and clients. Risk can be assessed using the LITE principles outlined below in conjunction with suitable assessments of client dependency. The LITE principles, combined with client profile information, provide the information needed to make decisions about safe client handling.

The LITE principles

LITE is a way to remember the key risk factors that should be considered when preparing a safe client handling strategy. The LITE principles are described in the table below.

LITE principles	
Load	Load refers to the client characteristics that can affect the handling risk, such as age, gender, diagnosis, comprehension of oral language, dependency, neurological status, size, weight, ability, extent of client cooperation, client disabilities, culture and fall risk.
Individual	Individual refers to carers who are moving the client. It includes the carers' knowledge, training, general health and fatigue that can affect one's ability to do the job.
Task	Task refers to the nature of the moving and handling task to be done, how and when. Different tasks have different challenges. Each moving and handling task needs assessment and a specific strategy.
Environment	Environment means the working environment, and covers factors such as space, equipment availability, staffing levels, work culture and resources, which all impact on how the task can be done.

In the LITEN-UP approach, risk factors are not necessarily assessed in the order shown, and not all risk factors need to be completely reassessed in every situation. In most wards or units the 'Environment' and 'Individual' factors can be assessed by staff (or other people who are trained in risk assessment) and applied to most client handling situations. Generally, carers must consider all four LITE principles before selecting a handling technique and organising any equipment required. Check the information in the client profile, related to risk assessment, prior to moving the client to ensure appropriate handling procedures are used.

Appendix 3.2 Example of a workplace profile

Workplace profile (Part A)		
Organisation		
Last review date	Next review date	
Ward or unit	Profile completed by	Date
Profile of clients		
Number of beds or places (in unit)		
Types of client admitted (e.g. age range, medical conditions, short term or long term)		
Profile of staff		
Senior staff	Permanent staff	
New graduates	Casual and agency staff	
Nursing assistants	Other staff	
Number of staff involved in moving clients	Proportion of staff who have attended manual handling training (one day or more)	
Person (or people) responsible for policy, advice, training, practices and equipment maintenance relating to moving and handling in this unit (list names, job titles and responsibilities)		
Name	Title	Responsibility

Workplace profile (Part A) *Continued ...*		
Equipment inventory (list types of equipment available for use in unit)		
Equipment item (note number in unit)	**Location** (note if shared with another unit)	**Maintenance**
Ceiling hoists		Performance verification sticker must be in date
Mobile hoists		Performance verification sticker must be in date
Hoist slings (mobile and ceiling hoists)		Disposable slings are one client, multiple use per client, then discarded Multiple use slings are one client, multiple use per client, then laundered (green bag)
Slide sheets (two per occupied bed)		One client, multiple use per client. Launder (white bags) after discharge or soiling
Pat slides		
Transfer belts		
Electric beds		
Add other equipment items as needed		

Workplace profile (Part B)		
Profile of facilities		
Number of beds	Number of toilets	
Number of electric beds	Number of bath/shower rooms	
Equipment storage areas		
Add other facility details as needed		
Moving and handling activities (training, communication, maintenance and upgrading)		
Activity or event	**Describe arrangements**	**Person responsible**
Induction briefing for new staff on moving and handling		
Ongoing moving and handling training for staff		
Record of staff training completed		
Communication of moving and handling policies and practices to staff and clients		
Client mobility assessments		
Routine equipment checks		
Equipment repair and replacement		
Risk control plan		
Incident reporting		
Injury reporting		
Risk assessment audits		
Identification and reporting of facility features (e.g. buildings, space, flooring) that need upgrading		
Add other activities as needed		

Appendix 3.3 Example of information included in a client profile

Client profile		
Organisation		
Last review date	Next review date	
Ward or unit	Profile completed by	Date
Client details		
Name		Preferred name
Height	Weight	Date of birth
Relevant medical conditions		
Client mobility status Independent _____ Supervise _____ Assist _____ Hoist _____ Note any specific conditions that affect moving the client		
Falling risk	Skin at risk	Medical equipment
In pain	Incontinence	Surgery risks
Impaired movement	Vision problems	Footwear needs
Loss of sensation	Hearing problems	Compliance issues
Other communication issues	Other issues (e.g. cognitive state). Describe here	
Handling plan required? No____ Yes____ complete details below		
Task (add tasks as needed)	**Technique to be used, number of carers, equipment needed**	**Comments***
Sitting and standing		
Walking		
Moving in bed		

*For example client capabilities, clinical reasoning

Appendix 3.4 Example of a pre-movement risk assessment form

Circle one			Circle one		
Client assessment			**Carer (staff) capability**		
Large or very large (bariatric) client	No	Yes	Staff not adequately trained for or confident about planned move	No	Yes
Client unable to assist	No	Yes	Continual handling of clients for more than 30 minutes on shift	No	Yes
Client physical constraints (e.g. medical equipment in place, spinal or other injury)	No	Yes	Insufficient staff numbers for move	No	Yes
Client may be resistive, unpredictable or uncooperative	No	Yes			
Task assessment			**Environmental assessment**		
High-risk move*	No	Yes	Limited space or access to working areas	No	Yes
Move requires awkward postures, bending, twisting	No	Yes	Slippery floors, uneven surfaces	No	Yes
Move requires high force, holding, restraining	No	Yes	Inappropriate furniture, such as wind-up beds, no grab rails in bathrooms	No	Yes
Move requires reaching away from body or over shoulder height	No	Yes	Equipment not easily moveable	No	Yes
Total column score ('Yes' selected)			**Total column score ('Yes' selected)**		
*High-risk moves include: repositioning in bed, repositioning in a chair, transfer between bed and chair, transfer between chair and toilet, lateral transfer bed to stretcher.			**Total risk score =** (out of 15) Scores over 6 indicate need to re-plan move to control or reduce risk		

Appendix 3.5 Example of a client assessment profile for home caregivers

Client Assessment Profile

The following criteria are designed to assist a home caregiver who is in the process of making a decision regarding access to an appropriate hoist. Once you have considered these criteria, we recommend you consult District Health Board staff, ACC or staff in other organisations who are familiar with moving and handling equipment to get advice on recommended models of hoists, slings, beds and accessories to meet your specific needs. Occupational therapists and physiotherapists may also be able to advise on access to Ministry of Health and ACC funded moving and handling equipment.

Client dependence – the client's required level of assistance is one of the most important criteria when determining hoist types and accessories. When considering a hoist, assess whether the client is fully dependent or partially dependent on the carer for assistance in getting into and using the hoist.

Client clinical condition – the client's clinical and mental condition can also affect hoist selection. Make a note of pain levels, fractures or joint limitations, medication, recent surgery, muscle spasms, sensitive skin, ability to communicate, agitation and cooperativeness.

Client strength and stamina – both the client's upper and lower body strength must be taken into consideration before making a hoist recommendation. This may determine whether a standing hoist, ceiling hoist ,gantry hoist or a mobile floor hoist would best suit your needs.

Weight bearing – another important consideration is the client's ability to bear their own weight for a period of time and to retain their balance.

Physical characteristics – make a note of the client's size, height and weight. Weight will help to determine the type and model of hoist, while size/shape will help to determine sling size and type. Ensure you have the correct safe-working-load hoist to fit your client.

Special circumstances – make a note of any other factors, such as general practitioner or therapy recommendations, surgical dressings, attached medical equipment and anticipated length of recovery. NOTE: If the client's condition is permanent or long term, you may wish to consider getting a hoist. Contact an occupational therapist or physiotherapist for advice or to access Ministry of Health or ACC funded moving and handling equipment.

Adapted from:
www.safeliftingportal.com/homecare/patient-lift/assessment-information.php.
Retrieved 19 August 2010

SECTION 4

Techniques for moving and handling people

Contents

4.1 Overview of moving and handling techniques

This section covers a number of techniques commonly used in moving and handling people. These techniques are applicable to most settings where people are moved. A key aim has been to present a generic set of moving and handling techniques that are consistent with best practice. Most of the techniques in this section have photo sequences illustrating the specific moves.

There are several systems for categorising the common types of client movement. In this section, we use four main groups of transfers: (a) sitting and standing, (b) moving in bed, (c) lateral transfers between surfaces at similar heights and (d) using hoists.

Of all the topics covered in moving and handling, views about what are considered safe and unsafe techniques generate the most comment and debate. Numerous techniques are used for moving and handling people. The techniques included in this section are consistent with current accepted practices internationally and are based on research literature and advice from experienced moving and handling educators in New Zealand. The list covered is not complete. It presents examples to illustrate some aspects of best practice in moving and handling.

We have used the generic term 'clients' throughout this section to refer to people being moved, to distinguish them from the carers who move people. Although many healthcare facilities use the term 'patients', these Guidelines also cover residential and community-based care.

All the techniques outlined require that: (a) carers receive appropriate training, (b) risk assessments are conducted, and (c) suitable equipment is available. We do not expect that carers will be able to learn the techniques solely from these Guidelines. Training by a qualified educator is essential before using the techniques.

Protocols and specific procedures for dealing with aggressive, combative and uncooperative clients require additional consideration. Section 3 Risk assessment has more information about assessing uncooperative and aggressive clients.

4.2 Preparations for moving and handling people

There are several types of preparation to take into account before moving clients. In this section, preparations for caregivers are covered first. This is followed by: assessment of client mobility, risk assessment, preparation for a specific transfer, communication among carers during the transfer, communication with clients, cultural and religious considerations and the post-transfer assessment.

Preparations for caregivers

Pre-manoeuvre

- Make sure clothing and footwear are appropriate for the task. Clothes should allow free movement and shoes should be non-slip, supportive and stable
- Choose a lead carer: If more than one carer is involved when moving or handling a client, identify who should be the lead carer during the move by giving instructions (e.g. 'ready, steady, move'). The lead carer checks the client profile and coordinates the move
- If there is to be a change of position for the client, decide what it is before approaching them.

General practice

- Know your limits: Know your own capabilities and do not exceed them. Tell your manager if you need training in the technique to be used
- Seek advice: Talk to your manager or the moving and handling adviser if you need advice on the techniques and equipment you should be using.

Risk assessment

Most of the techniques described in this section apply to clients who cannot move themselves, or who need some supervision or assistance during movement. The transfer technique needed will vary depending on the level of client ability and dependency. Before deciding which specific technique is most appropriate to transfer a client, it is necessary to assess the client's level of mobility, cognitive ability and need for assistance.

Prior to using any technique, there should be an assessment of the client's current mobility and any other factors that affect the safety of the planned movement of the client. These assessments are described in Section 3 'Risk assessment' (see Risk assessment and Table 4.3).

The mobility assessment should cover the client's ability to move, sit and balance, and any other relevant factors. The assessment should lead to a decision on the number of carers and equipment needed to transfer the client. This assessment is particularly important in community settings where sole carers are working in isolation. If the assessment indicates that more than one person is required to move

the client or operate equipment, that is what should happen. A robust assessment is essential and carers must use moving and handling techniques consistent with the risk assessment. The risk assessment should determine the number of carers needed, equipment or modifications of the environment. It should be seen as a cost-effective process.

Preparation for a specific transfer

Prior to moving a person, check the following aspects of the planned transfer:

- Check the client profile and carry out a pre-movement risk assessment (see 'Pre-movement risk assessment' in Section 3 Risk assessment)
- Plan the movement, including the order of specific tasks and who will carry out each task
- Get equipment ready: If equipment is to be used, ensure the equipment is available in good order with any required accessories in place and ready to use
- Prepare the environment: Position furniture, check that route and access ways are clear and that the destination is ready
- Prepare the client: Tell the client what will happen, gain their permission, and let them know what they are expected to do. Ensure that the client's clothes and footwear are appropriate for the task, and that they have any aids they need.

Communication among carers during the transfer

Ensure that all instructions and commands used are consistent throughout the organisation. For example, use a clear command such as, 'Ready, steady, stand'. One reason for accidents is the lack of coordination between carers, and a lack of shared understanding within an organisation or facility of what terms or phrases mean when moving clients. Consistent, clear commands help to coordinate carers and minimise risks for these tasks. Carers making eye contact with each other is key to synchronising when more than one carer is involved. Ending the instruction with a word that the client understands ('ready, steady, stand') will also facilitate client confidence in and understanding of what is about to happen.

Communication with clients

Effective communication between carer and client is part of moving and handling. Plan to inform clients and their families about your organisation's moving and handling policy on admission (see Section 11 Communication).

A client may be resistant to being moved or handled in a particular way if they have not been consulted. Explain to the client what you are about to do, and ask their

permission. If they have any concerns about things like safety, modesty issues and gender and religious considerations, address them. Tell them of the benefits of the procedure to be used. As they are being moved, talk them through the steps and ask if they are okay. Ask them how they feel after the transfer, as client feedback is useful to verify that they were comfortable with the move, or whether improvements could be made. Some clients may resist being lifted using a sling and hoist, because they feel their dignity and safety may be compromised. Communicating the benefits for the client – particularly in safety and dignity – may allay those fears and increase client confidence.

BOX 4.1

Telling patients about hoists

When there is poor communication, patients can be very negative about being moved by hoists. We had a patient like this so I had her carer come to training and explained why a hoist is better for the patient. The carer went back and spoke to her patient and the patient allowed her to use the hoist. In my experience, these situations can often be avoided if nurses or caregivers get properly trained and take the time to explain things to patients and reassure them that it will be safer for them. Patients need to be reassured and understand why, and the barriers usually come down.

Source: Manual handling coordinator

Besides noting if a client has hearing difficulties or cognitive impairment, you may need to take into account language and accent issues. Often someone may say 'Yes' simply to give an answer, or 'Yes' meaning 'I hear you but don't understand or want to do it that way'. One way to get agreement to or an understanding of what is to be done with the client is to ensure that what you say is simple language and not health jargon. Alternatively, demonstrate the move with another person reassuring the client and seeking their agreement at the same time. Also, speak slowly (not louder unless the client has a hearing problem) if the client has difficulty understanding your accent.

Cultural and religious considerations

Client moving and handling requires nurses and carers to touch clients even when mechanical aids are used. Some techniques also necessitate close body contact. In some cultures and religions, it is considered inappropriate to touch a person or have physical contact between men and women. When presented with such cultural or religious issues, communication is essential to overcome these barriers to moving and handling.

Explain to the client how you are going to move them, emphasising that it is for their safety. Look for solutions to any individual issues, and if you are unable to fix them, try to compromise. Ask them if they have any questions. It may also be useful to provide an explanation of the move to family members who are present. Alternatively, seek advice from local experts.

Post-transfer assessment

- Assess how well the transfer technique worked. Could the transfer have been done better? Add your comments to the client profile.
- Is the client's dependency status accurate? Are any changes or qualifications needed on the client profile?
- If you identify issues that affect client handling, report them to your manager and add them to the workplace plan for moving and handling clients. This will provide evidence for changes that are needed and may benefit all carers and clients in the organisation.

4.3 Sitting and standing

The techniques in this section cover client movements related to sitting and standing. The section also covers what to do with a falling client and assisting a fallen client. For particular moves, such as sitting to standing, several techniques can be used and some examples of these are described. The particular technique used will depend on the client's mobility and the availability of carers and equipment.

Assisted walking is sometimes included with sitting and standing. If a client requires assistance with walking, they should be assessed by a competent person (e.g. a physiotherapist). If needed, a correct walking frame or aid should be selected. The carer can assist in reducing risks by checking that the walking area has a suitable floor surface and is clear of clutter and that the client is wearing suitable footwear. Carers assisting a person with walking should have basic moving and handling training and specific instruction on assisted walking.[1] Note that providing physical support for a client while walking encourages the client to lean on, or be propped up by, the carer. This increases the load on the carer. For this reason, assisting clients to walk can be a high-risk activity for carers.

Preparation for repositioning a client

As part of the pre-transfer risk assessment, assess the client's weight-bearing capacity. Confirm the client's weight-bearing status by asking the client and the client's nurse or family, and checking the client's profile and mobility status. One way to reduce the risk if no information is available is to ask the client to lift and straighten their legs one at a time from the knee, then place your hand flat on each shin and tell them, 'Don't let me push your leg down', so you are controlling the resistance. The client being able to hold their leg against some pushing is a reasonable indicator of the ability to bear weight. If they are unable to do this, consider hoisting them.

Basic techniques for carers

Two basic techniques with which carers need to be familiar for most of the techniques covered in this section are the lunge position and instructing the client to look in the direction of the movement. These are shown in Figures 4.1 and 4.2.

FIGURE 4.1

Lunge position for carers

FIGURE 4.2

Instructing client to look in direction of move

1. Brooks & Orchard, 2011, pp. 164-167.

Technique 1 Supervised repositioning in a chair

For this technique the chair should be of suitable height (not too low), and have armrests. A slide sheet can also be used to assist repositioning in a chair.

Ask the client to:

1. Put their feet flat on the floor with their feet apart and tucked slightly under the chair – the chair height must allow the client to place their feet firmly on the ground
2. Keep their hips and legs at a right angle
3. Lean forward so their upper body is over their knees
4. Stand up and move as far back into the seat as possible, or
5. Slide back into the seat by pushing back using the armrests and their feet.

FIGURE 4.3

Supervised repositioning in a chair (Technique 1)

1. Put feet flat on floor, slightly apart	2. Lean forward so upper body over knees	3. Slide back in seat by pushing back using armrests and feet
		

Technique 2 Supervised sit to stand

This technique is only suitable if the client can weight bear.

1. Ask the client to put their hands on the armrests of the chair
2. Ask the client to lean forward in the chair and move towards the front of the seat
3. Ask the client to put their feet flat on the floor. The feet should be hip width apart and under their knees
4. Ask the client to lean forward while still sitting, so their upper body is above and over the tops of their knees ('nose over toes')
5. If needed, gently rock the client backwards and forwards to build up momentum to help them stand, while instructing, 'ready, steady, stand'
6. On 'ready and steady' tell the client to rock gently forward on each word
7. On the command 'stand', the client pushes themselves up to a standing position using the armrests or surface on which they were sitting.

Hand blocks or a bed lever can provide support for a client who is standing up from a bed or other firm surface.

FIGURE 4.4

Supervised sit to stand (Technique 2)

1. Client to lean forward and move to front of seat	2. Client's upper body is above the top of their knees, feet hip width apart
	
3. On 'ready and steady' the client rocks gently forward on each word	4. Client pushes themselves up to a standing position
	

Technique 3a Sit to stand with one carer

Before helping the client to stand, check there is enough space around the chair for the carer.

1. Ask the client to put their hands on the armrests of the chair
2. Ask the client to lean forward in the chair and move towards the front of the seat
3. Ask the client to put their feet flat on the floor. The feet should be hip width apart and under their knees
4. Ask the client to lean forward while still sitting, so their upper body is above and over the tops of their knees
5. Carer to stand in the lunge position, facing forward at the side of and behind the client
6. Outside hand is flat on the front of the client's shoulder, inside arm across lower back around the hips, not the waist
7. With weight on the carer's back foot, rock forward with client, same verbal cues ('ready, steady and stand'), stand up with client and bring inside leg through to step in tight to client's side. The carer's hip should be touching the client's side
8. Check client's arms are free and in front of them.

From standing to sitting

1. Ask the client to feel for the chair (or bed) with the backs of their legs, reach for the arms of the chair and gently lower themselves.
2. Encourage the client to bend forward at the hips to facilitate a better position for sitting. Either say 'lean forward and bend at your hips' or place the carer's hand in front of the client's hip.

FIGURE 4.5

Sit to stand with one carer (Technique 3a)

1. Client has hands on armrests and looking straight ahead

2. Carer standing in the lunge position, inside arm on client's hip

3. Ask client to lean forward so upper body is above knees

4. Rock forward with client, on 'ready, steady and stand'

5. Client stands

6. Back view of client standing with carer

Technique 3b Sit to stand with two carers

1. Before helping the client to stand, check there is enough space around the chair for the carers
2. Ask the client to put their hands on the armrests of the chair
3. Ask the client to lean forward in the chair and move towards the front of the seat
4. Ask the client to put their feet flat on the floor. The feet should be hip width apart and under their knees
5. Ask the client to lean forward while still sitting, so their upper body is above and over the tops of their knees
6. Both carers to stand in the lunge position, facing forward at the side of and behind the client
7. Each carer's outside hand is flat on the front of the client's shoulder, inside arms across lower back around the hips, not the waist
8. With weight on their back feet, both carers rock forward with client, with lead carer using the verbal cues ('ready, steady and stand'), stand up with client and bring inside legs through to step in tight to client's side. Each carer's hip should be touching the client's side
9. Check client's arms are free and in front of them.

FIGURE 4.6

Sit to stand with two carers (Technique 3b)

1. Client has hands on armrests and looking straight ahead

2. Carers standing in the lunge position, inside arms on client's hips

3. Ask client to lean forward so upper body is above knees

4. Rock forward with client, on 'ready, steady and stand'

5. Client stands

6. Completion of stand

FIGURE 4.7

Sit to stand with two carers – bariatric client (Technique 3c)

1. Client has hands on armrests, sitting on edge of seat, looking straight ahead	2. Carers standing in the lunge position, inside arms on client's hips
	
3. Ask client to lean forward so upper body is above knees	4. Rock forward with client, on 'ready, steady and stand'
	
5. Client stands	6. Completion of stand
	

Technique 4 Sit to stand with a standing hoist

A standing hoist is only suitable if the client can:

1. Weight bear through at least one leg
2. Cooperate and understand instructions
3. Balance and control their upper body
4. Explain to the client how the standing hoist will help them to stand, and preferably demonstrate how it works – this will also help to reassure them it is safe
5. Apply hoist sling to client. Make sure that the sling is the correct size for the client, tight enough to stop the sling riding up under the arms, but still comfortable
6. Wheel the standing hoist into position and adjust the hoist legs to fit around the furniture
7. Position the hoist's sling bar
8. Ask the client to put their feet on the footplate
9. If the hoist's kneepads are adjustable, adjust them to suit the client, making sure the kneepads are below their patellae (kneecaps)
10. Attach the leg strap around the back of the client's knees, if required
11. Attach the sling to the standing hoist, with the nearest loop reachable without pulling the client forward
12. Ask the client to place hands on the hand grips (depending on hoist type) and stand themselves up as you raise the sling bar. They can lean back slightly into the sling
13. Reposition the standing hoist to where the client is to be seated
14. Lower the standing hoist once the client is positioned over the surface to which they are being moved
15. Encourage the client to bend at the hips or assist with the bend, and lower themselves along with the movement of the sling bar.

Note: It is recommended that the hoist brakes not be on at any point during the procedure, but wheelchair, bed or commode brakes should be on. Exceptions to this recommendation should have adequate risk assessments. It is acknowledged that some instructions from hoist suppliers differ from this recommendation.

If the sling is positioned properly and still rides up, it may indicate that the client is not able to reach a standing position or that the sling is not sized correctly. Do not use this technique if the client is unable to stand; use a full sling hoist instead.

If the client is being moved to sit on a bed so they can lie down, but cannot do this independently, you will need to use a profiling bed and/or handling equipment.

Extra care is needed if transferring a stroke client with a standing hoist, as support may be needed for the stroke-affected arm to prevent damage to the shoulder. Some hoists have arm slings attached for this purpose. Standing hoists are often not suitable for stroke clients with painful shoulders.

FIGURE 4.8

Sit to stand with a standing hoist (Technique 4)

1. Apply hoist sling	2. Position standing hoist
	
3. Position sling bar and attach sling straps to hoist	4. Instruct client to stand
	
5. Reposition hoist	6. Instruct client to sit
	

Assisting a fallen client

The risk of falling depends on many factors. Many healthcare organisations have falls prevention programmes that help them to identify clients at risk so they can develop appropriate strategies.

Preventing falls is far more effective than trying to manage a fall in progress, or managing the after-effects. Prevent falls by identifying any risks, then eliminate, isolate or minimise those risks. If you have a falls prevention programme, the fall risk and brief details of the care plan should be noted on the client profile.

Falls prevention and moving and handling programmes work well together. By creating strategies to reduce the risk of falls, for instance by reviewing medication that causes dizziness, strengthening weak muscles, and improving balance and correcting visual problems, you also improve clients' ability to move more safely.

Sometimes falls result in injury to clients, or occur following a stroke or heart attack. Dealing with emergency situations is covered at the end of this section.

Managing a fall in progress

While trying to encourage independence and mobility, there is always a risk that a client could fall. When a client is falling, it is recommended that the carer not try to stop the fall or try to hold the client up. It is impossible to 'control' a fall by lifting or bearing the weight of the client (see Box 4.2). The emphasis should be on prevention.

BOX 4.2

Why you should not try to catch a falling client

Physiotherapist and ergonomist Dr Mike Fray calculated that the force required to catch a falling client is 480 kilograms (kg) for a 60kg person. This means that if you were to catch a 60kg falling client you will have a force equivalent to 480kg to hold by the time the patient falls to the floor.

Source: Smith, 2005, p. 272

Managing a fallen client

It is important that clients are aware of the moving and handling policy you use, so that they do not expect to be lifted by carers after a fall. If you find a fallen client, you need to assess the situation carefully to ensure that the client does not experience additional harm while you are trying to help them. This affects the method you use and the choice of equipment. Give the client time to get calm, assess the situation, then either coach the client to get up or use equipment to get them up.

Assessing a fallen client

Assess the client's airway, breathing and circulation, and maintain according to CPR guidelines and the client's care plan.

1. Call for help
2. If you are able, make sure that the area around the client is safe and that no further harm can occur; for example, clear any spills or objects away

3. Continue the assessment as needed, using approved first aid procedures, and decide if the client can be moved
4. If the client is injured, make them comfortable on the floor and seek further medical advice
5. If they are uninjured, stay with the client and stay calm; do not hurry them to get up. This will help the client to stay calm and relaxed
6. Choose the right technique to help them up, explain the procedure and talk with them throughout the move to provide reassurance
7. Remember, moving them without assessing the situation carefully could cause injury to you and the client.

The following techniques (Techniques 5 and 6) are relevant to assisting fallen clients without or before the use of a hoist. The use of a hoist to assist fallen clients is described later in Technique 30.

Technique 5 Supervising a fallen client who is conscious and uninjured

Firstly, do not panic; they cannot fall any further. Check the immediate environment for risks, such as a wet floor.

1. Ask the client if they are hurt anywhere. Did they bang their head?
2. Do they remember falling? If they appear unhurt, ask staff not required to leave
3. Place a pillow under their head for comfort – remember touching the head can be taboo in some cultures, so always talk to the client and explain what you are doing
4. Cover them if required
5. Ask if they think they could stand themselves up with instruction
6. Ask client to roll on to their side then get on to hands and knees
7. When they have done this, ask if they are dizzy or feeling worse – if they are, get the client to lie down and hoist them instead
8. Once they are on their hands and knees, place a chair as close as possible to the client's hip. Ask them to use the chair to lean on with their closest hand, and using their nearest leg get them to put their foot flat on the floor then push up into a sitting position using their leg and arm
9. Alternatively, the client may prefer to use their furthest leg and foot to provide extra balance, particularly if the client is large
10. If the client cannot get onto the chair, get them to lie down again and hoist them.

This technique can be taught to some clients who have a history of falling to reassure them that they can get up from the floor independently, particularly pre-discharge from a hospital or care facility. They will need to crawl to a stable piece of furniture that they can use to push themselves up.

FIGURE 4.9

Supervising a fallen client who is conscious and uninjured (Technique 5)

1. Assess client	2. Ask client to roll on to their side and push up with their hands
	
3. Ask client to roll on to their hands and knees	4. Place a chair at the client's side, close to hip
	
5. Client leans on chair with their closest hand	6. Client pushes up to sitting position, sliding bottom into chair using both legs and arms
	

Technique 6 Moving a fallen client in a restricted space using slide sheets

If a client has fallen in an area where a hoist cannot be used (for example, between a toilet and a wall), the preferred option is to slide them to an area where you can use a hoist. For this technique, you need at least two carers and two slide sheets. Sole carers working in the community may need to call an ambulance.

1. Assess environment and safety for you, then the client
2. If the client cannot get up, use two slide sheets, positioned under knees or in small of back depending on how they have fallen. Or you can roll them in the usual way – ensure the slide sheets are under the hips, but do not worry if you cannot get under their shoulders as well
3. With two carers on their hands and knees, or with one knee up, move the client onto the top sheet by sitting back onto your heels. Keep your arms straight and use the momentum of sitting back onto your heels to move the client – it usually takes a few small manoeuvres to straighten the client if they need to come through a doorway
4. Move the client far enough out so they are in a space large enough to be hoisted
5. Where possible, a third person should look after the client's head – the two carers moving the client must work at the speed with which this third carer can safely move
6. Be aware that the client's elbows and feet are at risk of being knocked during this procedure
7. When the client is stable, hoist them to a bed or trolley (see Technique 30 Hoisting from the floor).

FIGURE 4.10

Moving a fallen client in a restricted space using slide sheets (Technique 6)

1. Assess client and environment

2. Make client comfortable

3. Prepare slide sheets

4. Position slide sheets under client

5. Carers prepare to slide client using slide sheets

6. Carers slide client out of restricted space

4.4 Moving people in bed

The techniques in this section cover movements related to moving or repositioning a client when they are in a bed. Prior to using any technique, there should be a risk assessment that includes the client's current mobility and any other factors that affect the safety of the planned movement of the client and carer.

It is important to preserve the pressure-relieving properties of mattresses by minimising unnecessary layers underneath the client, such as surplus bedding. Air mattresses are designed for bed linen to be loose fitting and often have clips to stop linen moving around.

There are a number of ways to help eliminate or reduce the amount of client handling. If repositioning in bed is needed, here are some things to consider:

- The easiest way to reposition a client in bed, if they are able, is to get them up and off the bed, move along the bed and get back in
- Profiling beds reduce the repositioning of clients in bed because these beds can be adjusted easily. Use the knee brace position. It can reduce the likelihood of the client sliding down the bed
- Position the client in an appropriate bed to avoid the need for frequent handling
- Use pillows to support and prop the client and to help stop them becoming uncomfortable
- Encourage the client to move up the bed by 'hip hitching'.

Technique 7 Supervised turning or rolling

Encourage the client to turn using verbal prompts. Ask them to:

1. Turn their head in the direction of the turn or roll
2. Move their inside arm out from the side of their body or place it across their chest to stop them rolling onto it. Flex their outside knee so they are ready to push off with their foot in the direction of the roll
   Note: If they cannot bend their knee, they probably need more than supervision
3. Put their outside arm across their chest in the direction of the roll, so they are ready to reach over or hold on to the edge of the mattress (or hold on to a bed lever, bed pole or cot sides if available)
4. Roll over by pushing off with their outside foot and reaching across their body with their outside hand (or by pulling on the lever, rail or pole with their outside hand).

FIGURE 4.11

Supervised turning or rolling (Technique 7)

1. Ask client to turn head in direction of roll

2. Client flexes outside knee

3. Client puts outside arm across their chest in direction of the roll

4. Client rolls over, pushing with outside foot and reaching across body

5. Client completes roll

Turning or rolling in bed

Repositioning clients in bed is a high-risk activity for carers. Any client requiring repositioning should be on an electric profiling bed or a bed that is height adjustable. Perform all client handling tasks on a bed with the bed positioned to the correct working height. The mattress should be at the carer's hip level so that the carer's knuckles can rest easily on the bed (see Figure 4.12). If a bed is not height adjustable, some of the techniques may need modification.

FIGURE 4.12

Adjust the bed height before moving a client

Before rolling the client, check the client's condition. Consider extra measures if they:

- Are confused, agitated or uncooperative
- Have multiple injuries or pathology
- Are attached to medical equipment
- Have frail shoulder, hip or knee joints
- Have had recent hip surgery (if so, immobilise the hip joint with strategically placed pillows)
- Are obese.

Always turn the client towards you. Direct the turn or roll with your hands on the client's outside shoulder and hip. These are the key points of contact. Make sure the client is not too close to the edge of the bed before turning.

Technique 8a Turning with one carer

This technique can be conducted with one carer, but only if it is appropriate for the client and a risk assessment has been conducted.

1. Adjust bed height for shortest carer; carer's knuckles should easily reach the mattress
2. Stand on the side of the bed towards which the client will turn
3. Turn the client's head in the direction of the roll if they are unable to turn their head without assistance
4. Position the client's inside arm out from the side of their body or put it across their chest to stop them rolling on to it
5. Help the client to flex their outside knee
6. If the client can't flex their knee, cross their legs at ankle level
7. Place hands on client's shoulder and hip and get into a lunge position with all weight on carer's front foot:
   - 'Ready' – 'Steady' – verbal prompts to prepare the client
   - 'Roll' – transfer weight on to back foot, maintaining straight arms so that carer is using their lower body and not arms to roll client over.

FIGURE 4.13

Turning with one carer (Technique 8a)

1. Client crosses arms	2. Client flexes outside knee
	
3. Carer in lunge position and places hands on client's hip and shoulder	4. Carer rolls client on to their side
	

Technique 8b Turning with two carers

Two carers may be required because of the client's size and condition (Figure 4.14). Bed linen or a repositioning sheet may be used if the client is too large to reach their hips and shoulder. Keep your movements slow and smooth to reassure the client. Where three carers are required, the second carer stands beside the first, placing their hands farther past the shoulder and hip with their left arm crossing over or under the first carer's right arm (Figure 4.15).

FIGURE 4.14

Turning with two carers (Technique 8b)

1. Client flexes outside knee

2. Carer in lunge position and gives oral prompts – 'ready, steady, roll'

3. Carer rolls client

4. Client rolled awaiting pillows

5. Second carer places pillows

6. Pillows applied and maximising comfort and pressure relief

FIGURE 4.15

Turning a bariatric client with three carers (Technique 8c)

1. Client flexes outside knee

2. Carers use sheet to roll client

3. Carers roll client

4. Roll completed

5. Third carer places pillows

6. Client stabilised with pillows, bed railings raised

Technique 9 Supervised sitting up in bed

This technique is only suitable for clients with adequate upper limb strength and trunk stability.

Ask the client to:

1. Raise their head
2. Raise their upper body so they are resting on their elbows and lower arms
3. Place their hands flat on the bed beside their hips
4. Push themselves up into a sitting position using their arms.

There are several types of aid that can help a client to sit up in bed, such as bed blocks, bed levers and overhead poles. Clients who require frequent bed repositioning should be provided with electric beds with profiling operations. These aids are described and illustrated in Section 7 Equipment for moving and handling people.

FIGURE 4.16

Supervised sitting up in bed (Technique 9)

1. Ask client to raise head	2. Client places both hands flat on bed and raises upper body using arms
	
3. Client pushes up from the bed using arms	4. Client holds themselves in an upright position
	

Technique 10 Supervised hip hitch movement up the bed

This technique is only suitable for clients with adequate upper limb strength and trunk stability. With hip hitching, the client 'walks' up the bed on their buttocks. They gently rock to one side, lifting the other buttock and moving it up the bed, then they repeat the action on their other side. This technique is especially useful for people who cannot easily weight bear on their arms.

1. Ask the client to sit up in bed (see Technique 9)
2. Ask them to make their hands into closed fists and put their fists just behind their hips
3. Ask them to bend their knees and dig their heels into the bed, ready to push themselves up the bed
4. Ask them to push themselves up by pushing through their heels and fists at the same time, to lift and move their bottom up the bed.

Hand blocks may be useful for this technique.

FIGURE 4.17

Supervised hip hitch movement up the bed (Technique 10)

1. Ask client to sit up in bed	2. Client puts hands in closed fists behind hips
	
3. Client bends knees and digs heels into the bed to push up the bed	4. Client lifts and moves their bottom up the bed
	

Technique 11 Supervised sitting to the edge of the bed

This technique is only suitable for clients with adequate upper limb strength and trunk stability.

Before starting, lower the bed to the appropriate height for the client if possible. Ask the client to:

1. Bend at the knees
2. Roll on to their side by turning their head in the direction of the roll, placing their outside arm across their chest and rotating their flexed knees in the direction of the roll
3. Push up into a side-sitting position by placing their outside hand flat on the bed to push and getting their inside arm to push up using their elbow, putting their legs over the side of the bed at the same time
4. At this point the client can put their legs over the side of the bed, and with feet flat on the floor move themselves sideways up the bed or stand up and walk with or without a walking aid.

A slide sheet could help the client to move their feet to the edge of the bed at Step 3.

A bed lever could help the client to push themselves up to sitting at Step 4.

If the client is in an electric bed, raising the head of the bed can assist with sitting up.

FIGURE 4.18

Supervised sitting to the edge of the bed (Technique 11)

1. Client pushes with legs and turns on to their side facing carer	2. Client puts legs over edge of bed
	
3. Client uses hand and elbow to push up while lowering legs to the floor	4. Client in sitting position on edge of bed
	

Using slide sheets for turning or moving up the bed

The next group of techniques involves turning using slide sheets. Prior to describing these techniques, instructions on how to put slide sheets into position and remove them are provided. Slide sheets can be useful for tasks requiring multiple turning or rolling, such as a bed bath for a client. They reduce friction so less force is needed to move the client. Slide sheets are for temporary use and should not be left under a client.

Technique 12 Placing slide sheets

Always place slide sheets under a bed sheet to protect skin integrity (see Box 4.3). Using a spare, flat bed sheet is most helpful. Tuck slide sheets under the client's neck, the hollow in their back and under their knees, pushing down on the mattress.

1. Place slide sheets underneath a bed sheet
2. Keep the edges of the slide sheet to the edge of the bed as a guide, providing enough slide sheet to cover the rest of the mattress in a single or standard hospital bed
3. If the bed is large, consider large slide sheets or using more of them
4. Roll client on to their side, pull sheet out other side and straighten.

BOX 4.3

Protect client with a bed sheet over slidesheets

A patient from another hospital came to us with friction burns down one side of his torso. When asked what had caused the burns he told us it was where staff had been inserting slide sheets under his bare skin. Although he tried to make sure his pyjamas were protecting him, it was much more comfortable when slide sheets were used underneath a bed sheet.

Source: Nurse manager

FIGURE 4.19

Placing slide sheets (Technique 12)

1. Place slide sheets underneath a bed sheet

2. Keep edge of slide sheet to edge of bed

3. Push slide sheet through under client, pushing down on the mattress

4. Roll client on to side and pull through slide sheets

Technique 13 Removing slide sheets

1. Tuck in both sheets from one side, preferably the least exposed side so less is left to pull out, then from the other side, remove bottom sheet first.
2. Use lunge position and aim diagonally towards the small of the back from one end then the other. Pull out from hollow of back.
3. Tuck the second sheet under itself so it can slide on itself.
4. Only pull the slide sheets to the point of resistance. If there is some resistance, slide the sheets on to themselves so they continue to slide – do not tug or you will risk taking the client's weight or moving them out of position.

FIGURE 4.20

Removing slide sheets (Technique 13)

1. Tuck in both sheets on one side	2. From other side, use lunge position to pull out
	
3. Pull slide sheets diagonally so client is not moved	4. Remove sheets and place ready for next use
	

Technique 14 Assisted movement up the bed using slide sheets with one carer

This technique can be done with one carer only if appropriate for the client and following a risk assessment.

1. Place an extra pillow against the bedhead to avoid the client banging their head if too forceful
2. Apply slide sheets; for this technique apply from the buttocks up as the client's thighs will not be on the mattress. This allows more of the pillow to be on the slide sheets to assist in the movement
3. Client to bend knees and place feet flat on mattress. Ensure their feet are not on slide sheets or loose bed linen
4. Hold client's ankles firmly to anchor feet to mattress. The reason the feet are not held is because they need to be able to dorsiflex (flex feet at ankle joint) with the movement or it will cause pain and hyperextension
5. Tell client to push using their feet, sliding themselves up the bed, ensuring they do not lift their hips off the bed
6. Remove slide sheets.

A pillow over the client's ankles can be used if they are frail or have delicate skin.

FIGURE 4.21

Assisted movement up the bed (Technique 14)

1. Place an extra pillow against bedhead	2. Apply slide sheets
	
3. Hold ankles firmly to support client	4. Client pushes up bed using their feet
	

Technique 15 Turning client on to their side using slide sheets and two carers

(This technique can be performed with one carer following a risk assessment and only if it is appropriate for the client. Three carers may be needed for a bariatric client.)

1. Decide which way the client will face before getting to the bedside
2. Apply the slide sheets
3. Laterally slide the client towards the edge of the bed they will be facing away from, keeping your knuckles on the mattress during the procedure – this is to ensure that the carer is aware of the edge of the bed and reduces the risk of pulling the client off the bed
4. Once the client is near the edge, have the second carer tuck the slide sheets under the client on the opposite side
5. The second carer then rolls the client towards them, leaving the first carer to remove the slide sheets from the bed
6. Ensure the client is comfortable, apply pillows to support the client if necessary, and check that their arms are free.

FIGURE 4.22

Turning client on to their side using slide sheets and two carers (Technique 15)

1. Apply slide sheets (see Technique 12)	2. Using slide sheets, slide client to side of bed they will be facing away from
	
3. Second carer tucks in slide sheets	4. Second carer rolls client using lunge position
	
5. Slide sheets removed	6. Client lying on side is stabilised with pillows
	

Technique 16a Moving client up the bed with two carers using slide sheets

1. Place an extra pillow at the head of the bed
2. Move the bed away from wall, or furniture away from bed, if necessary, before moving the client
3. Adjust the height of bed to shortest person, one carer either side
4. Apply slide sheets, making sure the pillow is also on the slide sheets
5. Choose lead carer. Stand where you want the client's head to end up
6. Step forward with outside leg and place both hands at level of client's hip, keeping both arms straight and hands on the bed
7. Hold bed sheet and top slide sheet tightly and as near hip as possible
8. Practise first to ensure you are in time, say 'back on ready' and 'ready, steady, slide', and rock back on each word
9. Only go as far as the shortest person can comfortably manage. The procedure may take more than one movement. If so, reposition and repeat; keeping your arms straight will avoid twisting or rotating
10. Remove slide sheets, put bed back against wall and return furniture.

Note: Technique 16 (a and b) is one of several techniques that can be used to move a client up the bed using slide sheets.

Caution: Avoid tilting the bed to use gravity. This is dangerous in combination with slide sheets, has less control, and can be frightening for the client. Adding an extra slide sheet folded under the legs will minimise the dragging. If the client cannot lie flat for this procedure (e.g. if they have breathing problems), support with multiple pillows and apply slide sheets under pillows.

FIGURE 4.23

Moving client up the bed with two carers using slide sheets (Technique 16a)

1. Apply slide sheets	2. Place an extra pillow at the head of the bed
	
3. Lunge position ready to slide client	4. Client pushes up bed using their feet 4 Slide client up bed
	

FIGURE 4.24

Moving client up the bed with three carers using slide sheets – bariatric client (Technique 16b)

1. Apply slide sheets and pillow at top of bed	2. Flex client's leg
	
3. Lunge position ready to roll client	4. Roll completed, pull slide sheets through
	
5. Apply third slide sheet halved under lower limbs	6. Carers in lunge position to slide client up bed
	

4.5 Lateral transfers

The techniques in this section cover transfers from one surface to another surface at a similar height. Prior to using any technique, there should be a risk assessment that includes the client's current mobility and any other factors that affect the safety of the planned movement of the client.

Sitting-to-sitting transfers using transfer boards have not been included among the techniques for lateral transfers. A sitting-to-sitting transfer using a transfer board is an advanced technique that requires both an assessment of the client for adequate upper body strength and specific training in how to use the technique.

Technique 17 Supervised sitting-to-sitting transfer

If the client is stronger on one side (for instance if a stroke has affected one side), use the stronger side to lead the transfer. Wheelchairs and chairs with movable armrests should have the appropriate armrest moved out of the client's way to assist the manoeuvre.

Make sure the surface to which the client is moving is as close as possible and at right angles to the client's position. Then ask the client to:

1. Position themselves with their arms on the armrests and their feet flat on the floor, shoulder width apart
2. Lean forward in the chair and slide their bottom towards the front of the seat
3. Lean forward so that their upper body is over their feet
4. Put their leading foot in the direction they are going
5. Reach over and take the far arm of the other chair with their leading arm
6. Push up through their arms and legs, then move across or step around to sit in the other chair. Alternatively, they may find it easier to stand fully and transfer to a walker.

FIGURE 4.25

Supervised sitting to sitting transfer (Technique 17)

1. Client leans forward and slides their bottom to front of chair	2. Client puts their leading foot in the direction they're going
	
3. Client reaches over and takes far arm of the other chair	4. Client pushes up through their arms and legs
	
5. Client transfers to other chair	6. Client lowers self into chair
	

Technique 18 Sitting to sitting transfer using walking frame

In this technique the carer assists the client to move from one seated position to another with the client using a walking frame.

Wheelchairs and chairs with movable armrests should have the appropriate armrest moved out of the client's way to assist the manoeuvre. Make sure the seat to which the client is moving is as close as possible and at right angles to the client's starting position. The walking frame should be positioned directly in front of the client.

1. Ask the client to position themselves with their arms on the armrests and their feet flat on the floor, shoulder width apart
2. Ask the client to lean forward in the chair and slide their bottom towards the front of the seat
3. Carer helps them lean forward so their upper body is over their feet
4. Stand on 'ready, steady, stand'
5. Carer assists client to stand and client transfers hands to walking frame
6. Carer guides client while they use the walking frame to move into position with their bottom facing the chair to which they are moving
7. Client sits down.

FIGURE 4.26

Sitting to sitting transfer using walking frame (Technique 18)

1. With client sitting forward in chair, carer rocks forward with 'ready, steady, stand'

2. Client stands and transfers hands to walking frame

3. Client holds on to walking frame, guided by carer

4. Client moves around to other chair while holding on to walking frame

5. Client positioned in front of chair

6. Client sits down, first placing hands on armrests

Technique 19 Sitting to sitting transfer with one carer

This technique should only be used if the client can step from one seat to another. The carer must stay upright the whole time.

1. Position the seat or furniture so there is adequate room for both the carer and the client and the carer can be at the client's side the whole time
2. Make sure the item to which the client is moving is as close as possible
3. If using a wheelchair, the brakes should be on and the footplates removed
4. Help the client to stand up (see Technique 2 or 3)
5. Pause to allow the client to get their balance
6. Client sits down (see Technique 2 or 3).

If you are transferring a client to a toilet or commode, you need to consider how the client's clothes will be adjusted for toileting before you start the transfer. For instance, you might ask the client to support themselves using toilet handrails or commode armrests, so that your hands are free to adjust their clothing. If the client cannot support themselves with rails or armrests, you will need to use another technique.

FIGURE 4.27

Sitting to sitting transfer with one carer (Technique 19)

1. Assist client to stand (see Technique 3a)	2. Instruct client to walk or step to other chair
	
3. Instruct client to reach for the armrests	4. Client sits down
	

Technique 20 Lateral transfer using a transfer board and slide sheets

You can use a full-length transfer board (e.g. a PAT slide) with slide sheets for this technique. You will need at least four carers: two to use the slide sheets, one to manage the head and one to manage the feet. Other carers may be needed to manage any attached medical equipment or if the client is very large.

Check that the transfer surfaces are at a similar height. Using a transfer board can be unsafe if the height difference is too great. The manoeuvre should be done in two stages if it is bed to bed because of the longer distance than bed to trolley or stretcher. First, move to halfway, reposition carers then move the client straight across. Use one manoeuvre if the distance is short enough not to require the carers to climb onto the bed.

1. One carer rolls client on to side facing away from direction of transfer
2. Two carers position transfer board with two slide sheets underneath bed sheet
3. Client rolled back on to transfer board
4. Move second bed or stretcher up against first bed, ensuring the head will end up in the right position by lining up beds accordingly
5. With bed brakes on, have height of bed transferring on to slightly lower than original bed to use gravity to help
6. Two additional carers assist with head and feet
7. Kneel up on bed (if necessary) and carers cross their inside arms, sit back onto heels to slide client across part of the way
8. Slide client holding bed sheet and top slide sheet
9. Have a leader and stop halfway if necessary
10. The two main carers reposition themselves off the bed, lunge then slide the rest of the way.

FIGURE 4.28

Lateral transfer using a transfer board and slide sheets (Technique 20)

1. One carer rolls client on to side facing away from direction of transfer

2. Two carers position two slide sheets on transfer board underneath a bed sheet

3. Move second bed against first bed and bridge with transfer board

4. Two carers kneel up on bed and cross their inside arms, slide client halfway

5. Stop halfway and carers reposition into lunge stance

6. Slide client across to second bed

7. When move completed, remove transfer board and slide sheets

Technique 21 Transfer from a vehicle to a walking frame

Getting out of a car using a walker

For this transfer, have a walking frame ready. The procedure requires one carer and one slide sheet.

1. Slide the car seat back as far as it will go to allow maximum space to lift the legs out
2. Check the seat back is fully upright
3. Ensure the client's walker is close by but out of the carer's way
4. Ask the client to lift their legs out of the car. It is generally easier to move in small movements and move one leg at a time. If they have difficulty doing this, you can place a scrunched-up slide sheet under the buttocks to reduce friction
5. Get them to move forward until their feet are flat on the ground
6. The client will need to hold on to something as they stand. They can push using the car seat or backrest. Alternatively, wind the window down and the client can use the door for support while the carer uses their body weight to prop the door for safety*
7. Once standing, the client transfers their hands to the walker (with brakes applied)
8. If they are unable to stand and step around, another technique or aid should be considered. This will require the client to be referred to a therapist and have a technique tailored to them

* Advice on specially designed handles to help clients in and out of cars can be given by a health professional and they can be purchased if necessary.

Getting into a car using a walker

1. Slide the car seat as far back as it will go – if it is an electric seat, you can make it higher, or place a cushion on the seat if the seat is low
2. Ask the client to walk backwards until they can feel the car seat with the backs of their legs. Get them to put their hands on a suitable place on the car; if it is the door, prop the door with your body weight to keep it still and get them to sit as far back onto the car seat as they can
3. Move the walker out of the way
4. Get the client to move back into the seat as far as they can – you can use a scrunched-up slide sheet to reduce friction if needed
5. Ask them to lift their legs into the car – they may find it easier to get one in at a time. They can use a walking stick to push against the floor of the car to make it easier

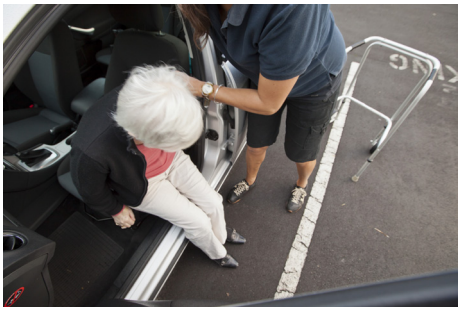
FIGURE 4.29

Transfer from a vehicle to a walking frame (Technique 21)

1. Place a scrunched-up slide sheet under client's buttocks to reduce friction

2. Ask the client to lift their legs out of the car

3. Client moves forward until their feet are flat on the ground



4. Carer positions walking frame in front of client

5. Client leans forward and stands up, pushing up from seat

6. Client moves hands to walking frame

Technique 22 Transfer from a vehicle to a wheelchair

Getting out of a car into a wheelchair

For this transfer, have a wheelchair ready. The procedure requires one carer and one slide sheet.

1. Slide the car seat back as far as it will go to allow maximum space to lift the legs out
2. Check that the seat back is fully upright
3. Ensure the client's wheelchair is close by but out of the carer's way
4. Ask the client to lift their legs out of the car. It is generally easier to move in small movements and move one leg at a time. If they have difficulty doing this, you can place a scrunched-up slide sheet under the buttocks to reduce friction
5. Get them to move forward until their feet are flat on the ground
6. Move wheelchair into position parallel to side of the vehicle (with brakes applied)
7. Client reaches across and places one hand on outer arm of wheelchair. They can push up with their hands on the car seat and the wheelchair arm
8. Client steps around to sit in the wheelchair.

Getting into a car from a wheelchair

1. Slide the car seat as far back as it will go – if it is an electric seat you can make it higher, or place a cushion on the seat if the seat is low
2. Remove wheelchair footplates before getting too close to the car – apply the brakes when in position, which should be parallel to the car and close in
3. Ask the client to stand and step around so in a position to be able to sit in the car – you can use the car seat or door as support while the client sits as described above
4. Alternatively, the client can reach across to the car seat for support, then stand and pivot ready to sit in the car. The inside leg should be forward and pointing towards the car – the client does not need to stand up fully for this transfer
5. If the client cannot stand and step around, another technique with assistance from one carer and specialised equipment (e.g. a slide board/banana board) can be used. The client would be assessed and trained in this manoeuvre by a therapist.

If a client is known to have difficulty getting in or out of vehicles, they should be referred to an occupational therapist or physiotherapist for assessment as soon as possible.

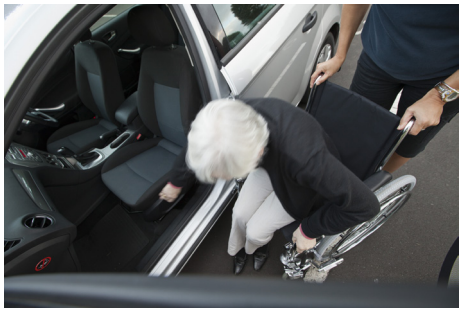
If the client is wheelchair bound and not very mobile, order a specialised taxi van. These vans use ramps to lift clients in wheelchairs into the vans, then they secure the

wheelchairs to the floor of the vans. For emergency retrieval, see the later section on emergencies (Section 4.7).

Some mobile hoists can be used for extracting clients from vehicles. This function would be useful for facilities with emergency departments.

FIGURE 4.29

Transfer from a vehicle to a wheelchair (Technique 22)

1. Place a scrunched-up slide sheet under client's buttocks to reduce friction	2. Ask the client to lift their legs out of the car
	
3. Client moves forward until their feet are flat on the ground	4. Carer positions wheelchair in front of client, parallel to side of vehicle
	
5. Client leans forward, puts hand on wheelchair arm, and stands up	6. Client moves across to sit in wheelchair
	

4.6 Using hoists

The techniques in this section cover client movements where hoists are used. The information about fitting slings covered in the first four techniques in this section is essential for all client movements where hoists are used.

As noted for the previous techniques, there should be a risk assessment prior to moving and handling that includes the client's current mobility and any other factors that affect the safety of the planned movement of the client. The risk assessment must also take into account how many carers are required to complete the task. This is particularly important in the community, where carers may be working in isolation.

If the risk assessment or client profile indicates that more than one person is required to hoist, that is what must happen. A robust risk assessment is essential and carers must use moving and handling techniques consistent with the risk assessment.

Points to consider with slings

- All slings must be checked prior to each use for rips or tears
- Check the safe working load, usually displayed as SWL, which must be written on the sling (SWL indicates the load to which the hoist will work)
- Check due date displayed for next maintenance check. Do not use if out of date
- Size – measure the length and width or girth of client. For length, move from the base of the spine upwards to check that the sling is long enough. For width/girth, check that the sling will reach past the client's arms to enclose them safely
- Once the sling size is known, write this in the relevant client notes and care plan
- For most sling types, the lower sling loops should be positioned so they cross over between the client's legs, which also helps to maintain the client's dignity
- Get the client to put their hands across their chest to reduce the risk of injury
- A disposable sling can be used many times with the same client before it is disposed of
- A shower sling can get wet
- If moving a bilateral above-knee amputee in a sling, use a specific amputee sling.

FIGURE 4.31

Standard slings

FIGURE 4.32

Fitting of sling so lower loops cross between client's legs

FIGURE 4.33

Client in sling with loops attached to hoist sling bar

Technique 23 Applying a sling using two rolls

1. Place a pillow under the client's head
2. Select the correct sling; for example, the client's head may need supporting
3. Roll the client on to their side, roll the same half of the sling and place along spine lengthwise behind them, position from base of the spine upwards
4. Roll the client back the other way, so now they are on one half of the sling
5. Unroll the rest of the sling, then roll the client back on to their back
6. Check that the client is correctly positioned on the sling, ready for hoisting
7. You may need to adjust the head support for comfort.

FIGURE 4.34

Applying a sling using two rolls (Technique 23)

1. Roll client on to their side and position sling

2. With top half of sling rolled into position, roll client on to their back

3. Prepare client to roll on to other side

4. Roll on to side so client is on top of sling

5. Second carer pulls through rolled half of sling

6. Sling straightened ready to roll client on to back

7. Client rolled on to back

8. Sling loops attached to hoist sling bar

Technique 24 Applying a sling using one roll

1. Roll the client on to their side
2. Fold sling in half with labels and handles on the outside
3. Position sling from the base of the spine upwards
4. If the sling has a neck seam, align seam with base of client's neck
5. There should be a gap between the sling and the client's body so that when they roll back their spine is in the middle of the sling
6. Take upper leg strap and feed the loop under the client's neck
7. Fold the upper shoulder loop/clip into the sling and roll entire upper portion of sling into space behind client's back. Roll client on to back
8. Take the loop or clip from under client's neck and pull smoothly towards you and down in the direction of the legs using a lunge; the sling should unroll underneath the client
9. Both carers pull the sling towards themselves to remove the creases
10. You may need to adjust the head support for comfort.

FIGURE 4.35

Applying a sling using one roll (Technique 24)

1. Roll client on to their side and fold sling

2. Position sling from base of spine upwards, feed upper leg strap under client's neck

3. Fold the upper shoulder loop/clip into sling and roll upper portion of sling into space behind client's back

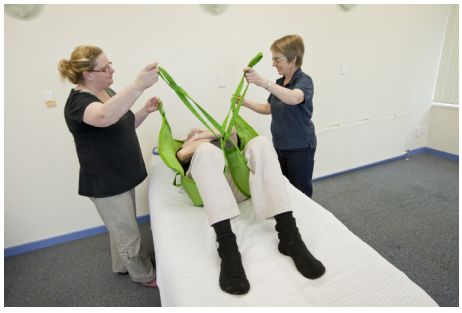
4. Flatten roll and turn client on to their back

5. Locate loop from under client's neck

6. Take the loop and pull smoothly towards you using a lunge

7. Both carers pull the sling towards themselves to remove the creases

8. Complete sling positioning, crossing leg loops between legs



Technique 25 Applying a sling to a client in a chair

1. Instruct the client to lean forward in the chair
2. Slide the sling down the back of the chair with the handles facing the back of the chair
3. If client cannot lean forward or is in a moulded chair, slide one slide sheet down their back and slide the sling in behind that to reduce friction and any damage to the skin
4. Ensure the bottom of the sling reaches the base of the spine. Remove slide sheets once the sling is in place. Do not have the client sit on the sling as they will drop lower during hoisting, which can be frightening and unsafe. Some slings have a pocket on the lower back that allows the carer to place a flat hand in it and position the sling appropriately
5. Put the leg straps under each leg one at a time. If the client is unable to lift their leg, either use a slide sheet to help slide the strap under or kneel in front of the client and place their foot on your thigh – this should ease the strap application
6. Bring hoist to the client, adjusting hoist legs to widen around the chair, and attach the sling to the sling bar preferably at sternum (chest) level
7. Ensure the sling bar is held and watched continuously so that it does not swing into the client's face
8. Hoist the client just high enough to be off the chair and encourage them to move slightly – this will alert the carer to any discomfort and enhance the client's confidence in the hoist. Check sling loops again at this point to ensure they are all on safely
9. Complete the hoisting process.

FIGURE 4.36

Applying a sling to a client in a chair (Technique 25)

1. Ask the client to lean forward in the chair

2. Place the sling behind the client

3. Ensure the bottom of the sling reaches the base of the spine

4. Check that the sling is positioned correctly

5. Put the leg straps under each leg one at a time

6. Bring hoist to the client

Technique 26 Applying a sling to a client on the floor

1. Roll client on to their side and position sling
2. Fold the upper loop into sling and roll upper portion of sling behind client's back
3. Push rolled half of sling under client
4. Roll client flat on their back and pull through rolled half of sling
5. Straighten each side of sling and locate loops
6. Ask client to bend their knees and pull loops through legs and across front.

FIGURE 4.37

Applying a sling to a client on the floor (Technique 26)

1. Roll client on to their side and position sling	2. Fold the upper loop into sling and roll upper portion of sling behind client's back
	
3. Push rolled half of sling under client	4. Roll client flat on their back and pull through rolled half of sling
	
5. Straighten each side of sling and locate loops	6. Ask client to bend their knees and pull loops through legs and across front
	

Using a mobile hoist

Mobile hoists are described in more detail in the 'Equipment for moving and handling people' section. Always check the manufacturer's or supplier's instructions for the specific hoist being used.

BOX 4.4

Parts of a mobile hoist

- **Boom** (goes up and down)
- **Sling bar**, spreader bar or yoke.
- **Legs** (move in and out)
- **Mast** – upright part of hoist
- **Handles** – for manoeuvring the hoist
- **Brakes** – only to be used for storage. Do not use brakes when hoist is in use as the hoist needs to find its own centre of gravity, otherwise it may tip over
- **Emergency stop button** (if hoist is not working, check it is not pushed in)
- **Emergency lower buttons** (you may need extra pressure to come down on older hoists)
- **Weight limit** (SWL)
- **Maintenance alert** – do not use if out of date.

Hoist brakes: Do not use the brakes on a mobile hoist at any point in a moving procedure, as the hoist needs to be able to move as a client is being hoisted, otherwise it may tip over.

Technique 27 Repositioning client in a chair using a hoist

You can use a mobile hoist or a mobile standing hoist to reposition the client in their chair. This technique usually needs two carers, one to operate the hoist and the other to make sure the client is lowered into a comfortable position. In a community setting, there may be some circumstances where one carer can manage. Only use a hoist if you have had training in how to use it.

Apply sling. Use slide sheets to assist with sling application if the client is unable to bend forward or is in a moulded chair or wheelchair. Make sure the client is sitting upright in the sling to eliminate or reduce the need for further repositioning.

1. Position the hoist and adjust the hoist legs to fit around furniture
2. Lower the sling bar over the client's sternum (chest)
3. Fit the shoulder straps on the shortest position and the leg straps on the longest position –these may vary depending on the sling design, the client's size and how upright they can sit
4. Hoist the client so they can be moved into the chair
5. Lower the hoist and at the same time guide the client into a comfortable position by:
    a. Standing behind the chair and using the handles on the sling (if available), or
    b. If the hoist has a tilting spreader bar, adjusting it to tilt the client into an upright position before you lower them into the chair
    c. Gently pushing back on the client's legs if appropriate
6. Detach the sling from the hoist and remove the sling.

FIGURE 4.38

Repositioning client in a chair using a hoist (Technique 27)

1. Apply sling to client and position the hoist

2. Check that hoist legs fit around chair

3. Lower the sling bar while holding bar to protect client's head

4. Attach sling loops to sling bar

5. Hoist client above chair

6. Ask client to bend their knees and pull loops through legs and across front

Technique 28 Sitting up in bed using a hoist

To use a hoist to sit a client, select the appropriate sling for the client and the task (e.g. mesh sling for bathing).

1. Apply the sling as described in Technique 22 or 23
2. Position the hoist over the bed and lower it so the sling bar is just above the client's chest
3. Attach the shoulder straps on the shortest position and the leg straps on the longest position (this may vary depending on the client's size and how upright they can sit)
4. Hoist the client to sit them up
5. Raise the back of the bed and position the client on the bed
6. Remove the sling.

FIGURE 4.39

Sitting up in bed using a hoist (Technique 28)

1. Apply sling and position hoist bar over client's chest	2. Attach sling to hoist bar
	
3. Raise the client so they are off the mattress	4. Raise the back of the bed
	
5. Position client on bed	6. Lower client and remove sling from hoist bar and client
	

Technique 29 Hoisting a client from bed to chair

1. Lie client as flat as can be tolerated
2. Apply sling, and record the size and type selected in the client's care plan
3. Ensure the path to chair is clear
4. Lower the sling bar to client's chest area; the sling bar must be managed at all times during the procedure to minimise the risk of the bar swinging into the client
5. Attach sling to the sling bar and slowly hoist the client just above the surface on which they are lying
6. Encourage the client to move around in the sling and get comfortable; this will facilitate confidence and comfort – check sling loops again at this point to ensure they are all on safely
7. Move the hoist over to the chair
8. When lowering, place one hand underneath the sling bar to protect the client from it. If the client is unable to reposition themselves in the chair, a second person must assist in positioning the chair while the client is being lowered
9. Remove the sling from the sling bar and take the hoist away before removing the sling
10. To remove the sling, reverse the steps in Technique 25. The sling must be removed to protect the client's skin integrity.

FIGURE 4.40

Hoisting a client from bed to chair (Technique 29)

1. Lower sling bar above client's chest	2. Attach sling to bar. Using hoist, slowly raise the client above the surface on which they are lying
	
3. Hoist client off mattress	4. Move hoist so client is over chair
	
5. Keep a hand on the sling bar whilst lowering the client	6. Remove the sling from sling bar and move before removing the sling from the client
	

Technique 30 Hoisting from the floor

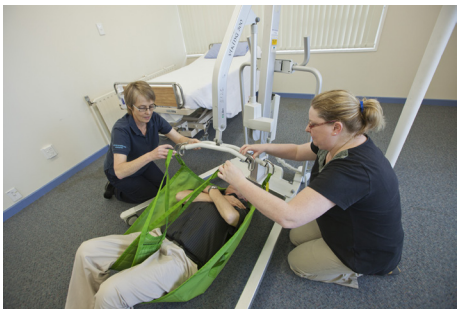
This technique uses a hoist (mobile or ceiling hoist) and a sling. If a mobile (floor) hoist is used, it must be suitable for lifting clients from the floor.

1. Move the hoist into position – it is best to bring the hoist in from the client's head end. If this is not possible, come from the feet end. The client's feet and legs will have to be lifted over the hoist legs so the sling bar can be positioned above the client's chest
2. Lower the boom to its lowest position so it is easy to attach the sling
3. Attach the sling
4. The client's bed should be brought to the area
5. Hoist the client from the floor and position them on the bed
6. Remove the sling by tucking as much as possible of the sling underneath the client on one side and either sliding it out from the other side or rolling client away from it.

A stretcher attachment may be needed (if available), depending on the client's condition or injuries, or alternatively an air-assisted jack can be used if available.

FIGURE 4.41

Hoisting a client from the floor (Technique 30)

1. Apply the sling to the client	2. Move the hoist into position
	
3. Lower the sling bar and attach the sling	4. Hoist the client from the floor
	
5. Move hoist to transfer client over bed	6. Lower client to bed
	

4.7 Emergency situations

Special considerations may apply for moving people in emergency situations. In this final part some specific points regarding emergency situations are outlined. Readers seeking more detailed information are encouraged to consult *The Guide to the Handling of People* (Chapter 13) and the report on *Guidance for Safer Handling During Resuscitation in Healthcare Settings*.[2]

FIGURE 4.42

Assessing an emergency situaton

Organisations should develop their own protocols for emergency situations. These protocols should be developed in conjunction with resuscitation specialists and other emergency staff to clarify when lifting clients is necessary. This might include a person having a cardiac arrest in a vehicle and other life-and-death situations. The protocols should define what situations are most likely to take place that require an emergency response, and situations where it is permissible for staff to lift clients (such as when there is smoke in a room or an earthquake). A fallen person is not necessarily an emergency, but the outcome of the fall could be. Use records of previous incidents, local staff and relevant experts to help identify the emergency situations that could happen. Even where there is no history of emergency situations happening, there is still a need to risk assess and plan for such events.

Planning for an emergency situation and developing a protocol that is known by staff will increase the likelihood of it being well managed, and ease panic when these situations occur (see Box 4.5). Moving and handling in an emergency situation must be risk assessed like any other moving and handling task. It is also important to include potential emergency situations in your local training.

Part of the preparation for emergency situations is the retrieval of clients. A recent report clearly documented the issues around the retrieval of clients who have fallen and particularly notes injuries caused by inappropriate moving and handling.[3] Lack of access to flat lifters and hoists was one of the problems noted for clients, with spinal injuries occurring as a direct result of inappropriate retrievals.

For example, if during a cardiac arrest a client falls to the floor, the arriving 'resuscitation team' may decide to lift the client onto the nearest bed. There is no clinical reason for this and the floor is in fact the better surface on which to commence CPR. However, a very difficult or unusual intubation could result in the need to lift the client to a higher surface to allow successful intubation or the client may not survive. The need to lift clients should be rare. If lifting is needed, use appropriate lifting equipment wherever possible.

2. See Sturman (2011) and Resuscitation Council (2009) in the references list.
3. See National Patient Safety Agency, 2011.

BOX 4.5

Planning for emergency situations

At Waitemata District Health Board all crash trolleys have slide sheets on them and are part of the daily checklist to make sure they stay on them. This means in an emergency situation staff don't have to look for equipment to move patients out of tight spots in order to resuscitate them and this has been viewed as a positive addition by the staff regularly attending arrests.

There is an emergency retrieval board in the hydrotherapy pool area and a training DVD has been made by us to educate staff on how to deal with an arrest in that area. Other areas we are looking at are birthing pools in maternity and getting people out of vehicles.

Source: Moving and handling coordinator, Waitemata District Health Board

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(describes high-risk techniques that should not be used).

SECTION 5

Training for moving and handling people

Contents

5.1 Overview of training

This section provides guidelines for training based on New Zealand and international best practice. It describes why training is essential for all carers and other staff involved in moving and handling people, describes the core components of an effective training programme and provides information on who provides training in New Zealand. The following section (Section 6) covers how to organise training programmes, including steps for setting up, operating, maintaining and evaluating training programmes.

Participation in effective training is a crucial part of a moving and handling programme, for minimising risks. Systematic reviews of training interventions have concluded that training by itself does not reduce back pain and injuries among healthcare staff.[1] However, training that is part of a multi-component moving and handling programme within an organisation can reduce injuries and absenteeism among staff.[2]

Training should be integrated with effective health and safety systems, moving and handling equipment, and workspaces that are designed to facilitate moving and handling clients.

Suitable equipment should be in place before moving and handling training takes place, so that what is learnt during training can be applied immediately. The practice of techniques following training serves to reinforce the training while the learning is still fresh.

Why is training important?

Training is one of the six core components required for an effective moving and handling programme (see Figure 5.1). The six components are interrelated and the absence of one programme component is likely to weaken the overall impact of training.

Training is a vital part of implementing moving and handling because it:

- Provides information about policies and protocols for moving and handling
- Teaches staff how to identify and assess client moving and handling risks

BOX 5.1

Sample policy: Training requirements

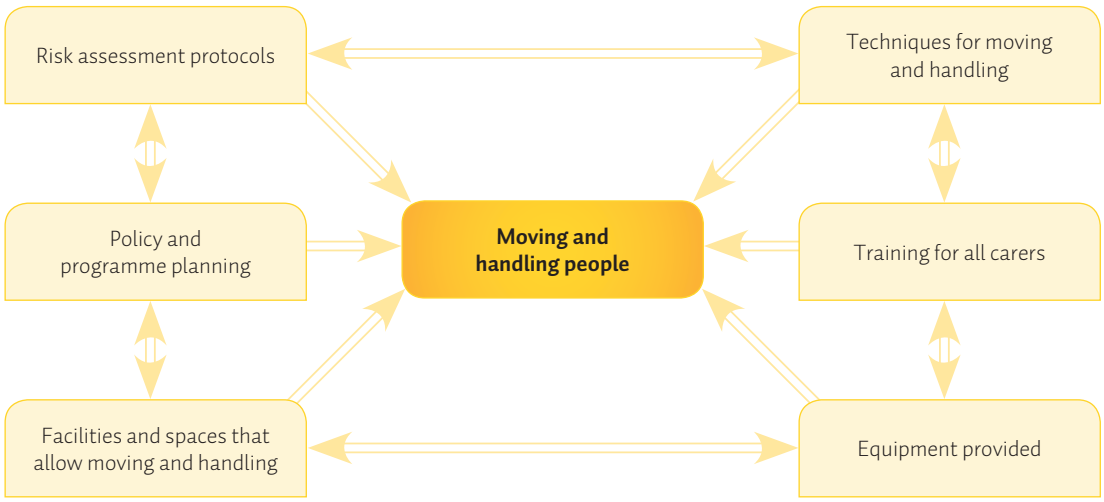
Training should be provided to all staff affected by the safe patient lifting program; this should include... nursing staff, physical and occupational therapists... All nursing staff and caregivers who lift and transfer patients should be trained and made competent in the use of patient lifting equipment and the procedures to follow while transferring patients.

Source: Nelson et al, 2007, p. 30

1. Clemes, et al 2010; Dawson et al, 2007; Martimo et al, 2008; Tullar et al, 2010.
2. Clemes, et al 2010; Higneyy, 2003; Tullar et al, 2010.

- Provides staff with the skills they need to manage the risks
- Supports professional growth by developing staff knowledge and skills
- Encourages staff to take personal responsibility for safety in the workplace
- Helps employers and employees to meet their legal responsibilities
- Enhances client safety and preserves their dignity.

FIGURE 5.1 THE SIX CORE COMPONENTS OF A MOVING AND HANDLING PROGRAMME



For training to be effective, it should take place within a system that has appropriate health and safety policies and senior management commitment and support. This includes an organisation that fosters a culture of safety among clients and staff, has budget allocations for the purchase of equipment and training of staff, and encourages early reporting of incidents and ways to prevent or reduce the risk of future incidents.

Training should be comprehensive and cover organisational policies, risk assessment and documentation, handling techniques and use of equipment. Interactive training that gives staff hands-on experience in the techniques and use of equipment should be an industry standard. Where feasible, training should be tailored to participants' knowledge and awareness of risks, and their specific work environments.

BOX 5.2

Training for medical staff

Nurses have been known to lift patients on doctors' instructions even though they knew it was not safe for them and the patients. This kind of unsafe practice needs to stop even if done in the best interests of the patient. Medical staff should be trained in patient handling for practical reasons as they often take a lead role in the wards and may have to move patients.

Even those not in the front line of duty, such as cultural and disability advisers who are trained in patient handling, would be in a better position to explain and reassure patients and their families of the benefits of safe patient handling.

Source: Nurse

The training needs of staff working in aged care and the community differ from those of staff in acute hospitals. Aged-care and community-based staff require training programmes that address their specific moving and handling requirements. Home care and community organisations need to consider organising their own training programmes using the assistance of external providers to provide the expertise and support required.

5.2 Who needs to receive training?

Training should be required for all staff directly involved in moving and handling clients, as well as their managers and supervisors. Staff and carers directly involved in moving people include, but are not limited to, nurses, physiotherapists, occupational therapists, medical staff, ambulance staff, health and nurse aides and people working with the disabled and aged in the community.

All carers should complete basic moving and handling training before handling clients. Moving and handling managers and staff responsible for the supervision of moving and handling (e.g. client-handling advisers, instructors and trainers) need further training in moving and handling people (see Section 6).

Moving and handling advisers and instructors need to keep up with changes and developments in client handling techniques and equipment, so they can provide up-to-date advice and guidance. Carers need to attend annual update training courses to ensure best practice is maintained.

5.3 When is training needed?

Training should be provided in the following instances:

- When a new employee starts work if their work requires them to move and handle people
- Update courses for existing staff who have already attended orientation training in moving and handling
- When new equipment or work practices are introduced
- As remedial action following an incident or near miss
- For staff working in areas that require techniques or equipment that are more specialised (e.g. care of clients with spinal injuries).

Training should be long enough to enable carers to move and handle clients in the work environment. Staff should attend a one-day training workshop, preferably during their orientation to the job. This allows the learning of good practice before they commence work and reduces the likelihood of incidents to carers and clients. A one-day training workshop enables the basics to be covered. Initial training should be followed by a second one-day workshop (follow-up training) within six months, then a minimum of an annual update. Priority should be given to carers most at risk: those who move and handle people regularly, carers working with bariatric clients, carers who have had previous incidents or injuries, and carers working in the community. Carers in the community often work alone without the help and support of co-workers. They may not have access to moving and handling equipment, and the homes and locations in which they work may not be properly set up for moving and handling. Table 5.1 outlines the key stages when training is needed.

Situations or events can often indicate that specific additional staff training is required. These include: carers involved in moving and handling incidents, injuries or near misses; incorrect use of equipment; and where an audit has identified poor client handling practices within a unit or ward.

TABLE 5.1 RECOMMENDATIONS FOR TIMING OF TRAINING

Type of training	Description
Initial (induction) training (one day)	A one-day workshop, preferably during the orientation period in new jobs for all carers who have not had previous training in moving and handling people Workshop covers an introduction to moving and handling
Follow-up training (one day)	One-day workshop within first six months of employment Workshop covers more advanced moving and handling topics
Annual training (four hours minimum)	Four-hour session providing an update on training and developments in moving and handling
Incident involving incorrect use of equipment or injury	Consider re-attending either orientation or update training

It is recommended that staff receive a minimum of one day of training following their appointment, especially staff who have not had any previous training. However, if they can show evidence of recent training, they may only require update training.

BOX 5.3

Comments about training from survey respondents

There seems to be a very poor understanding of what safe handling training entails. I have found there is an expectation that a one-hour teaching session will be sufficient to 'tick the box' that safe handling has been taught. Technique-specific skill-based learning is much more challenging to teach and evaluate – this must include adequate time for students to develop skills.

All staff entering the organisation who will be working with patients are trained during orientation, this training is 6.5 hours long. Orientation is monthly. There is a compulsory two-yearly refresher which is 3.5 hours long and is available monthly.
(Manual handling coordinator with a team of six trainers)

We have two educators for up to 12 staff on any update. Any staff member who handles patients is expected to attend a two-hour update each year.

Source: Thomas & Thomas, 2010

5.4 Who provides training in New Zealand?

At the time of writing these Guidelines (2011), there were two main sources of training: trainers working in District Health Boards (DHBs) and private training providers. DHBs usually have more resources to develop their own in-house training programmes; some employ moving and handling coordinators who have responsibility for organising training as part of in-house programmes.

Some DHBs and other organisations have structured training programmes. Such programmes typically have a group of core trainers who are led by moving and handling coordinators. They provide training for trainers (where trainers are drawn from different occupational groups or departments, such as nurses, radiologists and physiotherapists) and have ongoing trainer recruitment. Training programmes, training sessions and workshops are held on a regular basis (e.g. weekly or fortnightly). Some organisations have dedicated training facilities that are similar to ward environments. Other organisations appoint individuals, or small groups of part-time trainers, who provide training on a more ad hoc basis. In some instances, DHBs provide training for carers in community organisations who move clients as part of their work. Private training is also available.

Although there is some moving and handling training in New Zealand, it needs further development and recognition as a profession. There is a need for assessment and monitoring of current training programmes and training providers. The development of a national standard for moving and handling training would be desirable, perhaps similar to the *All Wales Manual Handling Training Passport scheme*.[3] Training for client handling needs to be a recognised profession with its own career path.

Organisations with limited resources may not be able to employ a full-time moving and handling coordinator or trainer. An option is for several organisations to combine resources to contract external trainers when needed, or a specific staff member (such as a physiotherapist or a health and safety coordinator) is trained and resourced to take responsibility for moving and handling training and coordination.

3. Welsh Assembly Government, 2009.

5.5 Core competencies in moving and handling training

The purpose of training workshops is to provide carers with practical skills and knowledge to reduce the risks involved in moving and handling in the workplace. The core components of training should cover:

- **Theory** – covering definitions of moving and handling, New Zealand legislation, hazard identification, risk assessment, and relevant policies of the organisation
- **Practical skills** – including completing risk assessments, techniques used for sitting and standing, bed mobility, lateral transfers, and hoists and other equipment for moving and handling people.

Effective training programmes encourage problem-solving skills that enable carers to consider all relevant aspects of tasks to determine the most appropriate techniques to use. Training should instruct staff how to assess the risks associated with handling tasks and make appropriate decisions to reduce risks. Table 5.2 sets out the core knowledge and competencies that would be appropriate to cover in a one-day training workshop. A key principle for workshops is that participants must be given opportunities to practise the techniques that are taught, as well as review client case studies or scenarios in which they have to select appropriate handling techniques. Training based on passive learning, where staff merely attend lectures or watch training videos, is not effective for teaching moving and handling techniques.

TABLE 5.2 SUGGESTED CONTENT FOR A ONE-DAY MOVING AND HANDLING WORKSHOP

Topic	Description
Background and context	Definitions of manual handling and client handling New Zealand legislation and relevant organisation policies and procedures
Risk assessment	Risk assessment should include the risk to the carer, the client and the employer, and the costs of discomfort, pain and injury
Techniques	Overview of moving and handling techniques Sit to stand – including verbal prompts, minimal assistance and transfer belts Lateral transfers such as wheelchair-to-chair transfers Use of slide sheets, repositioning using slide sheets, storage and washing Moving a fallen client Bed mobility, up and down, on and off the bed Using mobile and ceiling hoists, floor to bed and bed to chair, sit to stand hoist Moving bariatric clients
Equipment	Main types of moving and handling equipment, including slide sheets, transfer boards, transfer belts, mobile hoists, sit to stand hoists, ceiling hoists and slings Slings and slide sheets – sizes and types, single- and multiple-use slings, laundering Safe working load (SWL), maintenance certificates, storage and servicing
Demonstration of techniques	Demonstration of selected techniques by trainers Techniques covered should progress from supervising mobile and partially mobile clients to transferring completely dependent clients, and emergencies
Practise of techniques	Participants (trainees) practise selected techniques across all levels of client mobility in both client and carer positions
Problem-solving	Cases (scenarios) involving clients presented to trainees to select appropriate solutions. Work in groups to problem-solve using skills and knowledge covered in earlier part of workshop
Assessment	Participants can self-assess confidence in practice and trainers can assess participants' ability in techniques

It is recommended that there be at least one trainer for every five or six participants (a 1:6 ratio)[4] for training workshops. In most workshops, this will mean at least four trainers for every 18 participants, including an overall coordinator. The coordinator ensures that trainers keep to the time allocated for each of the sessions, maintains a flow from one activity to the next and runs the day. This ratio is the minimum necessary to ensure an adequate practical instruction of trainees during the demonstration of techniques, practice by trainees and feedback from trainers to trainees. Most demonstrations of techniques require two 'carers' plus a 'client' so a minimum of three trainers is required.

The core training components can be developed into training modules, and include more specialised techniques to meet the needs of specific groups of staff. Staff working with bariatric clients need training in bariatric moving and handling, as there are increased risks and specialised equipment is required. An example of a one-day training workshop programme is shown in Appendix 5.1 at the end of this section. Appendix 5.3 describes a more detailed outline for a moving and handling training programme.

Plan for follow-up training workshops to consolidate learning. Opportunities for follow-up practice are important. Trainees need to practise the techniques they have learnt soon after workshops, or they may forget how to do them. Advice and mentoring are also important for consolidation of learning. Advise trainees to seek assistance and guidance from moving and handling coordinators who can give advice and mentor staff in their workplaces.

4. Welsh Assembly Government, 2009, p.9.

5.6 Training session outcomes

At the conclusion of a training session, keep a record of each trainee's attendance and provide a certificate that verifies their participation in training. Trainees should be assessed on the knowledge and skills taught in the session by the trainers. Trainees can also do self-assessments or peer assessments of their skills. Appendix 5.2 shows an example of a self-assessment form.

- A moving and handling certificate or letter of attendance should include:
- Name of trainee and sign-off from a trainer
- Date of training
- Duration of training session.

BOX 5.4

Key points for training workshops

- Provide induction training on moving and handling people for all new staff, before commencement of work during the orientation period or as soon as possible following commencement.
- The recommended format for induction training is a one-day workshop.
- Training sessions should be conducted in a dedicated area for training with toilet, bathroom, electric beds and relevant equipment.
- Training must include theory, demonstration, practice and assessment of specific moving and handling techniques and use of equipment for all trainees.
- Each year, staff should receive at least a four-hour update training session.

Evaluation of training sessions and workshops

Trainers should routinely gather feedback from trainees so that the moving and handling coordinator and the trainers can assess the effectiveness of the training sessions. This can be done using a brief evaluation form handed out to participants at the end of the training session. Specific questions in the evaluation form could cover the extent to which trainees found the workshop useful, what could be improved and what other training they would like (see Section 6 and Section 13 for more details).

It is also useful for trainers to record how the day went for them and debrief after the session whilst also recording any innovations or problems from the day.

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Appendix 5.1 Example of a programme for a one-day training workshop[5]

Time	Session
0800-0830	Theory, definitions of manual handling and client handling, New Zealand legislation, the Accident Compensation Corporation (ACC), District Health Board (DHB) policy Introduction to key principles and risk assessment
0830-0900	Lecture on discomfort, pain and injury
0900-0945	Sit to stand, including verbal prompts, minimal assistance and transfer belts Wheelchair to chair transfer
0945-1000	Morning tea
1000-1115	Turning the client Introduction to slide sheets, including storage and laundry Applying and removing slide sheets Reposition using slide sheets
1115-1135	Using the transfer board (PAT slide) and slide sheets for lateral transfer of a client
1135-1215	Group 1 – How to instruct a fallen client who is conscious and uninjured to get up themselves Bed mobility, up and down, on and off the bed Group 2 – Moving an injured and dependent/unconscious fallen client Groups to swap after 20 minutes
1215-1300	Lunch
1300-1315	Discussion of 'falling' clients and bariatric clients
1315-1430	Introduction to hoists. Observation and practice using mobile and ceiling hoists and hoists for floor to bed and bed to chair. Demonstration of sit to stand hoist
1430-1530	Practical scenarios – groups to problem-solve using skills and knowledge of equipment learnt during the day DHB documentation for risk assessment using the client profile and HASI card Complete self-assessment forms
1530-1545	Feedback from scenarios and opportunity to discuss issues from own practice areas. Complete workshop evaluations, receive certificates

5. Adapted from the *Waitemata District Health Board Moving and Handling Orientation Training Programme*.

Appendix 5.2 Example of an assessment form for moving and handling training

Moving and Handling Self-Assessment Form[6]

Please tick each of the items to indicate which activities you observed and practised, and which topics you understood.

Theory	Understood
Legislation, ACC, provider organisation's safety policy	
Principles of safe client handling and risk assessment	
Pain and injury	
Falling clients, medical emergencies and bariatrics	

Practical	Observed	Practised
Sit to stand, stand to sit, verbal instruction, assistance and transfer belt		
Use of slide sheet		
Bed mobility – rolling, sitting up, sitting to edge of bed, moving up and down the bed (with and without slide sheets)		
Use of hoists – selecting and applying the sling, correct use of hoist and experienced being hoisted		
Verbal instruction to get uninjured fallen client up from the floor		
Potentially injured or unconscious fallen client – moving with equipment		
DHB documentation – use of the client profile and mobility assessment card		

Equipment selection, maintenance and use	Observed	Practised
Bed		
Slide sheet		
PAT slide		
Transfer belt		
Mobile hoist		
Ceiling hoist		

Participant: ..... Signature: .....

Training coordinator: ..... Signature: .....

6. Adapted from the Waitemata District Health Board Moving and Handling Orientation Training Programme.

Appendix 5.3 Example of content for a moving and handling training programme[7]

Summary of training programme

Module	Content	Time
A. Moving and handling theory	The causes and effects of musculoskeletal disorders Injury prevention and musculoskeletal disorders Legislation applicable to moving and handling people	1 hour
B. Ergonomics and risk assessment	Application of risk assessment, ergonomic principles and the discomfort, pain and injury (DPI) and LITEN-UP frameworks	1 hour
C. Sitting, standing and walking	Instruction and training for safe moving and handling for sitting, standing and walking transfers	1.5 hours
D. Bed movements	Instruction and training for the safe moving and handling of people in bed	1.5 hours
E. Lateral transfers	Instruction and training for moving people from one surface to another, on surfaces of similar height	1.5 hours
F. Using hoists	Instruction and training for moving people using multiple types of hoists and slings.	1.5 hours

A. Moving and handling theory

The suggested time for this session is one hour.

Aim: To provide the contextual knowledge necessary to reduce the risk of musculoskeletal injuries caused by poor moving and handling in the workplace.

Objectives: By the end of the session, the trainee should be able to:

- Describe the scope and meaning of 'moving and handling people'
- Describe the causes and effects of musculoskeletal disorders
- State the basic principles of injury prevention and managing musculoskeletal disorders
- Outline the legislation that applies to moving and handling people at work
- Describe the importance of ergonomics and risk assessment in reducing the risk of manual handling injuries
- Describe the principles of safer handling
- Identify the risks involved in team handling

7. Some parts of this appendix have been adapted from *All Wales Manual Handling Training Passport and Information Scheme* (Welsh Assembly Government, 2009). Retrieved 11 August 2010 from www.wlga.gov.uk.

- Describe the importance of effective communication in relation to moving and handling
- Outline the role of management in safe handling e.g. policy, health and safety roles, training, incident recording and audits.

B. Ergonomics and risk assessment

The suggested time for this session is one hour.

Aim: To provide instruction on the application of risk assessment, the safer handling of people, the application of ergonomics principles, the DPI framework and the LITE model to ensure the health and safety of staff.

Objectives: By the end of the session, the trainee should be able to:

- State the principles of safe handling of people and the DPI and LITEN-UP frameworks
- Identify the key areas to be considered when undertaking a moving and handling risk assessment
- Complete a formal risk assessment for a moving and handling scenario
- Identify how the principles of safe handling can be applied to moving bariatric clients
- Outline the importance of good posture and the application of ergonomics principles, appropriate to workplaces and work activities.

C. Sitting, standing and walking

The suggested time for this session is 1.5 hours.

Aim: To provide instruction and training for safe moving and handling for sitting, standing and walking transfers.

Objectives: At the end of the session, the trainee should be able to:

- Identify the key areas of manual handling risk assessment
- Discuss unsafe practices
- Competently demonstrate the following techniques with a client moving independently, moving with instruction, and being assisted by one carer and two carers, including where appropriate the use of relevant handling equipment:
  - assisting a person forward in a chair
  - assisting a person back in a chair
  - sitting to standing from chair
  - standing to sitting in a chair

- sitting to standing from edge of a bed
- standing to sitting on the edge of a bed
- assisted walking
- raising a fallen person – instructing the person to raise themselves, and use an emergency lifting cushion if available
- assisting a fallen person out of a confined space
- bed assisted sit to stand.

During the training session, trainees will be given the opportunity to practise relevant techniques.

Suggested equipment: slide sheets, handling belt, one-way slide sheet and electric profiling bed.

D. Bed movements

The suggested time for this session is 1.5 hours.

Aim: To provide instruction and training for the safe moving and handling of people in bed.

Objectives: By the end of the session, the trainee should be able to:

- Describe the principles of working at a bed e.g. appropriate height, and outline the principles of using slide sheets
- Discuss unsafe practices
- Correct posture while transferring a person
- Competently demonstrate the following techniques with a client moving independently, moving with instruction and being assisted by one carer and two carers, including where appropriate the use of relevant handling equipment:
  - fitting and removing slide sheets
  - turning in bed, including 180° turns
  - sliding a supine person up/down a bed
  - sitting a person from lying
  - sitting a person up and onto the edge of a bed
  - assisting a person to lie down from sitting on the edge of a bed
  - demonstrating the safe use of electric profiling beds.

During the training session, trainees will be given the opportunity to practise relevant techniques.

Suggested equipment: slide sheets, turntable, hand blocks, leg raiser and electric profiling bed.

E. Lateral transfers

The suggested time for this session is 1.5 hours.

Aim: To provide instruction and training for the safe moving and handling of people from one surface to another, where the surfaces are of similar height.

Objectives: By the end of the session, the trainee should be able to:

- Competently demonstrate the following techniques with a person moving independently, moving with instruction and being assisted by one carer and two carers, including where appropriate the use of relevant handling equipment:
  - lateral supine transfer from bed to trolley/trolley to bed
  - standing transfer from bed to chair/chair to bed
  - seated transfer from bed to chair/chair to bed
  - transfer from chair to chair/commode/toilet.

During the training session, the trainee will be given the opportunity to practise relevant techniques and transfers.

Suggested equipment: lateral transfer board (PAT slide), slide sheets, straight and curved transfer boards, stand aid, handling belt.

F. Using hoists

The suggested time for this session is 1.5 hours.

Aim: To provide instruction and training for the safe moving and handling of people using multiple types of hoists and slings.

Objectives: By the end of the session, the trainee should be able to:

- Describe the principles of hoist use, and the types of hoist available
- Outline the type, selection and use of slings
- Discuss unsafe practices
- Competently demonstrate the following techniques:
  - fitting a sling with a person in bed
  - fitting a sling in bed using slide sheets
  - fitting a sling with a person in a chair
  - fitting a sling in a chair with slide sheets
  - hoisting from chair to bed/bed to chair
  - hoisting a person from the floor
  - using a standing hoist.

During the training session, trainees will be given the opportunity to practise relevant techniques and transfers.

Suggested equipment: mobile floor hoist (capable of lifting from the floor), ceiling hoist (if available), stand-aid hoist, slide sheets and a selection of slings.

SECTION 6

Organising training

Contents

6.1 Overview of organising training

This section describes the key features of organising training programmes, including the planning and resources needed to set up a workplace training programme. As well as suiting organisations running their own training programmes, the information will be useful to people or organisations intending to engage private trainers, or send their staff to District Health Board (DHB) training programmes. In a later part of this section, we describe criteria that can be used to assess the effectiveness of an existing training programme for facilities using external training providers.

The previous section on moving and handling training (Section 5) covered the need for training, core content to include in training, and expectations for training outcomes. This section is addressed to managers and service providers and covers how to organise moving and handling training programmes. The information in this section can be adapted to suit the training needs of specific facilities and services.

Generally there are four options for arranging for staff to be trained in moving and handling people in New Zealand:

- A facility setting up its own training programme
- Engaging a private trainer to run staff training workshops
- Recruiting and training champions or coaches to work in specific wards or work units
- Sending staff to training programmes run by other organisations such as DHBs.

Training in moving and handling people is not a one-off exercise. All organisations employing carers need to commit to ongoing training for their staff. Ongoing training is important as it allows for staff turnover, the training of newly appointed staff and updating staff with developments in moving and handling equipment and techniques.

The next part of this section describes the key procedures needed to set up and run a training programme. This description will also be relevant for people commissioning external training as it provides a guide for assessing external programmes and providers.

6.2 Setting up a training programme

One of the ways to arrange for staff to be trained in moving and handling people is through setting up a comprehensive 'in-house' training programme. This section describes how to set up such a programme.

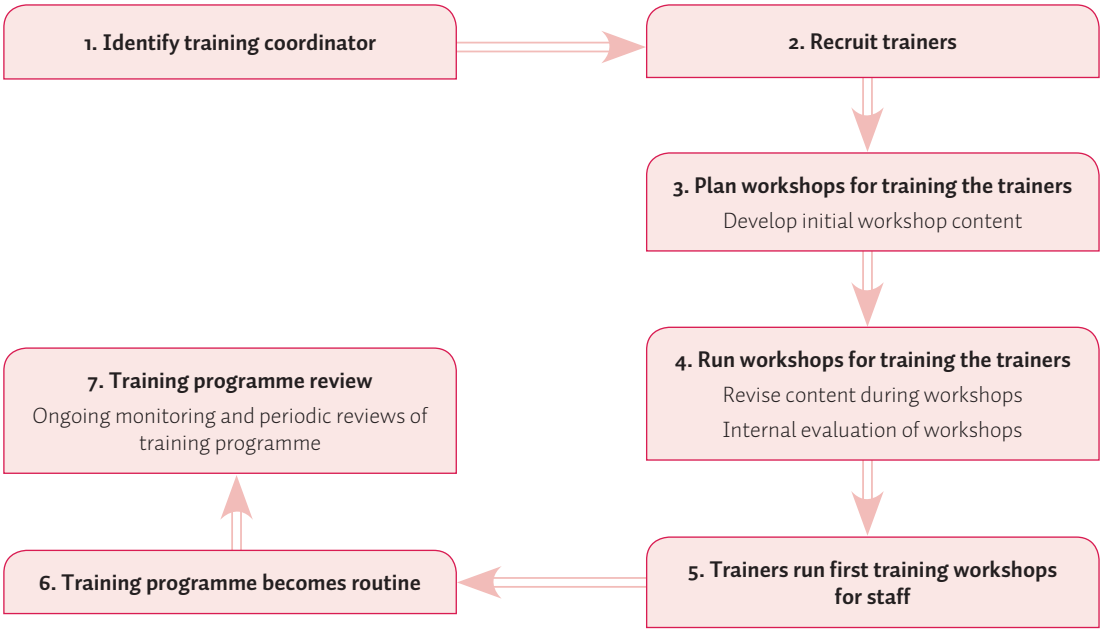
Some of the information is based on an evaluation of Waitemata District Health Board's pilot training programme, carried out in 2007.[1] The information described here can be adapted to suit the needs or size of any organisation. In small organisations a dedicated and adequately qualified and resourced person will still be required to design and implement the training strategy. Adding training responsibilities to an existing work portfolio is usually not reasonable, as organising training takes considerable time. Moving and handling training can also be linked to other health and safety training that is required in the workplace.

For large organisations, the general steps involved in setting up a training programme are shown in Figure 6.1. These steps or components can be adapted to suit the specific needs of an organisation or institution. The first step is to identify the training coordinator, who manages the process of setting up the training programme, ensures resources are available, and acts as an advocate for the training programme. The next steps involve recruiting and training the trainers through a series of 'train the trainers' workshops.

Once the trainers have completed their own training workshops, they are ready to start running their first workshops for carers and other staff in the organisation. These first workshops should be monitored and evaluated by the trainers group to ensure that any teething problems are addressed. Once these initial workshops have been completed, the training programme needs to become routine in the organisation so that training workshops are run regularly. The training coordinator and other trainers should routinely review the content and delivery to assess how well the training programme is doing and plan for further development of the training programme. The reviews should be ongoing, especially after external training for trainers and evaluations that identify any gaps in the training sessions.

1. See Thomas & Thomas, 2007.

FIGURE 6.1 STEPS NEEDED TO SET UP A TRAINING PROGRAMME



The primary components and resources needed for a moving and handling training programme are summarised in Table 6.1. The first four components are described in the following text for setting up a training programme. The last two components, delivery of the training programme to carers and evaluation of the training programme, are described in Section 6.3 'Operating and maintaining a moving and handling training programme'.

Training coordinator

When setting up a new training programme, one of the first steps is to employ or appoint a training coordinator. This will often be the moving and handling coordinator (sometimes called a manual handling coordinator). In this section, we refer to them as training coordinators.

The training coordinator should be a person with both practical experience in moving and handling people and experience in training. The training coordinator needs adequate resources to develop the training programme. Senior and mid-management, or the owners of care facilities, should openly promote the moving and handling programme. In-house training programmes should have a specialised training location, or access to one, as well as moving and handling equipment for use in training. Healthcare staff need to be released for training as part of their paid employment.

TABLE 6.1 COMPONENTS AND RESOURCES FOR A MOVING AND HANDLING TRAINING PROGRAMME

Programme component	Description and purpose
1. Training coordinator	An overall coordinator for the training who is closely involved with the trainers, the training workshops and hospital management The coordinator needs to ensure the cohesiveness of the programme, and monitor and review the progress of the training programme
2. Recruitment of trainers	Recruiting people who have experience in moving and handling, and who will be effective presenters
3. Planning and running the 'train the trainers' workshops	The content and information to be included in the training are identified Run workshops to develop familiarity with training topics and presentation skills among the trainers so that they can train carers and other staff
4. Training venue with access to equipment	A venue similar to the workplace settings of carers attending the training programme, which has adequate equipment available for hands-on use The training equipment should be similar to that available in wards and units where carers work
5. Delivery of the training programme to carers	Planning the content and delivery to participants Overall coordination by the training coordinator Certificates for participants, verifying training completed and training aims achieved
6. Evaluation of the training programme	Evaluation of all training to ensure it is delivered effectively and keeps up to date with best practice

Recruiting staff to set up a team of trainers is a key function of the training coordinator. This will be followed by ongoing recruitment as turnover of trainers occurs. If a system of having champions or preceptors within wards or work units is used, the managers in the area should plan to have the coordinator mentor and support the champions. The managers should recruit staff to replace the coordinator if they leave the role. Having a structured or semi-structured system where teams of trainers or champions receive regular update training and support is important to sustain the training programme. Without such a system, trainers and champions can feel isolated and that they lack credibility, especially when they are likely to be challenged by other staff.

During planning for a training programme, the training coordinator should arrange or carry out a training needs assessment among existing staff to identify the specific types of training that are required. This can be carried out through a survey to find out the specific moving and handling skills staff have, what training (if any) they have

received, how long ago they received training and any work in which they are involved (e.g. spinal trauma, bariatric) that requires specialised skills for moving and handling.

Observing staff at work is another way to gain information about their training needs. It is useful to speak to staff and their supervisors about their work, the challenges they face and what they identify as their training needs for moving and handling. Environmental audits and workplace profile assessments are effective ways to collect a snapshot of the workplace environment.

Recruitment of trainers

When recruiting and appointing trainers from within a large organisation, such as a hospital, it is best to select staff from multiple departments who cover multiple occupations. They could include physiotherapists, occupational therapists, nursing staff, radiologists and orderlies. Trainers will typically be involved in running training workshops for one day each fortnight or month, depending on the frequency of training workshops and the number of trainers available. They will also need to attend periodic meetings or study days for trainers to review and develop the training programme and their own skills.

The information-gathering to assess an organisation's training needs, noted earlier, may also be an opportunity to recruit staff to be trainers. The resources available for training will determine the size of the training team, the duration of training workshops for trainers, the experts who can be brought in to the training workshops, and the training venue and its facilities. Staff selected to be trainers should be supported by being given time to be trained and subsequently run the training workshops for other carers.

Their future involvement in training staff in moving and handling should be seen as part of their regular duties. Be prepared to recruit more people than intended. Some staff who attend the trainers' workshops may opt out of being trainers for various reasons during and after the training.

Planning and running the 'train the trainers' workshops

Once an appropriate number of potential trainers is available, the next step is to plan and run the workshops to train the trainers. Training the trainers can be done in a series of workshops that cover these topics:

- The content of the programme that trainers will teach others
- Presentation skills for running training workshops
- Evaluating the effectiveness of training workshops (see Box 6.1).

BOX 6.1

Train the trainers workshops: Waitemata DHB

In 2006, Waitemata DHB organised a 'training for trainers' programme. In the eight days of training workshops, four days were devoted to intensive 'expert' days where moving and handling specialists provided information on moving and handling to the trainers. Part of the learning was how to take what had been taught by experts and use it when presenting workshops to carers.

Trainers also learnt what it meant to be part of a team, understanding and accepting that trainers had different approaches to teaching and communication styles and knowing how and when to support colleagues when they were in difficult situations during training sessions. The ongoing recruitment and retention of trainers needs to be part of a training programme to ensure its long-term viability.

Source: Thomas & Thomas, 2007

Training for trainers should also include specific content on:

- Adult education theory – learning how to design and deliver education to adults
- Theory – the organisation's policies, legislation
- Practice – specific techniques, such as repositioning a client in a chair with and without equipment
- Equipment – familiarity with the use of moving and handling equipment.

These components also form the core of moving and handling training for staff. The overall duration of training will depend on the resources that are available and the topics to be covered and the level of detail.

Trainers are not just being taught to train other staff. Trainers are part of the culture of change and will need the skills to promote effective moving and handling. Being part of the change can be exciting but also challenging when confronted with a 'we have always done it this way' attitude and resistance from staff who may not like the change. An important reason for having a team of trainers is to provide a group to whom they can turn for support when encountering resistance from other staff, and it reduces the isolation trainers may experience. Having a multidisciplinary team also increases credibility in the workplace. The 'train the trainers' workshops become part of team-building. Having a core group of trainers also allows members of the team to cover for each other. For example, when one trainer is absent, another trainer can fill in for them.

Once the team of trainers has been established, the team should become a permanent feature of the organisation. Staff training is an ongoing activity. The team should run regular training workshops to provide induction for new staff, annual refresher courses for existing staff, and advanced training for staff with specialised needs. They are a valuable resource for staff and the organisation.

Examples of the core topics to include in the 'train the trainers' workshops are listed in Box 6.2. To develop the workshop content, discuss with potential experts what they have to offer by way of training and inform them of the topics that should be covered. For further ideas, use the internet to find out more about the topics covered in training provided by both local trainers and other training providers. Always keep in mind that all trainers should be familiar with the basics of moving and handling, risk assessment, common techniques for moving and handling people, and appropriate equipment.

BOX 6.2

Train the trainers workshop content

Training programmes for trainers should include the following topics:

- Adult education, learning how to teach
- Theory (e.g. relevant organisation's policies and health and safety legislation)
- Basic manual handling theory and skills
- Risk assessment
- Basic moving and handling people skills, such as repositioning a client in a chair with or without equipment
- Familiarity with the use of equipment
- Teaching and presentation skills
- Working as a team; keeping flow from one activity to the next; time keeping; and developing clear expectations of each other's tasks and responsibilities.

Workshops should be hands-on and provide the participants with multiple opportunities to carry out risk assessments, practise the techniques and become familiar with equipment commonly used in the workplace. Allow time for discussions and scenario-based training, and time to reflect on their learning.

Using moving and handling specialists in 'train the trainers' workshops

Trainers need to function as agents of change to develop a culture of safety in their workplaces. 'Train the trainers' workshops should develop change skills among trainers who will face challenges from staff resistant to change. Having specialist trainers in moving and handling present to the training workshops, particularly specialists with extensive industry experience, will be valuable for trainers.

The specialist trainers recruited to train the trainers should have the relevant qualifications, training and work experience. They should be able to demonstrate the appropriate competencies, knowledge and skills associated with moving and handling people.

BOX 6.3

Using specialists to train the trainers

Waitemata DHB drew on specialists in several fields to teach the trainers. Through them, trainers gained a more comprehensive view of moving and handling, enabling them to answer many of the 'tricky' questions they confronted later when they started training other staff members.

'The advance information we received during our training helped us to answer many awkward questions from participants. That really helped and I think we didn't realise until now how much it did help. Without that underpinning, you couldn't teach the nurses. Someone would throw a question at you, and you're glad that you got that one part of the education, which you can always pass on.'

Source: Thomas & Thomas, 2007, p. 12

Two ways to arrange suitable specialists for the training workshops are to: contact other organisations that have already developed permanent teams of trainers to get their views and recommendations on specialists they have used; and use the internet to seek out other relevant information. It is worth spending time to get appropriate specialist trainers, keeping in mind the lack of nationally recognised training standards in moving and handling people in New Zealand.

Training venue with access to equipment

Securing a suitable training venue and the appropriate equipment, including furniture, for the duration of training is a priority. It is strongly recommended that training for staff take place in an environment that is similar to their work settings. This means having equipment and furniture that is similar to that in wards, a residential facility or home, including hoists, slide sheets, beds, side tables, chairs, toilets and bathrooms. If the specific types of equipment needed are not available, contact suppliers to see if they will loan or hire equipment (see Box 6.4). Many suppliers provide training in the use of their equipment.

BOX 6.4

Partnerships for sharing training resources

Training facilities and equipment require substantial initial funding to set up and ongoing funding to maintain. Many organisations would like to provide moving and handling training for their staff, but do not have the resources or locations to provide suitable training facilities with equipment.

A university programme in Auckland sends the staff who teach and supervise students in clinical practice to a one-day moving and handling workshop provided by Waitemata DHB trainers. The workshop is held in a clinical training facility at Waitakere Hospital in west Auckland. This training ensures that the teaching staff are familiar with current practice.

A nursing school in Wellington has links with a local rehabilitation equipment supplier that loans up-to-date moving and handling equipment for students to see and use.

If a dedicated training space is not available, an alternative is to mark off rooms, door widths, corridors and wards by putting tape on the floor in the designated training space. Then the furniture and equipment can be placed in the marked areas. Even if this is time consuming and not ideal, it serves the function of allowing people to be trained in realistic confines of the space in which they actually work. If organisations intend to provide ongoing training for staff, planning and commitment will be needed to set up dedicated training facilities. Organisations may wish to meet to discuss who has what resources and how best to share them where possible, or how training activities can be coordinated. Alternatively, local resources can be hired or shared.

6.3 Operating and maintaining a moving and handling training programme

Once the trainers are ready to start running training workshops, the next step is to promote regular training workshops for carers and other staff. Running a training workshop involves four phases: piloting the training workshops, establishing routines for running the training workshops, evaluating the workshops, and reviewing and developing the training programme.

Piloting the training workshops

It is good practice to run at least two pilot workshops with at least a week between them. Pilots provide an opportunity for trainers to learn how to run workshops, both as individuals and as a team. During pilot workshops the team members can trial their presentations on a real audience, receive feedback on their teaching and identify problems.

For pilot workshops, recruit staff as trainees who can provide useful feedback on the experience. Have a trainer or another staff member observe and time the workshop components and note who presents or facilitates each component. Immediately following the pilot workshops, arrange debriefing sessions with (a) the trainees and (b) the trainers and the observer.

It is a good idea to have an experienced trainer sit in the first pilot workshop and give feedback to the trainers after the workshop. The trainers can use the feedback and their own observations to modify materials, improve on teaching or presentation styles and work on timing and collaboration as a team. In the second pilot they can then trial a revised version. In both pilot workshops, use the feedback from the audience and team debriefing to make adjustments or changes that can be incorporated before going 'live'.

FIGURE 6.2

Provide active hands-on training

A key point to observe during the pilot workshops is the extent to which the trainers effectively engage the workshop participants using active teaching and learning styles. This should include providing opportunities for all workshop participants to practise several specific moving and handling techniques while other participants act in the role of clients.

Establishing routines for the training workshops

As the pilot workshops are completed, the training coordinator and trainers need to set up a regular schedule for running the training workshops. Amongst other tasks, this will involve:

- Booking the training facility with equipment
- Allocating trainers to run each workshop
- Notifying sections and units in the organisation of the training schedule
- Registering staff who wish to attend the workshops or who are selected to attend the workshops by their managers
- Sending information about the workshop dates, times and locations to participants
- Providing attendance certificates to staff and other people who complete the workshops.

A training register should be maintained that includes a record of all training sessions held each year, a list of participants' names, and the specific competencies and topics covered in the workshops. A staff health and safety training record may already be in place where this can be recorded.

BOX 6.5

Ensure training time for staff

In some organisations the moving and handling coordinator has to lobby the nursing director and other managers to convince them to release staff for moving and handling training. Such organisations need to reassess their policies and ensure management support for training is secured. Failure to allow staff to attend training could be seen as a breach of the Health and Safety in Employment Act (1992).

As a training team develops it will change over time as trainers drop out of the team for a variety of reasons. What is important is to have a system of ongoing recruitment and replacement that provides for the recruitment and induction of new trainers. Develop a plan for how to provide training for new trainers as they join the existing team, and how to retain core trainers.

Updates from experts, invited speakers, attending relevant conferences and arranging for equipment suppliers to give demonstrations to which trainers are invited are some of the ways to keep the training team together. There should also be opportunities for training team members to come together to talk about issues in the workplace, where other trainers can contribute suggestions and constructive ideas. Sustaining the team is important for its stability and growth and to providing training to staff in a systematic, consistent and meaningful way.

Evaluation of the training workshops

An important activity for the development of the training workshops is the programme's ongoing evaluation. One of the core tasks is to conduct routine end-of-workshop evaluations using brief surveys that are handed out to participants prior to the end of each workshop and collected before they leave the workshop.

Examples of questions that can be included in the end-of-workshop surveys are shown in Table 6.2. The training coordinator should review these forms after each workshop. It is also good practice to have the training team review the feedback from the forms, or to receive a summary of the ratings and comments made by participants.

A useful evaluation procedure is to have a meeting of trainers at the end of each workshop. These 'debriefing meetings', as they are sometimes called, can be used to discuss what went well in the workshop, what could be improved, and any changes to be made at the next workshop. Another useful tool for developing trainers' skills is to record the training delivered, any improvements or innovations and the general performance of trainers. For some new trainers, presenting at a workshop can be moderately stressful, so the opportunity to talk about how the workshop went at the end of each workshop can be very valuable. There is more information on monitoring and evaluation in Section 12.

TABLE 6.2 EXAMPLES OF ITEMS TO INCLUDE IN AN END-OF-WORKSHOP EVALUATION FORM

Examples of items	Comment
What did you like about the workshop?	Provides a list of topics that participants most liked
Which specific topics or aspects were most useful for you work?	Provides a list of items most relevant to workplaces
What could be improved in the workshop?	Identifies workshop features that could be improved
What topics would you like to receive more training on?	Identifies topics that could be covered in future workshops
Overall, how would you rate the usefulness of the workshop for your work? 7 = Excellent 6 5 4 3 2 1 = Poor	Gives an overall score for usefulness. Using a scale with 7 response options allows a range of views
Overall, how would you rate the quality of the workshop teaching? 7 = Excellent 6 5 4 3 2 1 = Poor	Gives an overall score for workshop teaching

An important task is to check those people registered to attend the workshops and compare the list with the list of those who actually attended to identify 'no-shows'. If there is a pattern of no-shows who tend to be from specific wards or units, the training coordinator should contact the unit manager to find out why.

Assessing learning and competence among trainees and carers

As part of a training programme, it is often important to assess how much trainees have learnt. Written tests given to trainees to complete are commonly used at the end of workshops. Table 6.3 provides several options for assessing trainee competence, either at the end of workshops or subsequently in work settings. Generally, the simplest types of assessment have lower levels of validity in predicting the actual use of appropriate moving and handling techniques in work settings. Checklists of tasks completed during training and written tests of knowledge about moving and handling are relatively easy to conduct but less likely to predict the effective use of techniques in work settings. In contrast, observations of trainees in work settings have high validity but are much more costly. Each training programme and service provider needs to organise assessment according to the needs of their workplace.[2]

TABLE 6.3 OPTIONS FOR ASSESSING COMPETENCE IN MOVING AND HANDLING

Type of assessment	Validity	Resources needed
1. Checklist of tasks completed during training	Low validity	Easy to conduct, checklists available that can be adapted
2. Written test covering knowledge about moving and handling	Low to moderate validity	Relatively easy to conduct, needs system to mark tests
3. Written test requiring selection of appropriate techniques based on multiple written scenarios	Low to moderate validity	Requires setting up scenarios and a system to mark responses
4. Demonstration of specific techniques for assessment purposes	Moderate to high validity	Requires assessment protocol and additional time to conduct assessments with individual trainees or carers
5. Observation of moving and handling tasks in a ward or work setting	High validity	Considerable time and resources needed to carry out the observations

2. See Hignett (2005) and Design 4 Health (2005, p. 32) for examples of assessments related to moving and handling competencies.

Ongoing development of the training programme

Training programmes need to plan for ongoing development so that they continue to meet the training needs of people attending workshops. The following are suggestions to assist development:

- Periodically review end-of-workshop survey forms and any notes from workshop debriefing meetings to note any significant revisions or changes needed to develop the workshops further
- Training documents should be reviewed and updated at regular intervals based on the experiences of trainers and monitoring of client moving and handling practices in hospital workplaces
- Feedback should be sought from unit managers regarding their views about the training programme and its impacts on staff moving and handling practices
- Incorporate new developments in training as they become available.

It is good practice to schedule periodic reviews of the training programme. These reviews could involve the training coordinator, the trainers, managers from other sections including health and safety, and external representatives from tertiary education programmes for nurses and health professionals. Feedback from previous workshops can be discussed at the annual review meeting. These meetings can also provide opportunities for managers and external agencies to comment on developments in training, and review trainers' input regarding any changes needed. They can also consider the future career plans of trainers and whether more workshops will be needed for training the trainers.

6.4 Organising external training

If an organisation does not have adequate resources for setting up an in-house training programme, other options for providing training are to engage a private trainer to run staff training workshops, or organise to send staff to a training programme run by a DHB. In small organisations, the person designated as the training coordinator will need to organise training. Tasks are likely to include finding out which training providers are available locally or in their region, how much experience they have, and what the costs are for providing training or access to their training facilities.

BOX 6.6

Comment on moving and handling training in New Zealand

Moving and handling training in New Zealand needs further development and recognition as a profession. There is a need for assessment and monitoring of current training programmes and training providers. The development of a national standard for moving and handling training in workplaces would be desirable. Training for client moving and handling needs to be a recognised profession with its own career path. Currently tertiary courses for health professionals in New Zealand appear to spend little time covering moving and handling people. There is a need to develop additional specialised tertiary courses in moving and handling people with nationally agreed standards for training. Agreed standards for training need to outline a core curriculum, the qualifications and experience of trainers, and the quality of training.

Before contracting an external trainer or carrying out training, there should be a training environmental audit or workplace profile of the facility staff. Documenting specific staff training needs will assist in finding trainers who can help meet these needs. It will also be useful to consider the outcomes that are anticipated from the external training and to plan for future training if the external training is for a limited period.

In terms of evaluating the suitability of external training providers, the following aspects should be considered:

- The training backgrounds of the training coordinator and trainers
- Previous relevant experience in training staff in moving and handling
- If feasible, participation in or observation of the training providers delivering workshops
- The ongoing support and resources provided as part of the training package
- How much of the training provides 'hands-on' practice for trainees
- What moving and handling equipment they can provide
- Whether the training providers routinely evaluate each workshop they deliver (ask for a written report, including their evaluation form).

Also, contact and talk to at least two previous clients of the training providers and get their views about the effectiveness of the training they received.

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SECTION 7

Equipment for moving and handling people

Contents

Note: All images and other references to equipment shown in this section are provided for illustrative purposes only. They are not, and should not be taken as, endorsements of specific equipment or suppliers.

7.1 Using equipment for moving and handling people

This section describes the main types and functions of equipment for moving and handling people. Section 8 of the Guidelines, 'Equipment management', covers equipment procurement systems, maintaining an equipment register and equipment storage, maintenance and replacement.

Equipment is a core component in effective moving and handling programmes, together with risk assessments, the use of correct techniques, staff training and appropriate facility design. The supply of equipment by itself will not lead to reduced rates of injury unless equipment use is part of a comprehensive moving and handling programme. Successful programmes provide both equipment and training in how to use specific items of equipment for lifting, transferring and repositioning clients.

The proper use of equipment is essential for the safety of both clients and carers and improves the quality of client care. Equipment can also facilitate client rehabilitation, decrease morbidity and preserve the dignity of clients. Compared with techniques that involve manual transfers of clients without equipment, the use of equipment lessens the forces required for moving and handling clients and can reduce the risks.

Moving and handling equipment also improves client outcomes, such as reducing their length of stay and the risk of complications such as deep vein thrombosis, chest infections, urinary tract infections, pressure ulcers, skin tears and falls.

Having 'fit-for-purpose' equipment is one of the most important aspects of moving and handling programmes. New moving and handling equipment is constantly being developed. With the increasing complexity of equipment and technological developments, information about specific equipment can become outdated. Managers responsible for purchasing equipment, and people providing training in equipment use, need to keep up to date with developments in equipment for moving and handling people. The primary focus of this section is on descriptions of equipment and specific features. Specific procedures for using equipment, such as slide sheets, slings and hoists, are described in Section 4 Techniques for moving and handling people.

7.2 Types of equipment

Table 7.1 shows the main types of equipment used for moving people, and examples of common uses. Some types of equipment are known by several names, as shown. Detailed descriptions of each type of equipment are provided later in this section. For some categories of equipment, there are several related types, which may have different names.

TABLE 7.1 COMMON TYPES OF EQUIPMENT

Type of equipment (and alternative names)	Description and common uses
Slide sheet (sliding sheet, slippery sam)	A sheet made of low-friction material and used under a client to allow easy repositioning in bed, sling attachment and lateral transfers
Transfer belt (handling belt, gait belt, walking belt)	A belt placed around a client's waist during several types of transfer and for assisted walking for rehabilitation. There are multiple types of belt
Transfer board (PAT slide, slide board, banana board)	A full-body-length board made from wood or plastic, used to bridge gaps for client transfers from one surface to another, such as from a stretcher or wheelchair to a bed. Smaller transfer boards can also be used for lateral, seated-to-seated transfers
Air-assisted transfer device	There are several types: inflatable mattresses for lateral (bed-to-bed) transfers and air-assisted lifting devices or 'jacks'
Electric profiling bed (electric bed)	An electrically operated bed that has a mattress platform split into two, three or four sections, which allows adjustment using a control handset or panel
Mobile hoist (floor hoist, floor lift, mechanical lift, portable hoist)	A hoist with wheels that can be moved along the floor – used for lifting a client inside a sling or on a stretcher designed for use with hoists
Standing hoist (sit to stand hoist, standing lift, stand-aid hoist)	A specific type of mobile hoist designed to assist people between sitting and standing positions. Standing hoists are designed to fit under and around chairs
Ceiling hoist (overhead hoist, ceiling lift, mechanical lift, gantry hoist)	A hoist attached to permanently mounted ceiling track that moves a client inside a sling. Gantry hoists have overhead tracks mounted on wheeled frames
Sling	A fabric support used for carrying a client while being moved with a hoist – there are multiple types of sling
Stretcher	A rigid frame used to carry a client in a lying or supine position. Often made of lightweight material and commonly used in ambulances and by emergency services. Wheeled stretchers are used in hospitals for transporting clients between locations, and should be electric
Wheelchair	A mobile chair used for transporting a client in a sitting or upright position. Bariatric wheelchairs must be powered or moved with bed pushers

The main types of equipment that are commonly used can be summarised within the four main groups of client moving and handling tasks. These groups of tasks are:

- Sitting, standing and walking
- Bed mobility
- Lateral transfers
- Hoisting.

Table 7.2 provides a summary of the common types of equipment used for these handling tasks. The recommended techniques for each of tasks in the table below are described in Section 5 of the Guidelines.

TABLE 7.2 HANDLING TASKS FOR WHICH EQUIPMENT MAY BE USED

Type of task	Examples of specific movements	Examples of equipment that could be used
Sitting, standing and walking	Sitting to standing from a chair	Transfer belt, standing hoist, mobile hoist, chair-lifter
	Standing to sitting on a bed	Transfer belt
	Assisted walking	Transfer belt, walker, gutter frame, hoist with walking harness
Bed mobility	Turning in bed	Slide sheets, electric bed with turning function
	Sliding client up in bed	Slide sheets, electric bed
	Sitting person up onto edge of bed	Slide sheets, electric bed, bed accessories
Lateral transfers	Lateral transfer from bed to stretcher	Slide sheets, transfer board, air mattress, standing hoist
	Transferring from chair to commode	Ceiling hoist, mobile hoist, seated transfer board, standing hoist
	Transferring to toilet	Ceiling hoist, mobile hoist
Hoisting	Fitting a sling to client in bed	Sling
	Hoisting from bed to chair	Ceiling hoist, mobile hoist, standing hoist
	Hoisting client from floor	Ceiling hoist, mobile hoist, air jack
	Transferring to toilet	Ceiling hoist, mobile hoist, standing hoist

7.3 Examples of moving and handling equipment

The next part of this section provides examples of the more commonly used types of equipment for client handling. Further information about specific types and functions of equipment can be obtained from the websites shown at the end of this section, and from companies supplying healthcare equipment in New Zealand and Australia. Training in proper use is essential for all types of equipment.

Slide sheets

Slide sheets are one of the most commonly used types of equipment in healthcare services. They are used to move clients horizontally on beds, trolleys and chairs without lifting. Slide sheets are relatively low cost, have many uses and are relatively simple to use. They avoid the need to lift clients, but despite their simplicity they do require training in their proper use.

FIGURE 7.1

Slide sheets

It is important that the use of slide sheets is consistent with current best practice, as described in Section 4 Techniques for moving and handling people. Training is necessary in the correct application and use of slide sheets. Incorrect use can cause injury to both carers and clients. Slide sheets are made from lightweight fabric and have low-friction surfaces that become very slippery when placed together. They come in different configurations: the fabric may be sewn together to make a double sheet, or they may come as single sheets that the carer folds over to form a double layer. Two sheets can also be used together. They may or may not have handles for hanging up. Two single sheets are preferable as they are multidirectional and allow optimal movement.

There are several handling techniques that use slide sheets (see Section 4 Techniques for moving and handling people). Using them underneath a person allows an independent or assisted sliding movement on a bed. They can be used for many tasks involving lateral transfers and repositioning, such as:

- Moving a client in bed
- Turning a client on to their side in bed
- Transferring a client from a bed to a bed with a transfer board
- For a client who has fallen into a confined space; slide sheets can be used to move the client along the floor to a location where a hoist can be used
- Facilitating independent bed mobility.

Slide sheets come in different sizes and they may be padded or unpadded. Slide sheets with loops can be stored on hooks beside clients' beds.

Points to note about slide sheets

- Always conduct a risk assessment prior to moving a client
- Most slide sheet transfers require two carers
- The risk assessment should include skin integrity, pressure areas, wounds, attachments and sensitivities
- Assess pain management
- Encourage mobility where possible
- When moving large clients, ensure there is a sufficient number of correctly sized slide sheets and enough staff for the transfer
- Infection control considerations require slide sheet use with one client only before being laundered
- Slide sheets should be accessible beside the bed of the client for whom they are required – a suitable storage facility is needed, such as a hook, container or fabric holding bag
- When a client is discharged or moved to another location, or the sheets become soiled, the slide sheets should be sent for laundering
- Bed-to-bed transfers should always use both slide sheets and a transfer board
- Most types of slide sheet are designed to be laundered (see Section 8, Table 8.2). The usual slide sheet lifespan is around 80 washes, depending on the quality
- Slide sheets must be inspected for tears and other damage before use.

FIGURE 7.2

Store slide sheets beside bed

Slide sheets can be used multiple times on the same client and require laundering when soiled, or before using with a different client. Organisations need to have a system for laundering slide sheets separately from regular laundry, as a hot wash destroys the fabric, reducing the lifespan of the slide sheet. Slide sheet care should be outlined in the organisation's moving and handling policy. There are also disposable slide sheets for single client use only, which are discarded when no longer needed for that client.

Transfer belts

Transfer belts are fastened around clients' waists or trunks during transfers and for assisted walking. They are primarily for clients who are mobile. The main function of transfer belts is to assist almost independent clients in mobilising. They can also

assist with clients who might be difficult to hold, either because of size, or discomfort (male walking female) or because the client is uncomfortable with being assisted. The belts can provide an extra layer between carers and clients. Belts designed specifically to assist clients when walking are sometimes referred to as 'gait belts'.

Transfer belts are used to assist the development of mobility and rehabilitation for clients who are minimally dependent, have weight-bearing capacity and are cooperative. Types of use include bed-to-chair, chair-to-chair and chair-to-car transfers, repositioning clients in chairs, and supporting clients while walking.

There are multiple types of belt. Most belts are made of fabric or cushioned material and have multiple loops or handholds.

FIGURE 7.3

Transfer belt

The belts are secured around clients' waists and adjusted until they are firm, not tight. Transfer belts should only be worn by clients, never by carers.

Points to note about transfer belts

There are some risks for carers associated with using transfer belts. For this reason, some moving and handling coordinators recommend that transfer belts not be used for client transfers. If used, the carer should hold on to the handles from the outside, and never put their thumbs inside or through the loops (in case the client falls and the carer cannot disengage their hands). Transfer belts should never be used to lift clients.

Transfer boards

There are multiple types of transfer board and related assistive devices. Full-body-length transfer boards (sometimes labelled as PAT slides or Transglides in New Zealand) are used to bridge gaps for clients who are lying down when sliding between two adjacent surfaces at similar levels, such as from a bed to a stretcher. They are usually made of plastic and should be used in conjunction with slide sheets. Smaller transfer boards can be used for seat-to-seat transfers, such as between a car seat and a wheelchair.

FIGURE 7.4

Full-length transfer board

In the past, roller boards have been used as lying-to-lying transfer devices. These boards have a loose vinyl covering that is difficult to clean and potentially an infection

control risk. These boards create risks for carers when reaching and risks for clients with skin shear. It is recommended that roller boards be replaced with full-length transfer boards.

Sitting-to-sitting transfers

For sitting-to-sitting lateral transfers, a smaller transfer board or slide board can be used to bridge gaps between adjacent seats. These boards can be straight or curved like a boomerang (an example is the yellow 'banana board'). Small transfer or slide boards can be used for lateral transfers such as those between a:

- Chair and wheelchair
- Bed and wheelchair
- Wheelchair and toilet
- Wheelchair and car.

FIGURE 7.5

Sitting transfer board

Curved transfer boards make it easier to transfer around fixed armrests. The boards are usually prescribed by therapists. Note that clients should have sitting balance to use these boards and both carers and clients require training in their use. If feasible, arrange to have the surface to which the client is being transferred slightly lower than the surface from which they are being transferred. This makes it easier for the client to move.

Air-assisted transfer devices

There are a number of air-assisted transfer devices available. There are two general types: inflatable mattresses for lateral (e.g. bed to bed) transfers and air-assisted lifting devices, or 'jacks'. These devices are generally versatile and cost effective, especially for small facilities.

FIGURE 7.6

Air-assisted mattress

Inflatable mattresses

For lateral transfers while lying down: the client lies on the mattress while the client and mattress are transferred between two adjacent surfaces, and air-assisted lifting devices. A lateral transfer air mattress can be used as an alternative to a transfer board and slide sheets. The mattresses are effective for reducing friction, and thus the load on carers during lateral transfers.

Air jacks

Air-assisted lifting devices, or 'jacks', can be used to raise clients from the floor to bed or stretcher level by pumping air into an air mattress with multiple layers, which expand vertically as more air is pumped in. The jacks can be very useful for lifting fallen clients from the floor. Figure 7.7 shows an example of an air jack that lifts clients in a sitting position. Figure 7.8 shows a 'Hoverjack' that lifts clients in a lying position from the floor to bed height. All types of air-assisted device require carers to steady the client, and an air pump.

FIGURE 7.7

Air-assisted jack

FIGURE 7.8

Air-assisted 'Hoverjack'

Electric profiling beds

An electric profiling bed has a mattress platform comprising two, three or four separate sections, each of which can be adjusted using a control handset or panel. Height adjustment allows the bed to be raised or lowered quickly for client movements and clinical services.

Some electric beds have one movable section in which only the head or backrest section can be raised, allowing a client to sit up in bed. With these beds, clients are more likely to slide down the beds and may need frequent help from carers.

FIGURE 7.9

Example of an electric bed

FIGURE 7.10

Electric bed showing profile positions

The general benefits of electric beds are:

- Promotion of client mobility and independence
- Reduced workload for staff
- Reduction in manual handling risks and injuries to staff
- Reduced incidence of pressure sores in clients.

With electric beds, staff can adjust the height more accurately to suit individual client and carer needs. Being able to stand back and observe a client while operating a bed allows staff to observe the client moving into different positions. Improved client comfort is more likely as adjustments of the beds are usually smoother than with beds requiring a hydraulic pumping action.

All clinical areas and clients benefit from the bed height adjustment that allows low bed heights. Electric beds also facilitate clients getting out of bed by raising them closer to a standing position. Staff time can be saved by the reduced need for manual handling of clients and the removal of hydraulic pumping on non-electric beds.

Points to note about electric beds

- **Mattress compatibility**: Some electric beds may require special sectioned mattresses. Beds requiring special mattresses may mean replacing beds as a combined bed and mattress procurement
- **Size**: Electric beds can be large. Beds with a longer-than-average length may lead to reduced space in areas such as multi-bed units. They can be difficult

BOX 7.1

Compatibility of electric beds and mobile hoists

A common problem I have come across is the incompatibility of some cheaper electric beds with mobile hoists. The beds do not allow clear access underneath for the hoist legs to go under. Staff have to push and pull resulting in jerky movements for the resident. There was an incident where electric bed wires under the bed caused an accident when the hoist was pulled over the wires and the patient fell out of the sling. Manufacturers need to provide a way of hooking up the wires out of the way.

Source: Manual handling trainer

to manoeuvre in tight corners and narrow corridors and through doorways and hospital lifts

- **Compatibility with other equipment**: Mobile hoists usually need positioning under beds. Can the supplied mobile hoists fit under the bed at its lowest setting?
- **Weight and portability**: The portability of electric beds is a consideration for community use owing to the need to transport the beds and assemble them in clients' homes and other residential settings. In hospitals, beds may need to be moved from ward to ward. Being able to move and steer beds may be a consideration. The heavy weight of many electric beds may be an issue when beds are used to transport clients through carpeted areas or up sloping corridors. A mechanical bed pusher can be used to assist with mobility of the beds
- **Installing new beds:** Whenever new equipment is purchased, plan for all relevant carers to be trained in its use. Beds are becoming more complex and all practicable steps should be taken to ensure their safe use.

Specific features

Electric beds come in many shapes and sizes. They can include many features that are not apparent on a brief inspection. Some potentially useful features are described below.[1] When purchasing electric beds, the assessment and procurement procedures need to take into account the types of client that will be using the beds and the bed features that will most often be used by carers.

- **Minimum height**: Some models of bed are quite high when in their lowest positions for small clients. Short clients can find it difficult to place their feet on the floor when transferring off and onto the bed edge, reducing their independence. A similar problem can occur with the use of pressure-reducing overlay mattresses, as the height increase can cause transfer difficulties for some clients. Some electric beds are designed to go down close to floor level (sometimes referred to as 'floorline' beds) and can be used in falls management

FIGURE 7.11

Example of an electric bed that can lower close to floor level

- **Number of sections**: Beds with four sections are most versatile for positioning clients. However, beds with two or three sections are available

1. Some of the points in this section are from the report by MHRA, 2003.

- **Bed-to-seat or bed-to-stand profiling**: Some models of electric bed allow the profile of the bed to convert to a seat or to a standing position while the client is in the bed. This avoids the need for carers to fit slings on clients who are lying down, or manually repositioning clients from lying to sitting and sitting to standing
- **Side rails**: Rails at the side of the bed that can be raised or lowered prevent clients rolling out of bed. The minimum height to which beds can be lowered may be compromised by the use of side rails, particularly drop-down rails and those that fold underneath the bed. Side rails need to be adjustable to allow transfers between bed and stretcher. Side rails are a recognised form of restraint, and if being used for restraint need to be noted in the restraint register, consistent with organisation policy. Split rails are preferable and seen less as a restraint

FIGURE 7.12

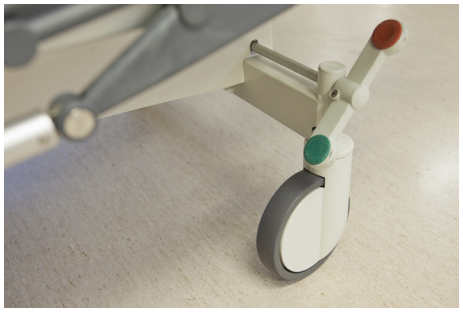
Side rails on a bed

- **Turning function**: Some beds have turning functions that allow clients to be turned on their sides. Depending on the type of bed, turning can be activated by the client in bed or by a carer, or the bed can be programmed to turn at set intervals. Caution must be used with turning functions as there is the potential for limbs to be trapped, particularly with clients who have decreased sensation or communication difficulties. Mechanical turning does not replace the other functions of carer-provided turning of a client, such as checking breathing and skin and providing human contact
- **Battery backup**: Being able to operate beds on backup batteries may be needed where clients are moved between locations in bed, or where access to electrical sockets is limited
- **Manual operation**: Is there provision for manual operation in case of battery or electrical failure? The manual levers need to be identified easily by staff
- **Cleaning and infection control**: The component area of the electric bed frame and any attachments should be accessible for cleaning. Ease of cleaning is best assessed when trialling a bed
- **Preventing client moving down the bed**: Clients often move down their beds when moved from lying to sitting positions. On electric beds, this may occur as the beds are profiled to lift up clients' heads. This can be avoided if the beds include a feature called 'auto-regression' of the backrests in the bed specification

- **Lockout facility**: A facility to lock the adjustments to prevent beds being profiled or tilted may be important in clinical areas where it is necessary to prevent knee flexion or other movements in clients who need to be nursed flat. The lock-out feature may also be useful during visiting times to avoid mishaps associated with visitors
- **Wheel locks**: Locks on bed wheels are used to prevent beds being moved. These are important for some types of transfer, such as bed-to-bed transfers using transfer boards
- **Handsets**: Two features of the control handsets to assess are the robustness of the handsets and control panels, and their ease of operation

FIGURE 7.13

Wheel locks on a bed



- **Other features**: There are a number of other specialist operations and functions available on some electric beds. These include weighing scales built into the beds, motorised beds that assist movement along corridors, and anti-fall alarms.

Bed accessories

There are multiple accessories, or add-ons, for beds that can be useful for some types of client and setting, especially in community settings where electric beds are not available. These include:

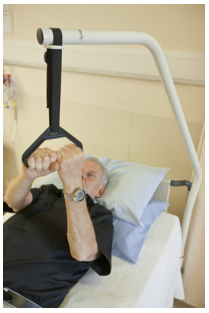
- **Bed ladders**: Small ladders or steps placed at the sides or ends of beds that allow partially mobile clients to get in and out of bed
- **Bed or hand blocks**: Hand blocks have wide bases and handholds. They are used in pairs by clients who are sitting in bed
- **Bed levers**: A bed lever is a grab rail that a client can use to help them sit up or turn over in bed. There are various types and they can be fixed to the wall, bed or floor. Some may obstruct part of the bedside, making it difficult for the client to get in and out of bed, while others are adjustable and can be moved away from the bed. Bed-fixed levers must be securely positioned and fitted to be safe for use. Some bed-fixed levers have platforms or rails that go under the mattresses, so they are secured in position by the clients' body weight
- **Rope ladders**: A rope ladder helps the client to pull themselves up in bed from a lying position to a sitting position. It has plastic or wooden rungs linked together with rope to form a ladder. The ladder attaches to the foot or base of the bed. Rope ladders are unstable to pull up on and often need practice to master. Clients need to have strong upper limbs and abdominal muscles. It is

essential that the rope ladder is securely fixed to the bed and the client can reach the first rung when they are lying on the bed. Rope ladders with plastic rungs may be slippery to hold

- **Overhead poles**: Overhead or lifting poles (sometimes called 'monkey poles') are used by clients to move in bed, such as up and down the bed and in and out of the bed. They can also be used by clients to lift themselves so that bedpans can be placed under them. Most overhead poles use floor- or bed-mounted cantilever gantries, with handles hanging from them on height-adjustable straps. The gantry frames must be secured to stop them tipping. All poles should have safe working loads (SWLs) clearly marked on them

FIGURE 7.14

Overhead pole



- **Bed lifters**: These are used to lift beds to suitable working heights so that carers do not have to stoop. They are suitable for non-electric beds, such as in homes where they allow clients to continue using their own beds. They do not provide profiling actions, and they require sufficient space to get under the beds

- **Bed movers**: These battery-operated devices (see Figure 7.15) attach under the foot ends of beds and allow operators to transport beds and clients to other locations. They have controls that allow manoeuvring in confined spaces and steering along corridors. Their positioning allows the operators to see the clients during use. Bed movers reduce strain on staff who regularly move beds during their work shifts. However, they increase the overall length of the beds and may not fit in lifts. Bed movers require additional storage and it may be difficult to have movers kept where needed.

FIGURE 7.15

Bed mover

Hoists

There are three general categories of hoist: mobile floor hoists, standing hoists and ceiling hoists (sometimes called overhead hoists). In some countries hoists are called lifts or mechanical lifts. All hoists use slings to hold clients, and some hoists can lift clients in specially designed stretchers. All hoists should be compliant with the Standards New Zealand requirements in AS/NZS 3551:2004 Technical management programs for medical devices. This standard covers procurement, acceptance process, safety and performance testing and disposal.

The types of sling used with hoists are described later in this section. All hoists, slings and ceiling tracking should be clearly labelled with their SWLs.

All carers using hoists should be trained in fitting slings and in the proper use of hoists prior to using them. Carers also need to be familiar with the specific functions of particular types or models of hoist. Like other moving and handling equipment, hoist designs and features are continually evolving.

Mobile hoists

Mobile hoists (sometimes called mobile floor hoists) are used to transfer clients who are not mobile between locations, such as from a bed to a chair or a bathroom. They can also assist with ambulation, gait training and other specialised functions. The client is supported in a hoist sling, which should be single-client assigned for infection control.

Mobile hoists can be very cost effective, as they can be moved to different locations in a facility. One hoist can be used for a variety of tasks. Normally two carers are required when hoisting a client with a mobile hoist.[2]

2. Procedures for using mobile hoists for specific moving and handling tasks are described in Section 4 'Techniques for moving and handling people'.

BOX 7.2

Parts of a mobile hoist

- **Boom** (goes up and down)
- **Sling bar**, spreader bar or yoke
- **Legs** (move in and out)
- **Mast** – upright part of hoist
- **Handles** – for manoeuvring the hoist
- **Brakes** – only to be used for storage. Do not use brakes when hoist is in use as the hoist needs to find its own centre of gravity, otherwise it may tip over
- **Emergency stop button** (if hoist is not working, check it is not pushed in)
- **Emergency lower buttons** (you may need extra pressure to come down on older hoists)
- **Weight limit** (SWL)
- **Maintenance alert** – do not use if out of date.

FIGURE 7.16

Example of a mobile hoist

Mobile hoists come in multiple designs. All have central lifting frames with booms and sling bars (also known as spreader bars or yokes) to which the slings are attached using the hooks or clips on the bars. The bases or legs have wheels that allow the hoists to move along the floor. Some have bases that can expand or contract in width to fit around or under commodes, shower chairs, recliners, wheelchairs and beds. Some hoists are foldable or collapsible. Some mobile hoists have vertical lift movements and some have arc movements. Vertical lift movements generally provide a higher lift and can usually be used for assisted walking with walking slings. Nearly all mobile hoists are battery powered, so a routine battery-charging system is required.

BOX 7.3

Using a mobile hoist without training

I was a nurse aide in this rest home. One day the manager wheeled in a hoist and told me to use it to lift the patient who was sitting on a commode and left me to it. So I hoisted a patient complete with commode and all. I didn't have any training on how to use the hoist.

Source: Patient handling trainer

Mobile hoists can have some disadvantages. Carers may need a lot of strength to move mobile hoists, in areas with carpet (especially if the hoists have small wheels), through doorways and in sloping corridors. There needs to be enough space in the room to use a mobile hoist and sometimes furniture can restrict movement. When using mobile hoists over beds, some cannot lift high enough to allow the clients to clear the beds, especially beds with pressure-care mattresses. Some beds may not have enough space beneath to allow the hoist base to get underneath.

Points to note about mobile hoists

While mobile hoists can be versatile, users should note the following specific features and potential limitations.

- Mobile hoists need adequate storage space close to locations where they are used. They require more storage space than ceiling hoists
- Most mobile hoists are powered by batteries that need regular charging. They need a system for routine charging of batteries. If batteries are detachable, it is desirable to have two batteries for each hoist so that one battery is always being charged
- All mobile hoists should have a sticker or certificate with dates for routine checking and servicing. A hoist should not be used if the expiry date on the sticker has passed
- All hoists should be labelled with a SWL. As part of risk assessment, a client's weight should be checked to ensure it is less than the SWL of the hoist, prior to lifting
- Wheel brakes are fitted on most models of mobile hoist. The brakes should not be applied while hoisting a client. Mobile hoists are designed to move while hoisting clients so that the sling bar is over the centre of gravity of the load
- It can be unsafe to use a mobile hoist on a sloping floor or surface where there is a risk that the hoist can tip over
- Not all mobile hoists can lift clients safely from the floor. To do this, the feet or base of the mobile hoist must be designed to allow a floor lift. If this feature is needed, check that the model being considered can do this safely

BOX 7.4

Lifting equipment reduces assaults on carers

Assaults by residents on caregivers in a residential care facility reduced after equipment to lift and transfer residents was introduced and carers were trained how to use the equipment. Residents felt caregivers could be trusted to move them comfortably and safely. Also, the physical separation between the caregiver and the resident through use of the lift, particularly patients with a known history of violence, is likely to have reduced assaults on caregivers when using lifts.

Source: Collins et al, 2004

- Lifting height – not all mobile hoists can lift clients high enough to clear beds, especially if the beds have pressure mattresses
- Some hoists allow for interchangeable spreader bars; others require that only the manufacturers' spreader bars can be used
- Some hoists allow different types of sling to be used, while others require that only the manufacturer's sling for each model of hoist can be used. If several models of mobile hoist are used in a facility, the interchangeably of spreader bars and slings should be considered.

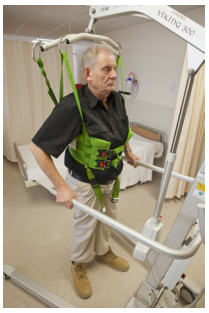
Mobile hoist features and accessories

The following accessories and features are available on some hoists, or can be purchased as optional accessories.

- A hand-held control panel to operate the hoist – it needs to be able to clip on to the upright frame of the hoist
- A walking sling allows a mobile hoist to be used for mobility and rehabilitation (see Figure 7.17)
- Scales to weigh clients are available on some hoists. When fitted as an additional attachment above the sling bar, scales may reduce the lifting height

FIGURE 7.17

Example of a mobile hoist with walking sling and gait training bars



- All electric hoists must have emergency stop buttons and manual release mechanisms to allow clients held by the hoists to be lowered without battery power
- A low-battery-level indicator or warning light is desirable
- The length of the boom to which the spreader bar is attached needs to be considered when hoisting a tall or large client. A longer boom provides more leg room between the sling and the upright frame. However, with a shorter boom the client can sit with both knees on one side of the frame, which reduces the risk of their knees knocking against the frame
- Gait training bars assist with mobility (Figure 7.17) and are useful for turning hoists
- Stretcher attachments (Figure 7.18) enable the immobilisation of potential spinal cord injury clients and are useful in any trauma or suspected injuries after falls. They can also enable the weighing of these clients if they have weigh scale accessories.

FIGURE 7.18

Example of a mobile hoist with a stretcher attachment

Standing hoists

A mobile standing hoist (also called a sit to stand hoist and standing lifter) is a specific type of mobile hoist used to move a client from one seated surface to another, such as from a chair to a toilet. The hoist has a platform or footrest on which the client stands. The client is supported by a sling fitted around their trunk (a special sling known as a 'standaid sling') and by a leg brace or knee block that has strapping to hold the client's legs in place. Standing hoists are suitable for clients who are partially weight bearing and can support most of their own weight while standing.

FIGURE 7.19

Example of standing hoist

FIGURE 7.20

Example of standaid sling

Standing hoists are useful as they allow more access to clients' clothing than sling hoists. For this reason, they are useful for moving clients from one seated position to another and can assist with toileting partially mobile clients. They also have a therapeutic benefit for clients in providing an opportunity to increase weight-bearing tolerance. They should only be used for transporting clients for short distances, such as within a room or to an adjacent bathroom, not for longer distances such as corridors.

Points to note about standing hoists

- It may be easier to use a standing hoist rather than a mobile or overhead hoist for toileting as long as the client has sufficient weight-bearing capacity
- Extra care needs to be taken with clients with specific clinical conditions, such as low muscle tone, osteoporosis, spinal metastasis and difficulty standing with their feet flat
- Standing hoists should have adjustable legs to go under and around chairs and toilets.

Ceiling hoists

Ceiling hoists or ceiling lifts have tracking fastened along the ceiling and are generally a permanent feature built into either a single room or multiple locations in a unit or facility. Some versions of ceiling tracking are designed to be relatively portable; the tracking can be removed when no longer needed. Gantry hoists have the tracking mounted on a mobile frame and can provide a hoist for a single room where, for example, the main use is for transfers to and from a bed.

FIGURE 7.21

Example of a ceiling hoist with a fixed unit

Ceiling hoists have four major advantages over other types of hoist:

- They require less force to move
- Because of their immediate availability, there is a higher likelihood of use when needed
- Floor coverings and uneven surfaces do not affect use
- They have minimal storage space requirements.

However, there are some disadvantages: the use of ceiling hoists is limited to areas with tracking installed; and hoists with fixed ceiling tracking may initially be more expensive to install than providing gantry hoists or mobile hoists.

Ceiling track (and gantry hoist) systems can usually lift over a greater height range from ceiling to floor than mobile hoists. Ceiling track and gantry hoist systems require less space to operate than mobile hoists and should be considered if space is restricted.

The hoist may have a portable hoist unit or motor that can be lifted off the track, or a fixed hoist unit that is permanently attached to the track. Table 7.3 outlines some of the advantages and disadvantages of fixed and portable ceiling hoist units. Electricity to run the hoist unit can be supplied through the track, or by a battery fitted into the hoist unit. Some units are only motorised for lifting clients in slings and not for moving clients along the track. These units require carers to push clients along the track. Other units have motor functions for both lifting clients and moving clients along the track, operated by a remote control.

TABLE 7.3 PORTABLE AND FIXED HOISTS FOR CEILING HOIST SYSTEMS

Portable hoist unit	Fixed hoist unit
Charging facility for hoist unit is usually off the track; may be less accessible	Option of wall-mounted docking unit or on-track charging
Manual handling required to attach unit to track	No manual handling of hoist unit required
Can be moved to other tracks when needed or stored when not needed	Can only be used on track where fitted
Requires additional time and effort to attach the hoist to tracking. This is likely to be a disincentive for staff using the hoist	Staff more likely to use the hoist if it is permanently attached to tracking

Ceiling track systems

For ceiling hoists, there are multiple track systems available. The type of ceiling track system selected will depend on the types of use intended. For single rooms, straight tracking may be the easiest to install. However, its major limitation is that it only allows the lifting and moving of clients in a straight line. Adding curved sections of tracking allows increased coverage, especially in bathrooms (see Figure 7.22).

FIGURE 7.22

Examples of ceiling tracking into a toilet

The most versatile tracking system is a parallel tracking pattern called the 'XY' system, which provides full room coverage. With this system a client can be moved anywhere in the room. The XY system has two straight sections of track on each side of the room, parallel to each other, with another track joining the two. The joining track can slide along the two parallel tracks.

More complex track systems are available for healthcare facilities where transfers between rooms, such as bedroom to toilet, are required. For example, 'gates' (for transit between two adjacent track systems) and 'turntables' (which allow movement from one track to another at track junctions) can also be fitted to increase the versatility of ceiling tracking systems. More information about the installation of ceiling track systems is provided in Section 9 Facility design and upgrading.

Points to note about ceiling hoists

- Ceiling hoists are usually permanent fixtures, so the building structure must be suitable. Some structural considerations could be whether ceiling joists need to be reinforced, and whether doorways need to be altered to accommodate tracking
- Retrofitting is possible for most types of structure and ceiling
- Ceiling tracking can be most cost effective when incorporated into a new building or installed during planned renovations
- All electric hoists must have an emergency stop button and manual release mechanism to allow clients on the hoists to be lowered without battery power/electricity supply
- All ceiling hoist units should have a sticker or certificate with dates for routine checking and servicing. Hoists should not be used after the expiry dates on the stickers
- All hoists and ceiling tracking should be labelled with the SWL. As part of risk assessment prior to lifting, a client's weight must be checked to ensure it is less than the SWL of the hoist and track.

Ceiling hoist features and accessories

The following accessories and features are available on some ceiling hoists or can be purchased as optional accessories:

- Scales to measure a client's weight are available on some hoists
- A low-battery-level indicator or warning light is desirable
- A walking sling allows a ceiling hoist to be used for mobility and rehabilitation.

Gantry hoists

A gantry hoist may be a preferred option where fitting ceiling tracking is too expensive or where a large-capacity hoist is only required for a limited time. The transfer range of gantry hoist systems is limited by the length of the track. Some versions of gantry hoist are semi-portable and can be disassembled and transported by vehicle.

FIGURE 7.23

Gantry hoist

Fixed wall hoists

A fixed wall hoist is a permanent fixture beside a client's bed or in a bathroom (it is sometimes called a bathing hoist), and swings to allow the client to be moved from wheelchair to bath. It can only be used for short transfers, for instance from a bed to a bedside commode chair. The brackets for the swinging hoist frame can be fixed in various locations in a hospital or facility so that the portable hoist can be attached when needed. Fixed wall hoists can be located in small rooms where there is not enough room to use mobile hoists. They also provide an alternative if the building structure does not allow overhead tracks to be installed.

Fixed wall hoists can be useful in nursing and residential homes where hoist use is variable. Brackets can be installed in multiple rooms and the hoists moved around as needed. However, fixed hoists do have some disadvantages. They are usually more expensive than mobile hoists. As the brackets are permanently mounted, positioning must be carefully planned to suit the room layout and transfer needs. Once the hoist brackets have been fitted, the client's bed and other nearby furniture usually need to stay in the same location in order to use the hoist.

Slings

Slings are used to support clients being moved with hoists. The sling is attached to hooks or clips on the hoist spreader bar or yoke to provide support for the client while they are being moved. There are several types of sling available that are made from various materials. Becoming familiar with the multiple types of sling is an essential part of using hoists. Training programmes typically spend some time on teaching the correct use of slings. Accidents that occur during the use of hoists often involve incorrect sling use. Table 7.4 summarises some of the key features of slings.

Choosing the right sling and fitting it correctly improve comfort, dignity and safety for the client. Having a comfortable and secure experience can help to overcome a reluctance to use a hoist, which some clients have. Generally, the more material a sling has the greater the comfort and support it provides.

TABLE 7.4 SLING FEATURES AND FUNCTIONS

Sling feature	Sling type	Functions
Fabric or material	Synthetic	Most common type of sling for general purpose use
	Mesh	Used for bathing
	Sheepskin or quilt lined	For clients with fragile skin or increased pain when being hoisted
Single or multiple client use	Disposable	For use with one client only. Usually has a 'Do not use' tag that becomes visible when washed
	Washable	Can be used and laundered multiple times
Shapes and functions	Divided leg sling	Most common type for general lifting
	Hammock sling	Used for lifting clients who require additional support
	Toileting or access sling	Designed for toilet use or to allow access to clothing; has less fabric for support
	Walking sling	Supports a client when walking

Points to note about slings

- **Compatibility of slings with hoists**: Some hoists are designed to be used with only a specific type of sling. Other hoists can use multiple types of sling. This point should be checked in the hoist instruction manual or with the supplier. When ordering new slings or hoists it is important to know whether the new versions will be compatible or interchangeable with any existing slings or hoists. If they are not compatible, more work will be required to maintain and service different sling and hoist systems. It is possible to use multiple brands of sling on some hoists, but this requires a suitably qualified person to document compatibility, preferably with agreement from the suppliers.
- **Reusable and disposable slings**: Most facilities have reusable slings that are washed before use with another client. However, if heavy soiling is likely or infection risk is high, disposable slings may be preferred. Disposable slings are for one-client use only and should be disposed of when soiled or no longer needed for the client. They must not be washed or cleaned then reused.

FIGURE 7.24

Example of labels

- **Laundry services**: There are several ways to launder slings and each facility needs to have a system in place. These systems include: the facility owns the slings and they are cleaned by its own laundry; the facility owns the slings and its laundry contractor cleans them as an added service; and the contract laundry service provides the slings in agreement (e.g. types, numbers) with the

facility and cleans them. Note that some external laundering services provide specific brands of sling only.

- **Standard labelling**: Each sling should be labelled with the following details:
  - The name of the sling or its model number
  - The names or types of hoist for which the sling is designed
  - The size of the sling
  - The SWL of the sling
  - Any special washing, drying and sterilisation instructions
  - The manufacturer's name or logo, or registered trade name.
- **Checking slings**: All slings should be checked before they are used:
  - Check all loops at connection points for signs of fraying and loose stitching
  - Check entire sling body for loose stitching, rips, holes and bleach staining
  - Check for signs of fabric weakening, such as heat damage, distorted fabric and staining
  - Check all buckles
  - Size, shape and fitting of slings.

FIGURE 7.25

Standard slings

FIGURE 7.26

Fitting of sling so lower loops cross between client's legs

Slings are available in multiple sizes to suit the weights and body sizes of clients. Sling sizes can range from very small to extra large. The sling size will be shown on a label attached to the sling. Most slings are now colour coded; the size indicated by each colour should be shown on a sticker attached to the hoist that will be used with the sling. Not all manufacturers use the same colours to indicate sling sizes, so this should be noted if using slings with different hoists. Sling sizes may vary between manufacturers, so carers need to measure the sling for each client to ensure the correct size is used. When ordering slings, ensure each sling is labelled with its size and SWL, which should be in kilograms for use in New Zealand. If the sling is too large, there is a risk of the client slipping out of the sling. A sling that is too small can

result in the spreader bar coming too close to the client's face, can be tight in the crotch and cause discomfort, or may not provide enough support for the back.

Slings have loops or straps that are attached to spreader bars on hoists. Sometimes these straps are adjustable and can be set for a specific client by being marked with a piece of wool or a pen to identify the setting for the client. This means they can be hoisted in the same position with different carers.

Table 7.5 summarises the more common types of sling and these are described in more detail below. There are other types of sling, such as amputee slings, that require specialist knowledge for use. Clients with hip replacements, morbid obesity, bilateral amputations or other complications may require specialised transfer assessments and specialty slings.

TABLE 7.5 TYPES OF SLING AND PURPOSES

Type of sling	Purpose	Limitations and comments
Standard or divided leg sling (universal sling)	A U-shaped sling for general lifting	Not suitable for toileting or clients who can only be transferred in a lying position
Access or toilet sling (hygiene sling)	Allows more access to clothing for toileting	Client needs some upper limb and truck control
Hammock sling	A rectangular sling that supports the body over a large area	More difficult to put on and take off the client than a standard sling – no access to client's body for washing
Repositioning sling	A full-body sling used for turning or positioning in bed	A specialised sling for clients who need turning regularly
Stretcher	Allows movement of a client in a lying position	The hoist must be designed to be used with a stretcher
Walking harness sling	Allows support for a client while walking	Mainly used with ceiling hoists or mobile hoists where the boom can be raised high enough

Standard or divided leg sling

FIGURE 7.27

Standard sling

This is a U-shaped sling and may or may not have upper back and head support. Its advantages are that:

- It is easy to put on when the client is sitting or lying
- It covers a large surface area of the client's body and is more comfortable than a toilet sling
- When the leg bands are positioned correctly, there is less likelihood of the client slipping or falling out of the sling
- The standard sling can be used to pick up a client off the floor.

Some disadvantages are that standard slings may not be as suitable for bathing and toileting as the access or toilet sling. The leg bands or straps can be uncomfortable for the client if they are not positioned correctly or if the client is left in the sling for too long.

Access or toilet sling (hygiene sling)

Toilet slings provide split leg support and upper-mid-back support. Some slings come with waist support instead of upper-mid-back support. The advantages of this sling are that it is useful for toileting if the client has some upper limb and trunk control, and it can be put on a client in most positions. It provides good access for washing as well as toileting. Some clients may be able to put this sling on independently.

Toilet slings have disadvantages. They do not provide as much support as standard slings, so they should only be used for a short time. A client with reduced muscle tone has an increased risk of slipping through the sling. The client must be able to cooperate fully and not raise their arms over their head.

Hammock sling

This is a rectangular sling. Some have commode openings. It is comfortable to use as the client's body is supported over a larger area than in a standard sling. There is less likelihood of discomfort or damage to the client's skin. It is suitable for lifting the client off the floor. Some disadvantages are that it can be difficult to put on and take off when the client is seated or lying in bed, and there is no access to the client's body for washing, even if the sling has a commode opening.

Repositioning sling

This is a specialised full-body-length sling used for turning or positioning in bed clients who need to be turned several times a day. Repositioning slings are usually left under the client in their bed. If leaving a sling under a client, care should be taken to remove wrinkles from the material and tuck the straps under the mattress. Flat bed sheets, soaker pads and other items can be placed on top of a repositioning sling to absorb moisture and improve comfort.

FIGURE 7.28

Repositioning sling

Stretcher attachment

A stretcher or 'flatlifter' enables the movement of a client in a lying position. The stretcher is a body-length rigid scoop frame, or a series of flexible batons that are positioned under the client and attached to a frame that is assembled around the client.

Some stretcher attachments are made of special material designed for X-rays. Stretcher attachments are useful for spinal and post-operative orthopaedic care as the clients can be immobilised during transfers. Some hoists offer three-way client angle adjustments for the stretcher sling: flat, head down (Trendelenburg) and feet down. Not all hoists can accommodate stretcher attachments.

FIGURE 7.29

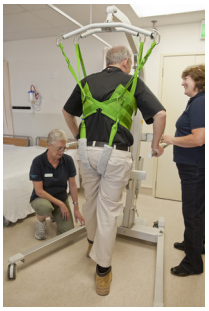
Example of a stretcher sling

Walking harness sling

Walking harness slings are designed to provide complete or partial support for clients who can walk. These slings can be used with ceiling hoists, but are also available with some mobile hoists where the booms can be raised high enough for clients to stand directly underneath the sling bars.

FIGURE 7.30

Mobile hoist with a walking harness sling



Stretchers

Stretchers are used to transport clients in lying position between locations within a facility. They come in many shapes and sizes. All hospital stretchers have wheels or castors and they may be height adjustable. Some stretchers are battery operated with similar functions to profiling

beds. Stretchers are a standard item of equipment in all hospitals and healthcare facilities and services. Specialist stretchers include those designed specifically for ambulance use and bariatric stretchers for morbidly obese clients.

Wheelchairs

FIGURE 7.31

Wheelchair

Wheelchairs are another standard item for equipment in hospitals and healthcare facilities. Different versions are available. Some are designed to provide clients with independent mobility and have features such as being foldable for transport in cars. Others are designed only for assisted mobility where carers are required. A point to note is that design features that are important for individual use in the community, such as collapsible footrests and protruding parts, may increase the likelihood of injury, especially if used regularly by clients. For such clients, purpose-built transfer and transport chairs may present fewer contact hazards than wheelchairs designed for independent mobility. Bariatric chairs should have electric motors.

Standing and pivoting aids (non-electric)

There are several non-electric standing transfer aids and trolleys for clients who can stand but have difficulty walking. These aids or pivoting devices can be used with clients who can stand but who are unable to walk without assistance.

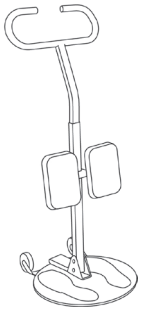
Standing transfer trolley

A standing transfer trolley enables a carer to transfer a client from a chair or a wheelchair to a toilet. It is intended for people who can stand but have difficulty walking. The client stands on the footrest and holds the handlebar for support. Some standing transfer trolleys have seats that can drop down for clients to sit on during transfers. The trolleys are then moved by carers to the locations required.

The standing trolley is useful for rehabilitation. It is easy to use and encourages some mobility. It provides an option between mobilising with some assistance and a sit to stand hoist.

FIGURE 7.32

Framed turning platform



Framed turning platform

A framed turning platform enables a client to stand during a move from seat to seat. The framed turning platform may have cushioned knee pads for the client to brace against during the move. The client puts their feet on the turntable and pulls themselves up to standing using the

handholds. The carer then turns the platform and the client sits down in the new position. The client's feet must be placed centrally on the turntable or framed turning platform so that the rotation through the transfer is smooth. Care is needed as these items can rotate unpredictably if not controlled. The turning platform should have a foot-operated brake that is engaged when the carer steps down on the outer edge of the turntable.

Shower and bath equipment

There are multiple types of equipment to assist clients to move in showers and baths. Two types of shower equipment are described here.

Wheeled shower chairs

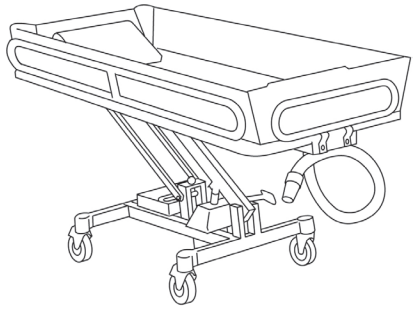
A wheeled shower chair can be used to transport a client to and from a shower and can be used in the shower while the client remains seated. Wheeled shower chairs may have backrests, armrests and footrests that can be removed or shifted. Some also have tilting functions to allow easier showering. Wheeled shower chairs are usually made from perforated plastic to allow water to drain from the seat. Powered or battery-operated shower chairs are preferred, as they reduce the risk in positioning clients during the process.

Mobile shower trolleys

Mobile shower trolleys are full-body length so that a client can be showered in a lying position. This type of trolley can also be used as a changing table.

FIGURE 7.33

Mobile shower trolley



Shower trolleys tend to be used in open shower areas rather than in shower cubicles, as they are usually too long to fit in cubicles. Sliding equipment can be used to transfer a client onto a shower trolley, or the client can be hoisted. Many trolleys are height adjustable so that they can be positioned at the correct working heights for carers.

Emergency equipment

There is a range of equipment available for emergencies. Within facilities, emergency equipment may be used for the rapid evacuation of immobile clients to an outside location, such as during a fire or earthquake. Ambulances and other emergency service vehicles generally carry multiple types of specialist emergency equipment for moving people.

Most emergency services have standard 'pick up and carry' types of stretcher. These can be used in emergencies to move people quickly to other locations. These stretchers usually fold into small packages for compact storage. Other examples of emergency equipment are described below.

Slide pads and sheets

FIGURE 7.34

Slide pad

Slide pads and sheets are an option for emergency evacuation equipment for immobile clients. Slide pads are similar to small mattresses; they have straps to secure clients and slippery surfaces underneath so they can be dragged along floors and down stairs with clients lying down. Emergency slide sheets are fitted underneath mattresses. They have straps that can be fastened over mattresses to secure clients to the mattresses, and slippery surfaces so the sheets with clients and mattresses can be dragged along the floor.

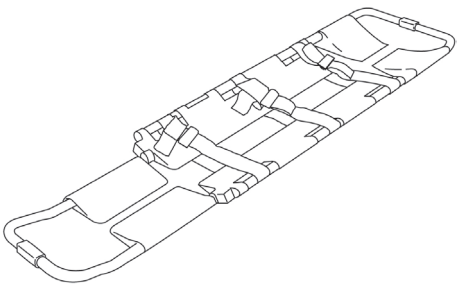
Backboards or spine boards

A backboard or spine board is used to immobilise and transport a client with a suspected spinal injury in an emergency. It is a rigid, full-body-length board to which the client is strapped. These boards may be made from sheet aluminium with a tubular aluminium frame, wood with a special waterproof coating, or coated plywood board.

Scoop stretchers

FIGURE 7.35

Scoop stretcher



A scoop stretcher is a lightweight, concave stretcher that separates into two sections along its length (Figure 7.35). It can be placed under a client from each side without the need to roll or lift them. The concave surface supports the client, minimising lateral movement and reducing the risk of further injury. The client can then be carried to a location where further medical treatment can be administered.

The scoop stretcher may have a narrow foot-end frame for handling in confined areas. It folds up for storage and has locking length-adjustment latches that snap into place. Some companies are now producing combined boards ('combi boards') that include the features of both spine boards and scoop stretchers.

Combination stretchers/chairs and evacuation chairs

A combination stretcher and carry chair is an option for transporting clients in an emergency (Figure 7.36). It can be configured for use as a wheeled chair, a stair chair or a flat stretcher.

Another option is an emergency evacuation chair, which can be used for transporting clients down stairs (Figure 7.37).

FIGURE 7.36

Combination stretcher/chair

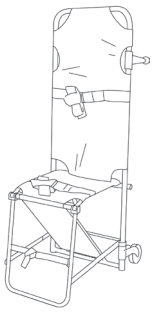


FIGURE 7.37

Emergency evacuation chair

OTHER TYPES OF EQUIPMENT AND AIDS

There are numerous types of equipment and mobility aid other than the ones described in earlier sections. If a client is able to bear some of their own weight for a short period of time, there are various devices available to assist in transfers between bed, chair and toilet. Some of these aids can be used to help clients move short distances, or to stand in a supported manner. They range from simple to more technical, such as walkers, transfer belts and stand to sit lifts. The Ministry of Health and the Accident Compensation Corporation (ACC) both publish lists of approved equipment for people with disabilities and limited mobility (see www.accessable.co.nz). Note that these lists cover a very limited range of the moving and handling equipment that is available.

References and resources

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WorkSafeBC. (2006). *Transfer Assist Devices for Safer Handling of Patients: A guide for selection and safe use*. Retrieved 9 September 2010 from

www.worksafebc.com/publications/health_and_safety/by_topic/health_care/default.asp.

Web resources: equipment[3]

Biomedical Services NZ Ltd

www.biomed.co.nz/medical-device-legislations.html

Safe Lifting Portal

www.safeliftingportal.com/patientlifts/index.html

WorkSafeBC: Workers' Compensation Board of British Columbia, Canada

www.worksafebc.com/publications/health_and_safety/by_topic/health_care/default.asp

3. Note: If the URLs shown do not work, do a search on the organisation title. Equipment manufacturers often sponsor or provide equipment websites. ACC and the Guidelines' authors do not specifically endorse any manufacturer.

SECTION 8

Equipment management

Contents

8.1 Overview of equipment management

The primary purpose of having an equipment maintenance system is to ensure the safety of clients and carers during use by making sure all moving and handling equipment is fit for use and kept in efficient working order. The useful working life of equipment can be extended through regular scheduled checks and maintenance. This section provides a set of guidelines for equipment maintenance that can be adapted as required. This section on equipment maintenance complements descriptions of the types of moving and handling equipment covered in Section 7.

Equipment maintenance is an organisational responsibility that has implications for engineering, maintenance, procurement, finance and the carers who use the equipment. Client and carer safety depends on the adequate maintenance of moving and handling equipment. Proper equipment maintenance is not only an asset management function, but also a central part of maintaining a culture of safety in an organisation.

The day-to-day management and monitoring of moving and handling equipment may be the responsibility of a manager in facilities, health and safety, engineering or maintenance. Maintenance responsibilities may also be delegated to specific people. Within management systems, there should be clearly negotiated areas of responsibility about who monitors the equipment and its use, who is responsible for carrying out routine checks and maintenance, and who pays for any repair and maintenance costs.

All procurement, maintenance and disposals of mechanical and electrical equipment should be compliant with the Standards New Zealand requirements in AS/NZS 3551:2004 *Technical management programs for medical devices* and with AS/NZS 2500:2004 *Guide to the safe use of electricity in patient care*. These standards cover procurement, the acceptance process, safety and performance testing and disposal.[1] Moving and handling equipment is used in multiple locations in workplaces and homes. Establishing who has ownership of and responsibility for checking and servicing equipment is an important factor in developing a maintenance system.

1. These standards were being revised in 2011. Check for updates.

8.2 Equipment assessment and procurement

Given the wide range of types of equipment and the need to invest time in assessing equipment prior to purchase, it is important for healthcare facilities to provide effective procurement systems for purchasing equipment for moving and handling people.

BOX 8.1

Collaboration for equipment procurement

A collaborative effort involving the procurement committee, staff who will use the equipment, client feedback while trialling equipment, and information from suppliers will usually result in well thoughtout procurement decisions.

Where there is an existing procurement system, such as a procurement committee, the committee should include the person responsible for moving and handling in the organisation. They can provide the knowledge required to make purchases based on clinical needs rather than purely financial factors. It is easy for potential purchasers to be confused by the vast array of client moving and handling equipment with very sophisticated technical features. Purchasers may not be knowledgeable enough to make clinical choices, so should seek expert advice. Organising a priority-based clinical needs assessment tool with the moving and handling person, the carers who are to use the equipment and the procurement section will help to ensure a robust selection process that follows due diligence without compromising clinical requirements.

BOX 8.2

Some key points for equipment procurement

- There are multiple companies in New Zealand that supply equipment for moving and handling people
- There have been major developments in moving and handling equipment in the past 10 years, and equipment technology is developing rapidly
- Robust equipment with advanced features and a range of accessories is generally more expensive but may be more cost effective for long-term use
- When acquiring new equipment, give due consideration to possible future developments for facility use, such as ceiling hoists
- Adequate needs assessments are essential to ensure efficient purchasing.
- Many types of mobile equipment are powered by batteries, so easy access to battery charging is important.

Suppliers are often very helpful in providing information about their own equipment, but remember they are there to make sales. Your organisation should have a robust procurement procedure that avoids costly purchases of equipment that may not

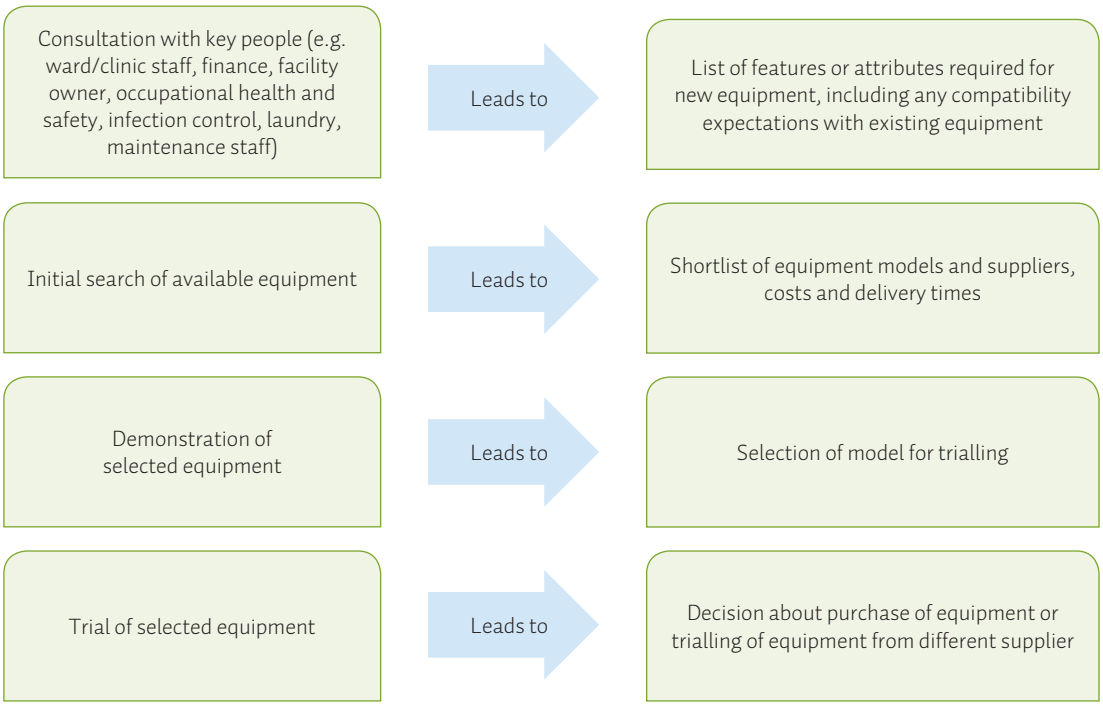
function as intended. In small or limited-budget organisations, staff members can be allocated responsibility for becoming familiar with particular types of equipment. For example, a physiotherapy assistant could look after wheelchairs and other staff could look after commode chairs.

Equipment procurement systems

When selecting equipment for trial, hire or purchase, there are some general considerations to bear in mind. If the proposed equipment order is large or expensive, it is worth putting additional work into the initial consultation and assessment process to increase the likelihood that the equipment will be suitable for its intended purpose.

Figure 8.1 sets out common stages that can be used in preparation for making large equipment orders, especially where a new type or brand of equipment is being purchased. For small orders, or routine replacements of equipment, some parts of the procurement process might be reduced or omitted. However, consultation and initial assessment are always important.

FIGURE 8.1 STAGES FOR EQUIPMENT PROCUREMENT



Consultation

When purchasing equipment, especially during the design or redesign of the work environment, consulting people whose jobs will be affected by the new equipment is essential. The following list provides examples of the people and groups with whom consultation may be useful.

- **Moving and handling coordinator**: Give the coordinator information about the locations, carers and clients using the equipment so they can provide advice on what type of equipment would suit their needs and requirements, such as equipment storage, facility design and maintenance
- **Users of the equipment**: Ask the end users (not usually the manager) what they need the equipment for, what features are most important to them and whether any problems or past history with equipment could serve as lessons learned. Involve them in the equipment selection process and trialling
- **Colleagues or contacts in other health services** and other facilities who have bought the same equipment, have used the same suppliers, or have the same needs and could share the process, making a large resource pool and enabling better bargaining power with suppliers
- **Suppliers of equipment**: In addition to equipment specifications and prices, ask suppliers to provide contact details of other purchasers so they can be contacted for their comments and possible site visits
- **Maintenance and laundry managers** or staff if they will be involved in servicing and maintaining the new equipment
- **Infection control**: For the cleaning requirements of any equipment purchased
- **CPR (cardio-pulmonary resuscitation) staff or committees**: To ensure equipment compatibility with their needs. For example, when purchasing beds, the CPR function in an acute setting is vital
- **Fire officer**: For comments about emergency evacuation equipment or procedures and also to ensure that the installation and use of equipment do not block fire doors or essential exits.

An outcome of the consultation process will be the development of criteria for desired features of the equipment to be purchased.

BOX 8.3

Consultation on electric beds

When our organisation was in the process of buying new electric beds, the procurement people asked for my advice. One of the things I made sure of was these beds should have a manual emergency release – pull a lever and the head of the bed comes down immediately.

Because of my background as a nurse, I know how important the emergency release is when a patient has a cardiac arrest (heart attack) and needs resuscitation immediately. Every second is valuable. If I didn't have a nursing background, I would have recommended that the procurement committee get someone with appropriate nursing experience to be on the committee.

Source: Manual handling coordinator

Initial assessment

The selection process should start with a needs assessment of the task, area and client group. The purchasing team can then contact suppliers and identify all equipment models that perform the desired applications in a reasonable and safe manner. Literature for the specified equipment types should then be requested from each identified supplier or distributor.

Following an initial review of the product literature to eliminate those products that would not be suitable for the intended application, te team can include information on any previously performed or ongoing field- and laboratory-based equipment evaluations as part of the tender process. If the manufacturer has performed the equipment evaluation, not an outside research facility, the evaluation might be biased or incomplete. Conduct a web search for user evaluations and comments on the equipment, and a literature search (for both peer-reviewed and other print media sources, such as industry magazines), to find out more information for specific equipment models.

Another important point for consideration is the adaptability of the equipment being acquired. Decisions should include not only the price or its impressive features. Among the questions that should be asked during the initial assessment process are:

- **Future proofing**: Will the equipment become obsolete if the manufacturer stops providing spare parts, or can generic spare parts be obtained? Will the equipment also serve any changes in the current service or client condition?
- **Compatibility**: Will it be compatible with existing equipment or any procured later?

The following general criteria may be relevant to an equipment assessment:

- **Appropriateness**: The equipment must be 'fit for purpose' and be able to carry out the tasks for which it is intended
- **Accessibility and storage**: Does the building layout in the wards or units for which the equipment is being purchased allow the equipment to be used and charged easily? Can the equipment be stored so it is readily available in the areas to be used? It is generally recommended that storage areas be within 20 metres of handling areas and within 10m of nurse stations
- **Compatibility**: Will the new equipment be used in conjunction with any existing equipment? How will the new equipment integrate with existing equipment and overall clinical systems?
- **Infection control**: Items must be able to be cleaned as recommended by the infection control requirements, particularly when there is a likelihood of direct exposure to skin or body fluids
- **Value for money**: What is the expected useful life of the equipment?

- **Servicing**: Will the equipment require routine servicing? What is the cost of servicing and who will provide it? What qualifications are required to maintain the equipment?
- **Training requirements**: Will the equipment require additional training for staff using it? Will the supplier provide initial training? Will training for the equipment be incorporated in the ongoing training programme for moving and handling people?
- **Funding**: Has the funding allocated included the costs of the purchase process and subsequent training?

Demonstration of selected equipment

Once a shortlist of suppliers has been confirmed, request a demonstration of the equipment, preferably at the facility where it will be used. Invite staff and managers from wards or units where the equipment will be used. At the beginning of the demonstration, give all attendees evaluation forms and ask them to fill them in before they leave. Where possible bring all options into the same room at the same time to allow for comparison.

Trial of selected equipment

Once the top contender has been decided, a useful strategy for large or complex items of equipment, such as mobile hoists, is to ask for a trial of the equipment for a specified period. This allows a more extensive assessment of the suitability of the equipment than is possible with the earlier assessment stages. During the trial, ask for documented feedback. This will assist with information about the equipment's performance and give the participating carers ownership and inclusion in the process.

Hiring equipment

For some facilities, hiring or leasing equipment may be more cost effective than purchasing equipment. If the equipment needed can be hired or leased initially, this will allow a more extensive assessment of the equipment suitability, and it could reduce the financial outlay. Ensure that the hire agreement includes information about the ongoing responsibilities for cleaning and maintenance of the equipment. Allocating responsibility for any replacements following damage or breakdown is also important, along with expected timeframes and any associated costs.

8.3 Equipment register

One of the management tools often used in an equipment maintenance system is an equipment register. This register can be in the form of a logbook, spreadsheet or customised asset management software. Whatever form it takes, it should allow regular monitoring of essential information regarding equipment location, use and maintenance. Decisions about who makes purchasing or procurement decisions, when equipment should be replaced, and how obsolete equipment will be disposed of, are management planning roles.

It is important for all organisations that have more than a few items of equipment to develop and maintain equipment registers. Following confirmation of purchase and delivery to a facility, all equipment items should be given a unique number for entry into the register. In large organisations, the equipment register may be extensive and include a wide range of types of equipment. If there is a combined register of equipment for different purposes, moving and handling equipment should be assigned a specific category, so that all moving and handling equipment can be monitored as a single group. In small facilities a simpler system may be used. Items purchased in large numbers, such as slide sheets and slings, may be entered as groups in the equipment register.

To establish an equipment register it is necessary to develop a list of all moving and handling equipment held by the organisation or facility. Appendix 8.1 shows examples of specific information for an equipment register. The data fields shown in the Appendix table can be reviewed for inclusion in a facility equipment register.

BOX 8.4

Standardisation of equipment storage procedures

Staff rotation between different wards, sections and units is common in many facilities. Standardising equipment procedures and storage for regularly used items will assist staff in locating and using them. For example, slide sheets with loops attached to them could be hung beside clients' beds after allocation, throughout a hospital or residential home, as a standard procedure.

The equipment register is most flexible when created using specialised software. For small organisations with few items of equipment, the register could be developed using existing spreadsheet or database software. Large organisations, where the equipment register contains thousands of items, will most likely acquire or develop customised software. In these organisations, the registers will need to be accessed and updated by multiple users.

Equipment items to enter into the register as a priority should be those that are electrically operated, require scheduled servicing and are used in multiple wards or units. For moving and handling equipment, this includes mobile hoists, ceiling hoists, sit to stand hoists and electric beds. As well as being used to monitor servicing and maintenance requirements, an equipment register is useful for keeping track of the location of equipment and for inventory control for items such as slide sheets and hoist slings.

8.4 Equipment storage

The storage areas and locations required for equipment will depend on the layout of the unit or facility, and on the type and amount of client handling equipment provided.

Equipment should be stored near where it is most used. It should also be readily accessible to staff (i.e. there should not be other things piled on top of it or blocking access to it). Items of equipment used together should also be stored together. For example, slings, mobile hoists and spare hoist batteries should be stored together. Transfer boards should have slide sheets stored with them for ease of use. Equipment that is battery operated, such as mobile hoists and standing hoists, may need storing close to a power point so that the batteries can be charged.

Equipment storage should be organised so that people who use the equipment most often can access it easily. Specific things to consider when planning storage areas are:

- Store items together that are used together (e.g. mobile hoists and slings)
- Slide sheets that are in use should be stored beside clients' beds, either on hooks or in specified locations or containers
- The storage of ceiling hoists should be designed at the time they are installed
- The storage of large items (e.g. mobile hoists, sit to stand hoists) should not block access to small items
- Storage areas need to be located in the ward or unit where they will be used, preferably within 20m of handling areas and within 10m of nurse stations
- Storage areas should not block or reduce access ways
- Storage doorways need to be at least 1,500mm wide
- The useable corridor width between storage areas and handling areas where the equipment will be used should be at least 1,500mm.

BOX 8.5

Mobile hoist access and storage

We keep our mobile hoist in the corridor during the busy periods. It is not ideal but it is easily accessible for staff, and it wasn't getting in anybody's way. Our new manager came along and instructed staff to store the hoist out of sight because it made the place look untidy. He should have asked why it was in the corridor in the first place. The hoist is in constant use during peak hours. It has to be accessible to staff when it's needed otherwise they don't use it, especially as our storage room is a bit out of the way.

Source: Health worker, aged-care facility

8.5 Equipment maintenance

The purpose of maintenance is to ensure that equipment can be operated as intended. Moving and handling equipment ranges from low complexity (such as slide sheets and walkers), through medium complexity (wheelchairs) to sophisticated hoists and electric beds. The maintenance system needed for equipment will be related to its complexity. Maintenance for many types of equipment will typically cover three types of check:

- Visual checks or assessments prior to each use
- More extensive periodic checks
- Scheduled service checks that are carried out by authorised people.

TABLE 8.2 EQUIPMENT TYPES AND MAINTENANCE TASKS

Equipment category	Specific types of equipment	Examples of maintenance tasks
Electrical and mechanical equipment	Mobile hoists Ceiling hoists Electric beds Wheelchairs	Load testing Visual check for any obvious signs of wear and tear and damage Scheduled maintenance list Lubrication and adjustment Check mains supply electric cords Battery check Tilt testing
Fabric transfer aids	Hoist slings Slide sheets	Visual check for frayed and torn sections Laundry system for multiple-use slide sheets and slings Disposal system for 'use with one client only' slide sheets and slings
Other transfer aids	Transfer boards, walking frames	Visual inspection for damage

Where an organisation owns equipment that is on loan to clients, such equipment should be included in the organisation's maintenance programme unless it comes to some other arrangement with the client. For community or home care, moving and handling equipment may be privately owned by a client or their family. Although the owner of the equipment has responsibility for its servicing and maintenance, the carer or other user has a responsibility to carry out a visual check of the equipment prior to each use. Box 8.6 gives an account of an incident that highlights why proper equipment maintenance is essential.

Visual checks prior to use

Prior to using any equipment the carer, or staff person in charge, should carry out a visual check of the equipment. Equipment should not be used if there is any indication that it may be faulty or not safe to use. Fabric handling aids, such as slide sheets and hoist slings, should be checked for tears, loose stitching, soiling and dampness.

Visual checks of electrically operated equipment and equipment with moving parts may include the following:

- The equipment has a current certificate of fitness where relevant
- The designated safe working load (SWL) is shown on the equipment and the weight of the person being lifted does not exceed the SWL
- All parts and accessories needed to operate the equipment are present
- The wheels move freely
- The brakes work
- The battery has sufficient charge and the location of a spare battery is known
- The handset (remote control) works
- In relation to electrical wiring, there are no bare wires or damage to sockets
- There are no visible signs of damage to the equipment
- There is no visible soiling, contamination or leakage.

Periodic checks

Periodic checks are those that are more extensive than visual checks prior to use but not as extensive as scheduled maintenance checks. They may be carried out every few months at the direction of the equipment manager for the wards or units where the equipment is used. Equipment may also need to be cleaned, decontaminated and dried in accordance with current infection control practices and the manufacturers' instructions.

Periodic checks also cover disposable items such as slide sheets that are supplied and cleaned by a contractor. The contract should stipulate which party is responsible for quality control and maintenance checks to ensure that the equipment is supplied ready to use.

Scheduled maintenance checks

Electrically operated equipment and equipment with moving parts, such as hoists and wheelchairs, should be examined and serviced at scheduled intervals by competent people. The frequency of scheduled maintenance should be consistent with the relevant New Zealand standard[2], the manufacturers' recommendations and how often the equipment is used.

2. AS/NZS 3760:2010 *In-service safety inspection and testing of electrical equipment.*

Routine maintenance for mechanical or electrically operated equipment is likely to require the following tasks:

- Check for wear, tear and defects
- Lubrication where needed
- Adjustments to the equipment
- Battery capacity for equipment with rechargeable batteries
- Replace worn out and damaged parts
- Replace parts (which have use-by dates) before expiry dates
- Cleaning and decontamination (if needed)
- Fitness certificates with expiry dates are updated
- Updating of the service schedule in equipment register.

BOX 8.6

The wheels fall off

As a woman was pushed down the road in a wheelchair, a wheel came off unexpectedly. The woman fell into the path of oncoming traffic. Although she was fortunate to survive the accident unscathed, it had the potential to cause serious harm to her and her carer. The wheelchair was on loan from the local District Health Board. The wheelchair had not been serviced or maintained prior to the accident.

Source: District health board employee's account of an actual event

For equipment such as hoists it is recommended that an examination scheme be part of scheduled maintenance. An examination scheme involves a checklist and specific testing requirements carried out as part of scheduled maintenance checks. The examination scheme should be designed to fit the operating conditions of a specific type of equipment, and:

- Should identify the parts of the equipment to be examined thoroughly
- Can cover a number of similar items subject to the same operating conditions and similar levels of use
- Can be drawn up by the user, owner, manufacturer or some other person, as long as they have the necessary competence
- Should be reviewed regularly, following each examination and after any event that may alter the risks associated with the equipment.[3]

3. Adapted from Health and Safety Executive (UK), 2008.

8.6 Replacing and upgrading equipment

Organisations should develop policies and assessment criteria related to replacing and upgrading moving and handling equipment. These should include purchasing and leasing new equipment to replace obsolete items and replacing worn and damaged equipment, or parts such as slide sheets, slings, batteries and motors on hoists.

Replacing obsolete equipment with new equipment should be done after an assessment by a competent person (such as an equipment coordinator) and consultation with staff using the equipment. The replacement and upgrading of equipment could also be discussed with suppliers before the equipment is purchased. Check with suppliers regarding the availability of parts and the costs of replacement or upgrading.

8.7 Disposing of equipment

When equipment becomes obsolete, is not suitable for use for a variety of reasons (damaged, can be used but parts need replacing, making it cheaper to buy new equipment, etc) or is surplus to requirements, there should be a way to dispose of it.

Where possible, recycle equipment by giving it to other organisations or individuals in the community who can make use of it as long as it is safe to do so; otherwise it must be destroyed. The recipient must be informed of what needs to be carried with the equipment (e.g. replace a part) before it can be used again, if such action is required before use. Equipment marked for disposal can also be used as a source of spare parts.

For equipment that cannot be repaired and reused, such as slings and slide sheets, a disposal system is needed. Such equipment should be disposed of as recommended by the manufacturers. Check with the suppliers or manufacturers on how 'dead' batteries can be disposed of safely. Most batteries contain toxic materials and should not be sent to landfills.

References and resources

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Health and Safety Executive (UK). (2008). *Thorough Examination of Lifting Equipment*. (Leaflet INDG422.) www.hse.gov.uk.

Standards New Zealand, AS/NZS 3551:2004 *Technical management programs for medical devices*

See www.standards.co.nz.

Standards New Zealand, AS/NZS 3760:2010 *In-service safety inspection and testing of electrical equipment*. See www.standards.co.nz.

United Kingdom legislative standards on equipment maintenance (*The Provision and Use of Work Equipment Regulations 1998*). www.legislation.gov.uk/uksi/1998/2306/contents/made.

Appendix 8.1 Information for inclusion in an equipment register

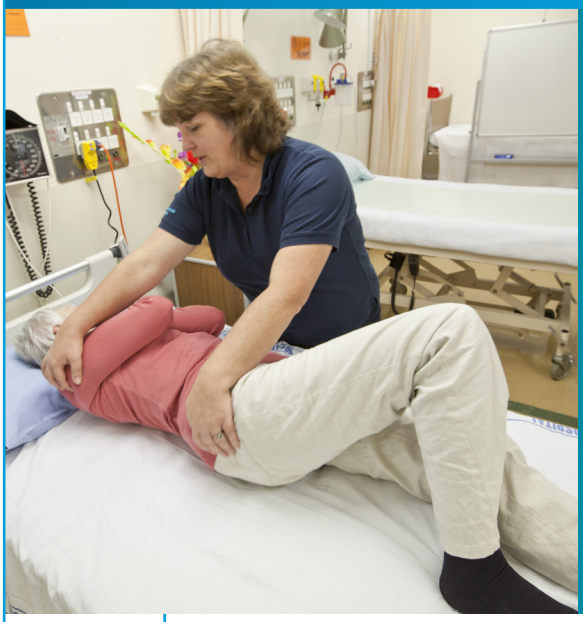
Data field in register	Purpose and comments
Equipment type	e.g. ceiling hoist, mobile hoist, wheelchair
Brand or model	Manufacturer's name and model details
Supplier	Name and contact details of company supplying equipment
Acquisition date	Date purchased or leased (use delivery date to facility)
Serial number	Manufacturer's serial number (if relevant)
Identification number	A unique number supplied by owning organisation (if relevant)
Equipment description	Details of equipment item and any accessories so they can be easily identified (e.g. photo, diagram or written description) and accompanying accessories (e.g. handheld remote control, spare battery)
SWL	Safe working load in kilograms (if relevant)
Warranty	Period of supplier warranty and warranty expiry date (if relevant)
Expected working life	Expected working life of equipment before it needs replacement
Post-purchase check	Person responsible for commissioning equipment, checking it prior to use and ensuring any required labels or stickers (such as SWLs and expiry dates) are present and clearly visible on the equipment
Location	Usual location in organisation and any special storage details (e.g. access to battery charging, slings located in same area as hoists)
Routine servicing	Details of routine servicing needed (e.g. battery charging for hoists, laundry service for slide sheets and slings)
Responsibility for equipment	Name of manager or position responsible for equipment and its allocation to users
Available for loan	Details about whether equipment can be used in other units or loaned to external users
Service schedule	Service period (e.g. six months, 12 months)
Specific service details	Replacement date for specific parts (e.g. batteries) or expiry date after which the equipment cannot be used without a service check
Service provider	Name of person or unit responsible for servicing or name of provider (if externally serviced)
Date of service	Date of most recent servicing
Servicing comments	Specific comments made about the equipment by person doing servicing
Servicing comments	Specific comments made about the equipment by person doing servicing
Specific service requests	Note staff names, dates and types of request for specific requests for servicing or assessments of equipment
Incidents involving the equipment	Details of any incidents (e.g. accidents, near misses) involving equipment, details of equipment failures or design faults and details of any follow-up action needed or taken

Continued ...

Data field in register	Purpose and comments
General comments	Comments from users related to the design and usefulness of the equipment or the specific model – this information may be useful for future purchasing decisions
Equipment disposal policy	Any specific equipment disposal requirements (e.g. disposable slings, slide sheets)
Equipment disposed of	Date, where disposed to and people informed about disposal (if needed)
Equipment replacement	Details about new equipment to replace equipment disposed of

SECTION 9

Facility design and upgrading



Contents

9.1 Overview of health and residential care facility design

This section provides practical recommendations to help managers, architects, planners and designers involved in designing and redeveloping healthcare facilities. It can also be used by managers and moving and handling advisers as a guide when reviewing their facilities; for example, when completing a workplace profile or an annual moving and handling programme audit. The initial parts of the section cover information about the building design spaces and features needed for effective moving and handling. Later parts in this section provide more detail about upgrading existing facilities.

The aim of facility design is to provide spaces that allow carers to work in safe environments. Facilities for healthcare, aged care and disability care should be planned, designed and built with moving and handling space requirements as standard, not as an afterthought or as a special consideration. Facility design should be based on information from workplace profiles, discussions with end users and the information in this section. It is most cost effective to include moving and handling features during the planning stage; it is much more expensive to add such features later.

As noted in earlier sections, building or facility design is a crucial component in an overall programme to reduce the risks associated with moving and handling people. The information in this section incorporates current best practice in building design for moving and handling people. Designers and people involved with moving and handling need to adopt or adapt the information for new building designs. It is important to conduct a preliminary assessment of the proposed design for a new facility to ensure renovations meet the moving and handling needs of both the people being cared for and their carers.

A common belief is that adding the recommended design spaces and features for moving and handling people will add considerably to the cost of a new facility or the renovation of an existing facility. There are two points to take into account about additional costs:

- **First**, several research reports have noted that the return on investment from adding moving and handling features is around three years (estimates are between 2.5 and four years).[1] The additional costs of including the recommended features for moving and handling people will generally be covered in about three years by cost savings resulting from reduced injuries and lower staff absenteeism and turnover. After three years there are likely to be continuing cost savings in facility operating costs
- **Second**, the cost of changing facility design features after a facility has been built or renovated is considerably higher than when these design features

1. See, for example, Chhokar et al, 2005.

are included at the design stage for a new facility or during renovations. For example, it costs 10 times as much to widen a doorway in an existing facility as it does to include a wider doorway in the design phase.[2]

In 2011, the state of health facility design in New Zealand in relation to moving and handling people was generally poor, in spite of The New Zealand Patient Handling Guidelines being available since 2003. Numerous examples of poor building design features were observed or brought to the attention of the revision panel at the time of writing in 2010-2011 (see Box 9.1).

BOX 9.1

Examples of poor facility design in New Zealand

- Newly installed ceiling tracking in hospital patient rooms not extended into adjacent bathrooms
- Poorly designed storage spaces where mobile hoists are stored in front of shelves, blocking access to slings
- Toilets in newly built facilities placed in the corners of bathrooms, not allowing carer access to both sides of toilets
- A new surgical theatre for gastric banding operations with operating tables and doorways too small for obese patients
- Wall-hung toilets that are not designed to take heavy patients, but are easy to clean.

Source: Observations made by revision panel members, 2010

Opportunities to incorporate best practice for moving and handling people in facility design include planning a new facility and undertaking minor renovations or a major upgrade of an existing facility. Some examples of design features that might be included during these opportunities are shown in Table 9.1. More detailed information about planning for facility upgrading is provided later in this section.

2. New Zealand Association of Occupational Therapists. (2006). *Submission on Review of the Building Code*. p. 5.

TABLE 9.1 OPPORTUNITIES FOR IMPROVING FACILITY DESIGN AND FUNCTION

Example of facility development	Examples of design features to consider for moving and handling people
New building design	Ceiling track specified Minimum width specified for doors and corridors Client rooms Bathroom design Equipment storage Areas for bariatric clients
Renovating or upgrading an existing facility – may range from specific and relatively minor modifications to major changes, possibly including structural changes	Doorways widened Bathroom redesigned Ceiling tracking installed or retrofitted Equipment storage added Access for mobile hoists Ramps to doorways Grab rails

The guidelines in this section are based on ergonomic principles that focus on matching the design and layout features with the needs of both the people being moved and their carers. Moving a client in a confined space makes it difficult to manoeuvre equipment and puts staff and the client at risk. The aim is to provide an environment where people can be moved in an efficient manner that reduces risks for both the carers and the people being moved. In practical terms, this means ensuring that facilities are suitable for the techniques and equipment required for effective moving and handling (see Box 9.2). It is also important to design facilities in a way that encourages client independence and reduces the need for handling.

The recommendations included in this section are based on consultation with moving and handling coordinators and assessments of the literature on healthcare facility design in Australia, Canada and the United Kingdom. All new designs should be assessed using industry standards[3] and the development process should involve manual handling advisers and relevant clinicians early in the design stages.

3. The WorkSafe Victoria (Australia) 2007 publication, *A Guide to Designing Workplaces for Safer Handling of People* is particularly recommended for designers and facility project managers involved in facility planning and renovation.

BOX 9.2

The main facility design considerations for moving and handling people

There are five key areas of facility design for ensuring reduced risks in moving and handling people. These are:

1. **Access**: Corridors and doors should be sufficiently wide to allow the client, the carer and equipment to pass through and for two beds or wheelchairs to pass each other
2. **Space requirements**: There should be enough space around furniture, beds, toilets, showers and baths to allow the use of appropriate moving and handling techniques and equipment
3. **Handrails and grab rails**: These help people who are partially mobile to move. They require careful placement so that they do not obstruct handling operations or the movement of equipment
4. **Floor surfaces and friction**: Floors should be designed to enhance the safety of clients (from falls) and staff who push or pull wheeled equipment
5. **Equipment storage**: There needs to be suitable storage for equipment close to handling areas, so that equipment is readily accessible for use and easy to put away after use.

9.2 Health facility design standards relevant to New Zealand

The primary New Zealand standards for building design and construction (collectively known as 'building controls') are the *Building Regulations (1992)* (within the *Building Act (2004)*) and the Building Code, which is the First Schedule to the Building Regulations.[4] The purposes of these laws are to provide controls and to ensure buildings are safe and sanitary and have adequate fire escapes. The sections covering fire safety, access and the interior environments of buildings are particularly relevant to moving and handling people.

The New Zealand Standard 4121:2001 *Design for access and mobility: Buildings and associated facilities* (NZS 4121 Design for Access) provides guidelines for design and sets out access and facility requirements for people with disabilities living independently. Some aspects of the NZS 4121 *Design for Access* recommendations are not suitable for dependent disabled people who require assistance from one or two carers. For example, the bathroom recommendations are too small to allow sufficient space for carers and moving and handling equipment.

There are several items of legislation that employers and designers must take into account. *The Health and Safety in Employment Act (1992)* (including the 2002 amendments) requires all practicable steps to be taken to ensure there is a safe and healthy workplace.[5] Designers and managers have specific duties set out under the *Health and Safety in Employment Regulations (1995)*.

The New Zealand Ministry of Health generally requires use of the *Australasian Health Facility Guidelines* (Australian Health Infrastructure Alliance, 2009) for buildings and facilities for District Health Boards (DHBs). The *Australasian Health Facility Guidelines* are generally appropriate for New Zealand. However, where there are differences between the Australasian guidelines and this section on facility design, we recommend that the specifications described in these Guidelines be used. Note that some of the bathroom recommendations in the *Australasian Health Facility Guidelines* are too small and may not allow sufficient space for moving and handling and using equipment. All toilets and bathrooms in healthcare facilities should allow sufficient space for two carers to assist.

4. Source: www.dbh.govt.nz/building-law-and-compliance, retrieved 19 December 2010.
5. See pamphlet on 'Taking all practicable steps' at www.osh.dol.govt.nz/order/catalogue/hse-factsheets.shtml.

9.3 Facility design process

With any facility development, it is important to use a systematic approach so that physical spaces needed for moving and handling people are given adequate consideration. Two specific stages should take place:

- A moving and handling assessment document is developed by a moving and handling coordinator or health and safety staff. This document identifies design specifications for spaces, outlining the manual handling tasks, including moving and handling people, that will take place in those spaces
- Set up a specific project for facility development.

For the first stage, a document is prepared (with a title such as *Moving and Handling Assessment for Facility Design*). This document will provide an evolving plan for the development of facilities that eliminates the need for manual lifting of dependent clients (see Box 9.3). Once developed, this document can be used to assess current facilities and plan changes to buildings whenever opportunities for facility upgrading occur. This document should be used in the initial budget calculations for the strategic planning in the next stage.

BOX 9.3

Example: Moving and Handling Assessment for Facility Design

The purpose of a *Moving and Handling Assessment for Facility Design* (MAHA) is to develop facilities progressively to eliminate the need for manually lifting or handling dependent clients, patients or residents. The plan will usually be developed by facility staff as a briefing for an external design team. The purpose of the plan is to ensure that physical changes made to buildings and fixtures incorporate best practice for moving and handling people whenever opportunities for new facilities or upgrading occur. Preparing an MAHA takes several steps.

1. Assess the physical dependency needs of the clients or resident population by determining the degree of assistance they characteristically require in each care area. Do this first for specific wards or units being upgraded. For each area, identify and list the equipment needed, as well as any storage and service requirements for the equipment. It is important to consult staff working in these areas and seek the input of the manual handling coordinator or equivalent person.
2. The MAHA details should be collated and provided to the team preparing the design plan. The MAHA can be used to inform project space and design requirements, addressing all architectural, structural and utility planning and coordination issues.
3. A mock-up of the proposed changes should be constructed. This can be as simple as using tape on a floor to mock-up the area and where furniture and equipment will be placed. This will provide useful information about how practical the plan is. Ask staff for their input at the mock-up stage.
4. Modify the plan with the information gathered from the mock-up. The modified plan should then be sent to the external design team so that the facility design can be developed further prior to construction.
5. Following completion of the facility construction or renovation, managers should ensure that carers and other facility staff are familiarised with the new facility, and know how to use, service and maintain all equipment in the facility.
6. The preparation of aMAHA is only required for each area in which client or resident handling will take place. It can be an indispensable tool for increasing staff and client safety, and assisting client mobilisation and rehabilitation.

Adapted from: Leib & Cohen, 2010.

A second stage is to set up a specific project for a facility development. The steps involved for a specific facility design project are summarised in Table 9.2 and are described in more detail below. Where there is an external design team, these steps are intended for an internal facility project team that is liaising with the external design team. The steps are most relevant for designing new buildings and for major renovations to existing facilities. A briefer version can be used for smaller-scale facilities upgrades.

TABLE 9.2 STEPS IN THE FACILITY DESIGN OR RENOVATION PROCESS

Step	Main activity
Step 1 Strategic planning	Identify needs and set goals, develop a plan
Step 2 Initial consultation and action plan	Gain commitment from decision-makers, set up project working group. Develop action plan and timetable. Assign responsibilities
Step 3 Facility review and development of design brief	Review existing facility and future needs. Collect specific information for decision-making. Collate and prepare a facility report. Prepare a design brief
Step 4 Facility design	Consult staff and key people. Finalise design
Step 5 Implementation of facility building or upgrade	Approvals and budget confirmed, work commenced
Step 6 Commission report and ongoing review	Closing report that records the progress of the project. Regularly inspect and review facilities

Step 1 Strategic planning

The first step is to develop a strategic plan that sets out the project goals and strategies. The plan should:

- Identify the healthcare services needed now and for the next five years
- Describe the model of care that will underpin service delivery. For example, if it is to assist elderly people to live as independently as possible and maintain maximum control over their lives, this model of care will have design implications
- Define the scope of the project. For instance, is this building a new centre or redesigning an existing one?
- Set out the project goals and your strategies for reaching them
- Set out how you will communicate with and consult staff to gain their commitment
- Define how the client handling facility design process fits into the overall redesign or build project
- Ensure that the facility is 'future proofed' by allowing for service or client demographic changes.

Step 2 Initial consultation and action plan

The project should gain the commitment of people throughout the organisation, especially those who can influence the outcome of the project, such as those who make the decisions, control the resources and understand the work processes and issues. Set up a working group of key people, including:

- Management, finance representatives
- Key clinical staff
- The designer or architect
- Health and safety unit representatives
- The moving and handling coordinator
- An employee or union representative.

Involving clinical staff and employee representatives is important because they are likely to be familiar with the practical issues involved in moving and handling people and can provide valuable ideas related to their work activities and client needs.

The action plan includes setting timelines and specific project tasks so that key people are clear about their roles and responsibilities, and there is a clear path to follow to achieve the project objectives. This will include the following tasks:

- Identify and prioritise the project objectives
- Assign responsibilities within the project group
- Decide what information is needed and how to gather it (see Step 5)
- Develop an initial plan and timeline for the project
- Identify what the communication strategy will be between the design team and the organisation's building committee or management team (e.g. meeting schedules, key stakeholders and contacts, agendas and distribution of minutes)
- Ensure the project plan is incorporated into the overall development plan for the facility.

Step 3 Facility review and development of design brief

Before making any changes, a review of the existing facilities should be carried out so that issues related to the facility design and layout can be identified. There are several potential sources of specific information that can be used to help the development of the design brief. These include the use of existing records, the facility profile and simulations.

- **Existing records**: Most healthcare organisations have operational records of client populations, handling tasks performed and equipment used. Accident

and injury data should also be available. There may be information from sources such as client and workplace profiles, staff questionnaires and workplace audits. Archived documents from previous projects should be read for 'lessons learned'.

- **Current facility profile**: Compile a profile of the current state of the facility using methods such as walkthrough audits (see Section 13 on conducting audits), group discussions and staff self-report questionnaires. Topics to be reviewed include moving and handling policies, staff and client needs, equipment use, workflow analysis (including any time-and-motion studies and staffing and resident profiles) and the state of current facilities such as workspaces, room layout, access ways and storage.
- **Simulations**: It is **strongly recommended** that mock-ups of physical layouts be used to assess whether planned spaces are adequate. One way of doing this is to use a taped layout on an empty floor space so that all staff working in that area can trial the work tasks that will be happening.

Once the information has been gathered and collated, prepare a facility report so that the project group can review the findings and decide if more information is needed. Once the review is complete, senior management should appoint key people from the working group to develop the design brief, preferably including or consulting a moving and handling coordinator. The brief sets specifications for workspaces, layouts, access ways, fixtures, fittings and other features. The project plan may need updating at this point.

Step 4 Facility design

There will usually be several design stages, from initial concepts to finished plans. It is important that key people are consulted at each stage. The moving and handling coordinator will ensure that the design is 'user friendly' and promotes low-risk client handling practices. Staff should be asked for feedback, as they will provide practical views based on their experience of moving and handling operations.

Step 5 Implementation of facility building or upgrade

This step involves gaining approvals and budgets, obtaining prices or tenders, commissioning the work, and monitoring progress to ensure the work is carried out to specifications.

Step 6 Commission report and ongoing review

Once the project has been completed and prior to facility use, there should be a closing report that records the progress of the project, listing any problems, deviations from plan and resolutions. Once this has been archived it can be used

as a guide for future projects as a 'lessons learned' document. Ongoing and regular reviews of facilities are needed. Information to assist this process can be obtained from resources such as the audit tool, staff questionnaire and workplace profile – see Sections 12 and 13 in these Guidelines for more details. Regular reviews of facilities and identifying safety issues are critical parts of the risk assessment process and should be done at least once a year. Addressing issues and upgrading facilities should be part of the process of continuing quality improvement.

9.4 Ceiling tracking and hoists

One of the most important design features to include in all new building projects and renovations is the installation of ceiling tracking, which allows the use of ceiling-mounted hoists. Ceiling hoists facilitate moving and handling and save space. Ceiling tracking can also be retrofitted to existing facilities. As a minimum for new buildings, ensure that the ceiling structure is sufficiently strong to allow later fitting of ceiling tracking and hoists when funds are available.

Ceiling hoists support vertical and lateral transfers with minimal manual effort by carers. The hoists operate from ceiling-mounted tracking and most are battery operated. They allow the lifting and transfer of people in slings within areas covered by the track.

FIGURE 9.1

Ceiling tracking with hoist

Research has shown that the installation of ceiling hoists leads to significant reductions in musculoskeletal injuries and physical stress to carers.[6] It also increases safety for clients. Payback periods (based on returns on investment through reduced injuries and absenteeism) for ceiling hoists vary from less than a year to three years, depending on the equipment purchased and the extent of training provided. Injury reduction rates of 58% to 72% have been achieved within one to three years.[7]

- Specific advantages and features of ceiling hoists are:
- Ceiling hoists require fewer carers to carry out transfer tasks and take less time to use than mobile hoists
- Ceiling hoists can be effective for environments that are problematic for mobile hoists, such as restricted spaces and spaces with carpeted floors
- They can reduce the need for other structural changes required in a client's home, such as doorways and bathrooms
- The initial costs of ceiling hoists are typically more than those of other transfer methods – they are most cost effective when installed in new buildings
- Transfers by ceiling hoist can only be provided in the areas with tracks installed.

Layout options for ceiling tracking

There are multiple designs for ceiling track systems – single and multiple track systems, and straight, angled, curved and multidirectional track systems. The type of ceiling track system selected will depend on the types of use intended. For single

6. Jung & Bridge, 2009.
7. Ceiling Hoists, Workplace Health and Safety, Queensland (Australia). Retrieved 7 January 2011 from www.deir.qld.gov.au/workplace/subjects/ceilinghoists/index.htm.

rooms, straight tracking may be the easiest to install. However, its major limitation is that it only allows the lifting and movement of clients in a straight line. Adding curved sections of tracking allows increased coverage and repositioning flexibility, especially in bathrooms (see Figure 9.2). In new designs where the bed and toilet locations are known, it may be possible to organise a straight track from near the head end of the bed to the toilet by appropriate positioning of the doorway. This can result in significant cost savings.

FIGURE 9.2

Example of curved ceiling tracking in bathroom

The most versatile tracking system is a parallel tracking pattern called the 'XY' system, which provides full room coverage. With this system a client can be moved anywhere in the room. The XY system has two straight sections of track on each side of the room, parallel to each other, with another track joining the two. The joining track can slide along the two parallel tracks.

More complex track systems are available for healthcare facilities where transfers between rooms, such as bedroom to toilet, are required. For example, 'gates' (for transit between two adjacent track systems) and 'turntables' (which allow moving from one track to another at track junctions) can also be fitted to increase the versatility of ceiling tracking systems. More information about the types of ceiling hoist used with ceiling tracking is provided in Section 7 Equipment for moving and handling people.

Designing for ceiling tracking and hoists

Ceiling support structures: A primary design feature is to ensure that the ceiling support structure is adequate for the additional loads imposed by a ceiling tracking system and hoist (see Box 9.4). Many ceiling tracking systems with hoists have a safe working load (SWL – weight of person lifted) of 200 kilograms and 270kg. Additional systems are available that have SWL capacities of 363kg and 454kg. The following design specifications are recommended:

1. For new installations, the recommended minimum SWL for the hoist should be 270kg
2. Both the tracking and the ceiling support structures should be able to support 1.5 times the SWL for a period of 20 minutes
3. Where ceiling hoist tracks could be subject to more than one hoist loading at a time, engineering approval must be obtained
4. During installation, all ceiling tracking must be clearly labelled with the SWL at regular intervals along the tracking
5. If the initial design does not provide for hoists, every attempt should be made to provide a design that maximises the opportunity for future hoist and track

installation (e.g. avoid the installation of false ceilings or services above where tracks may go in the future).

BOX 9.4

Australasian Health Facility Guidelines: Ceiling tracking

The *Australasian Health Facility Guidelines* (AUSHFG 2009) note the following design specifications for ceiling tracking:

501441 Rooms with ceiling mounted equipment, such as X-Ray Rooms and Operating Rooms or other rooms where ceiling-mounted patient lifting devices are fitted may require increased ceiling heights. Heights should comply with equipment manufacturers' recommendations. The most common ceiling height in such areas is 3000 mm. (AUSHFG 2009 pp. 851-852)

501444 Reinforcement of the ceiling support structure should be provided for overhead patient hoists where installed. This should be noted in the project brief. In addition, information provided by equipment manufacturers should be reviewed in terms of the needs of particular items of equipment for passage through full height door openings e.g. to ensuite bathrooms; or that may affect the positioning of bed screen tracks or other such fixtures in multiple-bedrooms.

Ceiling heights: For ceiling heights, allowing 3,000mm in new buildings provides dequate space for ceiling tracking and screening curtain tracking. Specifying a doorway height that extends to the ceiling will assist in the placement of ceiling tracking to connect rooms.

Doorways: Typical transfer tasks occur between rooms, so ceiling tracking needs to go across rooms, through doorways and into adjacent areas such as bathrooms. Usually full-height doorways should be specified when ceiling tracking is to be installed.

FIGURE 9.3

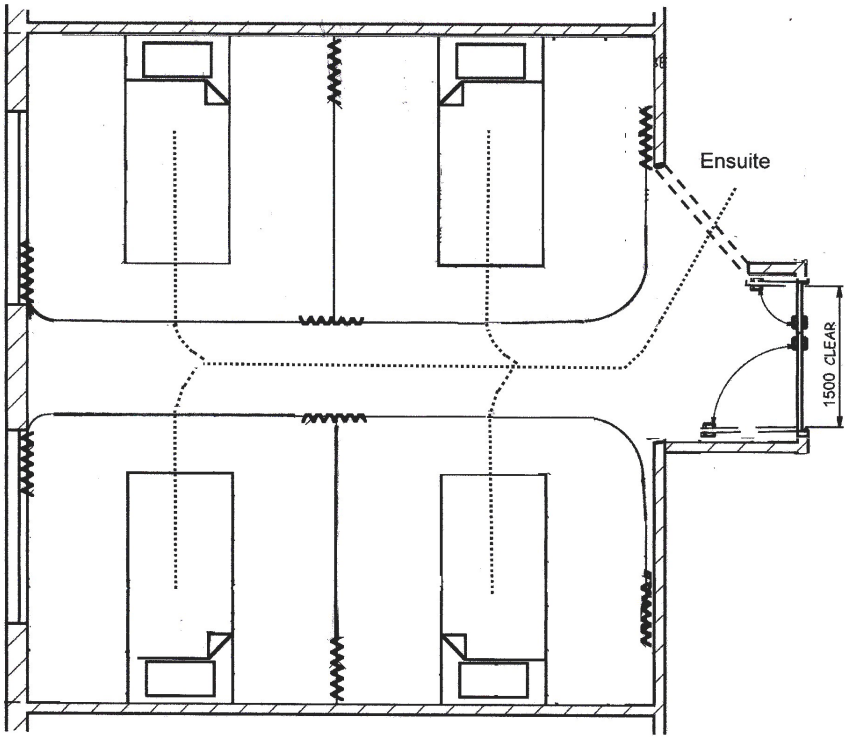
Example of curved ceiling tracking in bathroom

Screening curtains: When screening curtains are used in conjunction with ceiling tracking, specific planning is needed during curtain tracking installation. Curtain tracking is typically installed below ceiling tracking and located so that screening curtains can be pulled clear of the ceiling tracking and ceiling hoists. However, some ceiling tracking systems allow curtain tracking to be placed above ceiling tracking. There are several options for curtain tracking that are designed to be compatible with ceiling tracking.

Figure 9.4 shows a suggested configuration for ceiling tracking and curtain tracks for a room with multiple beds and adjacent ensuite bathroom. Ceiling tracking and hoists should reach within 1000mm of the heads of beds.

FIGURE 9.4

Example of ceiling and curtain tracking in rooms with multiple beds



9.5 Access design features

Corridor widths, door widths, flooring and handrail features affect access for staff and clients between the various functional areas of a healthcare facility. This section recommends suitable dimensions for access ways and turning and passing spaces, with drawings showing suggested design details. The movement of clients requires assistance from carers, who may need to use large equipment such as beds, trolleys, hoists and wheelchairs to transfer clients. The use of handrails, grab rails and lighting is also covered.

Corridors

Corridors are expensive to build and maintain, so the minimum widths recommended reflect a balance between use requirements and cost. The main considerations include where the corridor is located, frequency of use by staff and clients and equipment that is used (such as beds, trolleys, wheelchairs and hoists).

- **Major corridors** are high-use corridors where the unrestricted movement of clients is important. They are usually emergency evacuation routes and high-frequency-use corridors.

FIGURE 9.5

Minimum clearance widths for corridors

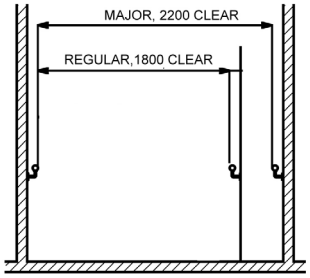


FIGURE 9.6

Major corridors need adequate clearance widths

- **Regular corridors** need clear passages for assisted client movements and may be lower-frequency-use corridors.

The recommended minimum widths described below allow staff to move clients during their normal daily tasks, as well as during emergency evacuations. These widths must be clear and unobstructed. Fixed and portable items such as handrails, basins, trolleys and furniture should not be placed where they reduce the clear width – or additional space should be provided for these items.

- 2,200mm clear width for major corridors such as interdepartmental and public routes.
- 1,800mm clear width for regular corridors where clients may be moved in large equipment (such as beds) and where passing is required, and corridors within

wards where clients are moved with large equipment items and are often assisted by carers.

Corridors need to comply with the relevant building codes.[8]

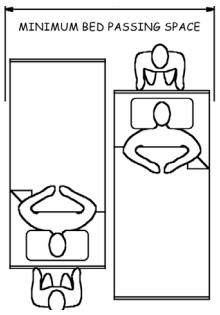
Floor spaces for passing and turning

The widths for corridors also apply to spaces where passing or turning clients in wheelchairs is likely, or when using other large equipment. The widths specified refer to clear spaces between handrails and any other fixtures. Widths for these spaces are listed below.

For client beds, the minimum passing spaces are:

FIGURE 9.7

Bed passing space



- 2,200mm minimum clear width for bed passing
- 1,800mm minimum clear width for other passing – this includes passing spaces for clients assisted by carers and for large client handling equipment, including mobile hoists, mobile sit to stand hoists, wheelchairs, commode chairs and trolleys.

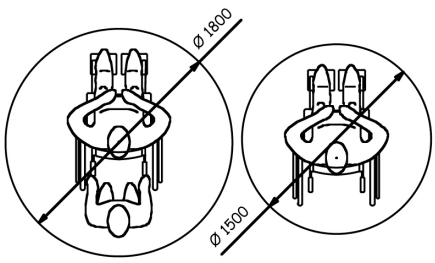
Minimum turning spaces

For turning wheelchairs, commode chairs and walking frames:

- 1,800mm minimum turning circle diameter space for carers to rotate chairs with clients
- 1,500mm minimum turning circle diameter space for people using self-propelled chairs and walking frames.

FIGURE 9.8

Turning circle for assisted and unassisted wheelchairs



For a carer to turn a bed, wheelchair or hoist through 90° when entering or leaving a room:

- 1,800mm minimum width for turning beds
- 1,500mm minimum width for turning wheelchairs or hoists.

8. These include the *Building Act (2004)*, the Fire Safety and Access Route provisions of the *Building Regulations (1992)* and NZS 4121 *Design for Access*).

Doorways

The recommendations provided refer to the dimensions of the clear space in the doorway when the door is fully open, and apply to both swinging and sliding doors.

Doorway height: The minimum height is 2,030mm to enable equipment to pass through the doorway.

Doorway width: For corridors, the minimum door opening width is 1,800mm (double opening swinging doors with a 900-900mm split).

For **bedrooms** and other rooms used by clients, the minimum door opening width is 1500mm (double opening swinging doors, for example with a 1,050–1,450mm split; see Figure 9.10) where large equipment may pass through.

For **toilets, showers and bathrooms**, the minimum door opening width is 1,200mm. Sliding and swinging doors are acceptable. Doors should not swing into toilets.

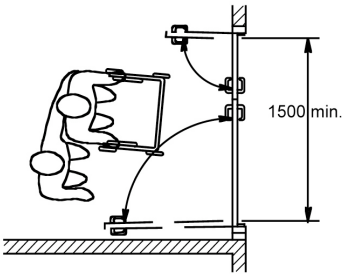
In other aspects, door openings need to comply with NZS 4121 *Design for Access*.

FIGURE 9.9

Ensure adequate doorway widths

FIGURE 9.10

Door opening 1500mm width with 1,050–1,450mm split



Flooring

Choosing floor coverings that meet the needs of staff, clients and managers can be challenging for new and renovated facilities. Floor coverings need to be:

- Safe for staff and clients
- Comfortable for clients and staff
- Functional from a cleaning and maintenance perspective.

Some common risks relating to floor coverings in health workplaces include strains and injuries caused by manoeuvring wheeled equipment and injuries from slips, trips and falls. Some soft floor coverings (e.g. carpet) can double the forces required for manoeuvring mobile hoists compared with hard surfaces such as vinyl. Small lips or joins between different floor coverings can increase the forces required to manoeuvre wheeled equipment such as mobile hoists between rooms.

Where carers are moving and handling clients, some recommendations for flooring are:

- Floor coverings should be tightly fitted to avoid trip hazards
- Joints in floor materials must be permanently sealed to avoid gaps and loose edges that could cause tripping or restrict the movement of client handling equipment. Joints should be level with the main floor to avoid being obstacles for wheeled equipment
- Where wheeled client handling equipment is used, select hard floor coverings such as vinyl instead of carpet to make moving equipment easier
- Ensure edging strips in flooring are bevelled and not more than 10mm above the floor.[9]

For wet areas, make sure the flooring is non-slip when wet. Slope the floor four ways with a minimum fall of at least 1:50 to stop water pooling. Lap the flooring up shower walls at least 150mm, and up the walls of dressing areas at least 75-100mm to avoid leaks.

Floors should comply with fire safety requirements and the relevant Australian and New Zealand standards for slip resistance.[10]

Ramps

Ramps are used in many healthcare and residential care facilities as well as in private homes. As a general rule, ramps present significant hazards to carers and people in manual wheelchairs because of the forces required to push wheeled equipment up them. Ramps also present hazards to both carers and clients when manoeuvring wheeled equipment down them. A current design view is to avoid ramps if possible because of the potential hazards they create. However, avoiding ramps may not be feasible in some private homes.

If ramps are in use and cannot be removed, several criteria are relevant to decreasing the hazards ramps create. As a general rule, the steeper ramps are, the more hazardous they become. Many design standards specify a preferred gradient of 1:14 for people with disabilities and a maximum gradient of 1:10 (5.7°). Ramps with gradients greater than 1:8 (7.12°) are difficult to use by elderly and disabled people. Even with gradients that are not too physically demanding, landings are necessary as resting places. Most standards limit the distance of ramps between landings to around 9,000mm.[11]

Ramp flooring should be of non-slip material. Outside ramps that can get wet require special consideration for flooring.

9. See WorkSafe Victoria (2007, pp. 35-44) for more information on flooring.
10. These standards include AS/NZS 4586-2004 and AS/NZS 4663-2004 – see Australian/New Zealand Standards, 2004a and 2004b in the reference list.
11. See Templer (1992, p. 44) for a detailed discussion of ramp design.

Handrails

Handrails or grab rails should be provided in multiple locations, such as bathrooms and other spaces, for semi-mobile clients. A handrail is used for general support and may occasionally take a client's full weight if they trip or fall. An example is handrails along the sides of corridors. All handrails and grab rails should have known SWLs and these should be visible where appropriate, such as on grab rails beside toilets.

FIGURE 9.11

Fit handrails and grab rails where needed

A grab rail provides stronger support than a handrail. It can take a client's full weight during handling operations; for instance, a combined horizontal/vertical grab rail fitted adjacent to a toilet can help a client to stand.[12] Grab rails in areas used by bariatric clients may need walls with additional load-bearing capacity.

12. Standards for handrail and grab rail designs are in NZS 4121 *Design for Access* – see New Zealand Standards, 2001.

9.6 Client handling areas

The design of all healthcare facilities should enable independent mobility by clients and allow carers to work with clients in ways that reduce risks to clients and carers. Effective moving and handling places additional design requirements on facilities. Extra space is needed for carers to work alongside clients and to allow suitable equipment to be used. How much extra space is needed depends on the number of carers required, the level of mobility of clients, the equipment being used and the specific techniques used to move clients, and possible changes in the profiles of clients in the facility or unit.

The main areas where moving and handling tasks take place are bedrooms, bathrooms (including toilets, showers and baths), corridors, day rooms, dining rooms and clinical suites. Each one has special requirements. In this section, suggested layouts and fittings for each type of room are provided. A key design feature that should be considered early in the design process is the installation of ceiling tracking to allow the use of ceiling hoists.

Bedrooms

The areas adjacent to beds need to allow carers to use effective working postures to carry out handling techniques. There should also be sufficient clear space to allow moving and handling equipment, such as mobile hoists and wheelchairs, to be used.

Access space should be provided so that equipment such as mobile hoists can be moved freely between beds and doorways. Keep furniture out of these areas, or ensure that it is easy to move. If hand basins or other fixtures are to be installed, space should be added to allow sufficient clear space for moving and handling.

Dimensions for bedrooms

The following clear spaces are required for moving and handling and apply to a typical bed that is 2,200mm long by 1,000mm wide. These clear spaces are consistent with the recommendations made in a review of bed spaces for clients receiving healthcare.[13]

- 1,200mm clear space on each side of the bed so that carers can work with equipment items such as mobile hoists. Ceiling track hoists and wheelchairs need less space than this, but allowing 1200mm enables most transfer tasks to be performed effectively
- 1,500mm clear space beside the bed where standing hoists and bed to trolley transfers may be required[14]
- 1,200mm clear space at the foot of the bed so that equipment can be moved from the bed to the door. This allows a hoist to be positioned and a client to be transferred to a chair at the foot of the bed.

13. See Hignett & Lu, 2010.
14. See WorkSafe Victoria, 2007, pp. 46 and 47.

Furniture in bedrooms

- Beds should be height adjustable so that moving and handling tasks can be carried out at the correct working height
- Beds should have an under-bed clearance of at least 150mm to accommodate mobile hoists
- Beds should be on castors so that carers can move the beds to create extra space if needed
- Provide chairs with armrests to help clients stand up
- Provide furniture on castors so that it is easy for carers to move it to allow space for large moving and handling equipment
- If recliner chairs are used, they should be electric and have easy-to-clean surfaces such as vinyl.

General features for bedrooms and other client areas

- Provide a staff calling system in as many locations as possible and within easy reach of clients, so that clients and carers can call for help if necessary. The system activation light should operate so that it can only be cancelled at the activation point
- Have sufficient electrical outlets in client areas so that power cords do not need to cross access ways. It is recommended that there be a double general power outlet under each bed and another on a side wall (e.g. under a window) for electric armchairs
- Where feasible to install, sliding doors allow more effective use of space.

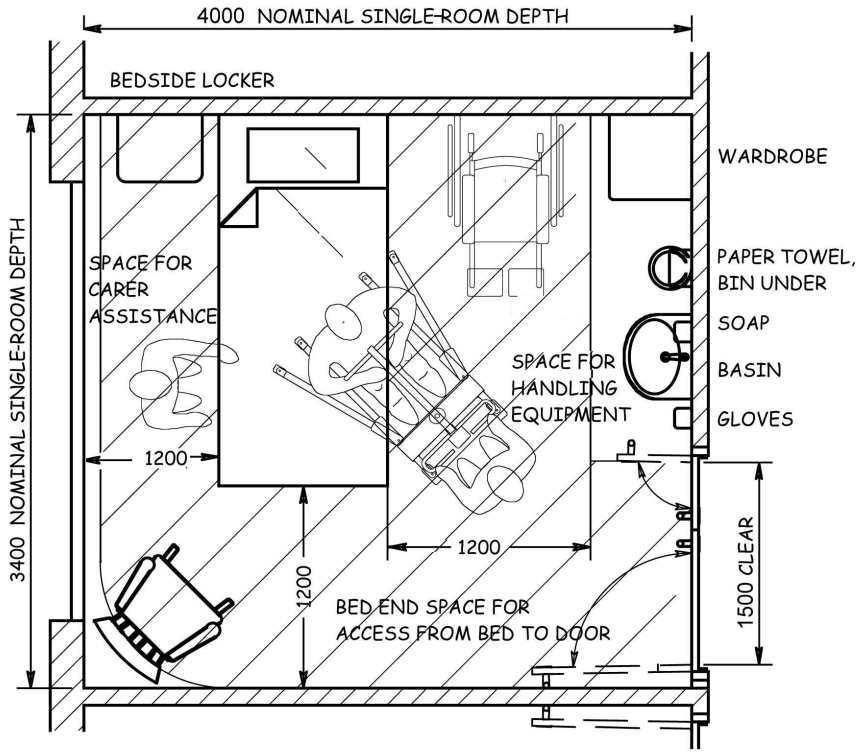
Single bedrooms

Figure 9.12 shows an example of a single-room layout. In this example, to provide for 1,200mm clear space on each side of the bed, the minimum bedroom dimensions should be 4000mm wide to allow for fixed wall fittings and furniture on one side, and 3,400mm deep.

For transfers from a bed to a trolley using a transfer board, there needs to be at least a 1,200mm clear area beside the trolley, so that the carer can adopt a safe working posture. Providing for 1,200mm on each side of the bed allows larger spaces for bed to trolley transfers if the bed is pushed to one side.

FIGURE 9.12

Example of a single-room layout



Rooms with two or more beds

The minimum space recommendations for single rooms can be used as a guide for rooms with multiple beds (see Figure 9.13). In bedrooms with multiple beds, there should be minimum clear spaces of 2,400mm between beds that are side to side and 2,400mm between beds that are end to end. It is assumed that the typical bed size is 2,200mm long by 1000mm wide. These dimensions may need to be larger for beds with additional equipment and accessories attached.

For beds that are side by side

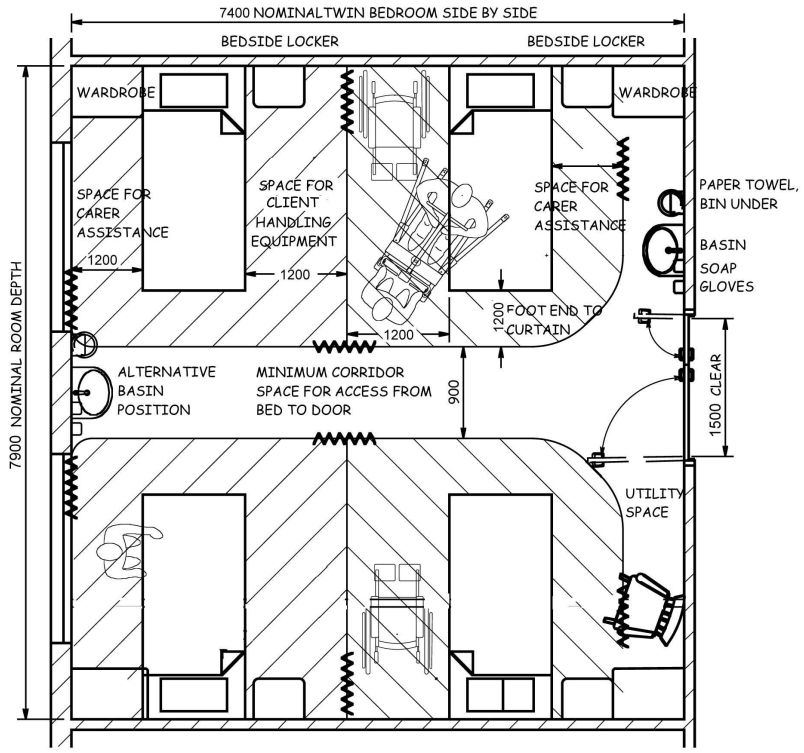
- 3,400mm between bed centrelines
- Allow at least 1,200mm between the bed and the screening curtain for use of equipment within the privacy curtain. If ceiling track hoists are installed, allowing 1,000mm between the bed and curtain enables client movements to be performed effectively
- 1,200mm clearance between the foot end of the bed and the privacy curtain.
- 900mm-wide corridor space outside the privacy curtain at the end of the bed for access between the bed and the door.

For beds that are end to end

- 2,400mm clearance between bed foot ends
- 1,200mm clearance between the foot of the bed and the privacy curtain
- 900mm-wide corridor between privacy curtains for access to door when privacy curtains are used.

FIGURE 9.13

Example of a room layout with four beds



Bathrooms, toilets and showers

The layouts for bathrooms will depend on the specific needs of the facility. The text below describes layouts for both separate facilities, in which toilets, showers and baths are in separate rooms, and combined facilities such as ensuite bathrooms, where toilets and showers are provided in the same room. The general layout principles for separate toilets and showers can be adapted where these facilities are located in a single room.

Toilet spaces

Toilets need adequate space around toilet bowls and sinks, plus clear passages to allow carers to assist clients and use large equipment if needed. For multiple-bed facilities, at least one all-gender accessible toilet should be provided in each ward

or unit. A common design error in New Zealand health facilities is to place toilets in corners of bathrooms, with the backs of the toilets too close to the walls.

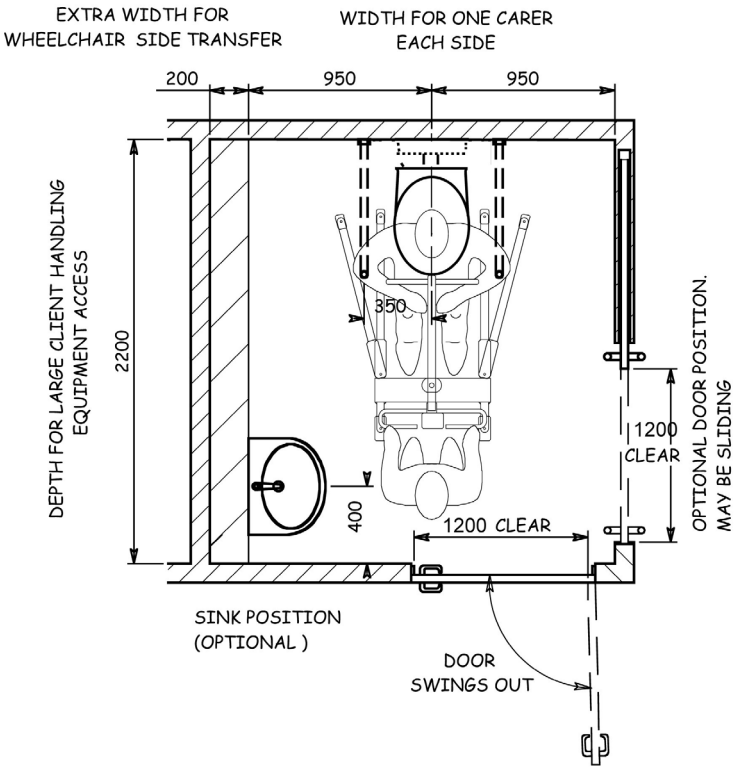
The amount of space required depends on how many carers are involved and the equipment used. Moving and handling activities and equipment in toilets include transfers from a wheelchair or commode chair (either side on or front on), clients walking with frames, and standing hoists.

Figure 9.14 gives the typical spaces that would be adequate for a toilet in a healthcare facility. For rooms with a single toilet and for ensuite bathrooms, the minimum recommended dimensions required for carers and equipment are:

- Door opening: minimum 1,200mm clear width
- Depth of room: minimum 2,200mm from door opening
- 1,500mm clear space in front of toilet to allow for equipment for toilet transfers.

FIGURE 9.14

Toilet plan allowing space for carers and equipment



For doors into ensuite and other bathrooms, consideration could be given to having corners with two sliding doors so that the entire corners can be opened for access.

For space between the toilet bowl and wall:

- The front of the toilet seat needs to be 700-750mm from the back wall
- For two carers, there needs to be at least 950mm on each side from the toilet bowl centre, plus 200mm on one side for independent disabled side transfers
- In facilities with mostly mobile residents, it may be adequate to provide for one carer with at least 950mm on one side and 450mm on the other side from the toilet bowl centre, plus 200mm for independent disabled side transfers.

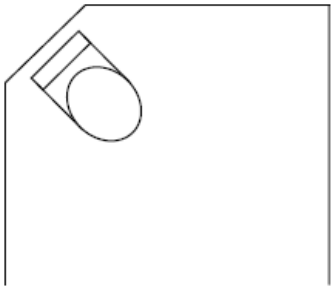
FIGURE 9.15

Toilet with space for carers and equipment

Another design alternative for toilet space is to angle the wall and the toilet pedestal to provide space on each side of the toilet (see Figure 9.16). This can be a cost-effective option for small toilet areas.

FIGURE 9.16

Angled toilet pedestal

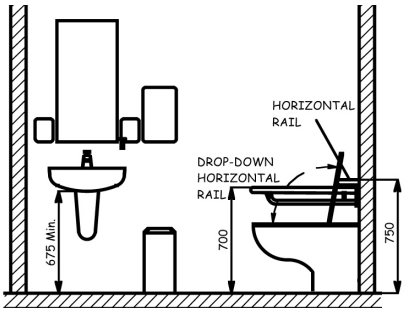


Toilet fittings: A stable and secure toilet seat is important as it makes it easy to transfer people. The toilet bowl height needs to allow for equipment that may be used. For example, allow for a commode chair being used over the bowl. In a unit that provides care for bariatric clients, large toilet seats may be needed. In facilities caring for people with dementia, toilet seats should be different colours from the pedestals.

Handrails: Handrails or grab rails extending from the wall on each side of the toilet can help people to move on and off toilets. Horizontal drop-down grab rails 700mm from the floor, that can be folded away, are most suitable (see Figures 9.15 and 9.17).

FIGURE 9.17

Floor heights for toilets and basins



Basins: When positioning basins, the centre of each basin should be at least 400mm from any adjacent wall, so that the basin can be used by a client in a chair. Allow a clear space of at least 800mm wide by 1,200mm deep in front of the basin for wheelchair and equipment access. There should be a clearance of 50-60mm between the taps and any obstruction or wall.

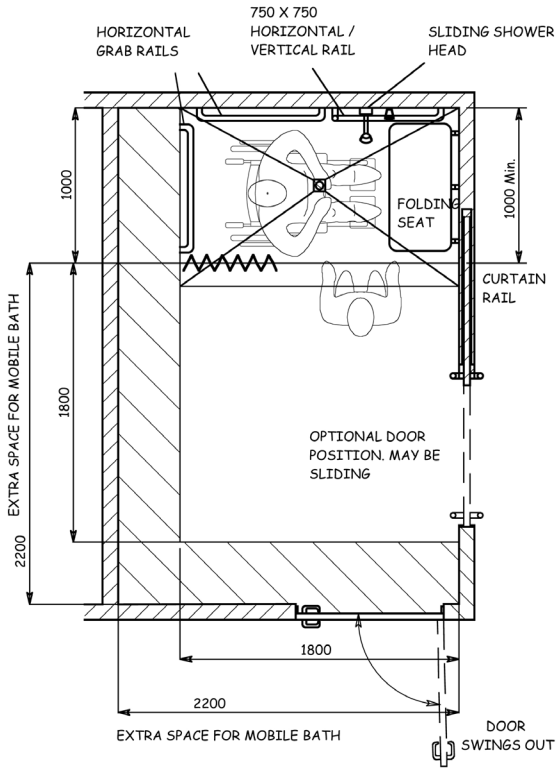
Allow at least 675mm clear space under the basin for use by a seated client (Figure 9.17). Ensure pipes and waste outlets do not obstruct the space under the basin.

Shower rooms

Adequate space should be designed for shower rooms so that carers can assist clients to shower, dry, move and transfer, and to allow access for large client handling equipment such as wheelchairs and commode chairs. There should be no plinth, raised edges or other obstacles in a shower unit that may limit wheelchair access. All floors need to be designed with falls to stop water from pooling, with increased falls in curtained-off shower cubicles. The floors should have non-slip floor material.

FIGURE 9.18

Shower room with space for a shower trolley



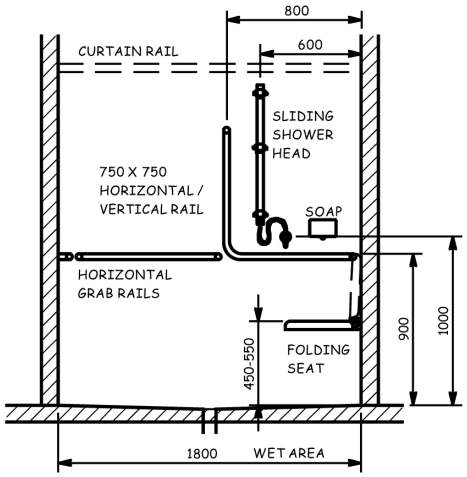
Shower rooms need enough space for carers and equipment in both wet and drying areas (see Figure 9.18).

- Wet shower areas: 1,800mm by 1,000mm
- Drying space: 1,800mm by 1,800mm or 2,200mm by 2,200mm if large mobile shower trolleys are used and for bariatric clients.

Mobile shower trolleys vary in size, but are usually 600-750mm wide and 1,500-2,200mm long. The drying space needs to be at least 2,200mm by 2,200mm

FIGURE 9.19

Shower room fittings



to move most shower trolleys into position. Less space may be needed when using smaller shower trolleys.

For shower room fittings the following features are desirable (see Figures 9.18 and 9.19):

- A hinged drop-down seat in the shower cubicle that is at least 600mm wide can help clients who are partially mobile. The seat can be hinged out of the way for clients who are walking or using commode chairs. A disadvantage is that hinged seats require regular cleaning and may impede mobile shower trolleys
- A fixed grab rail with horizontal and vertical arms near the shower seat can help clients to stand
- The shower should have a detachable, height-adjustable shower head and a hose at least 1,500mm long close to the shower seat. If a shower trolley is used, the hose needs to be at least 2,000mm long.

Combined shower and toilet rooms

Combined shower and toilet rooms can be useful to carers, because they provide immediate access to a toilet if a client needs one while showering. A ceiling track hoist with a curved section around the bathroom will help carers to move clients between the shower and toilet more easily (see Figure 9.20). There are multiple options for laying out a combined shower and toilet room. It is most important to allow adequate space in showering and drying areas so that carers can use large equipment if required.

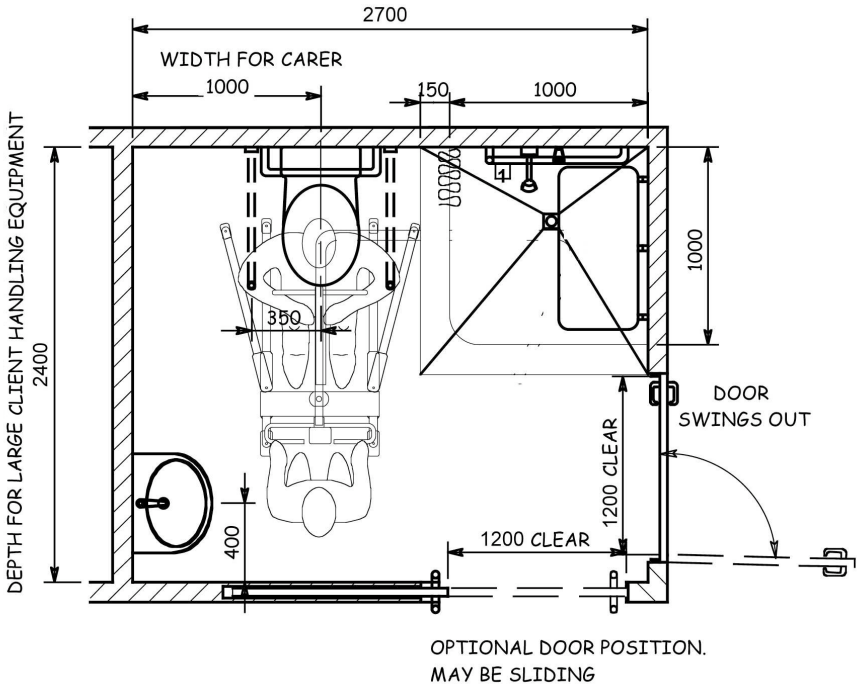
FIGURE 9.20

Example of ceiling tracking through into bathroom

Figure 9.21 shows the minimum space required for the single-doorway option. If a combined shower and toilet room is shared between rooms, extra space will be needed for another door. This can be done by extending the room length from 2,700mm to 3,350 mm.

FIGURE 9.21

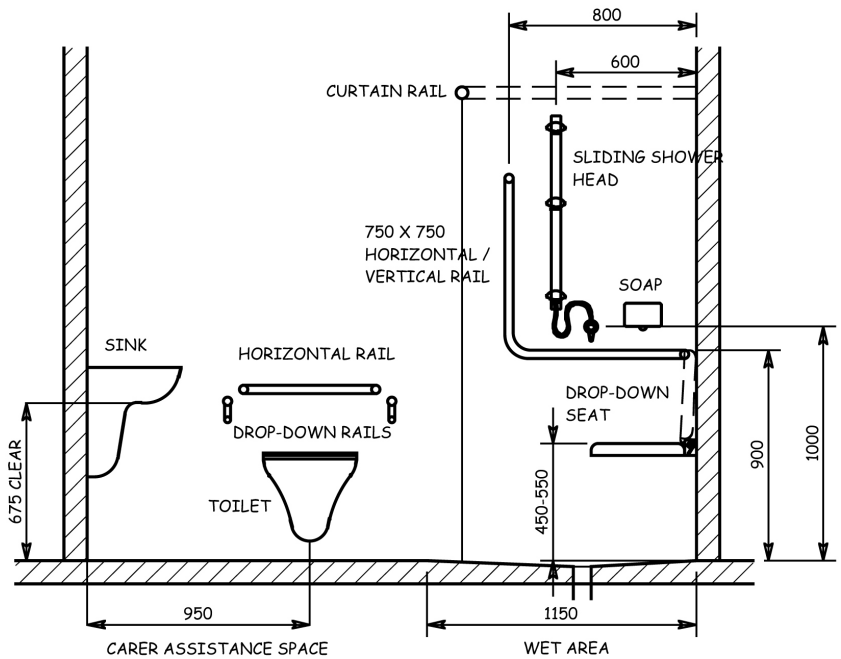
Combined shower and toilet room



The recommended requirements for combined shower and toilet room fittings are shown in Figure 9.22. NZS 4121 *Design for Access* has further information on designing showers and combined shower and toilet areas for disabled people.

FIGURE 9.22

Fittings for combined shower and toilet room

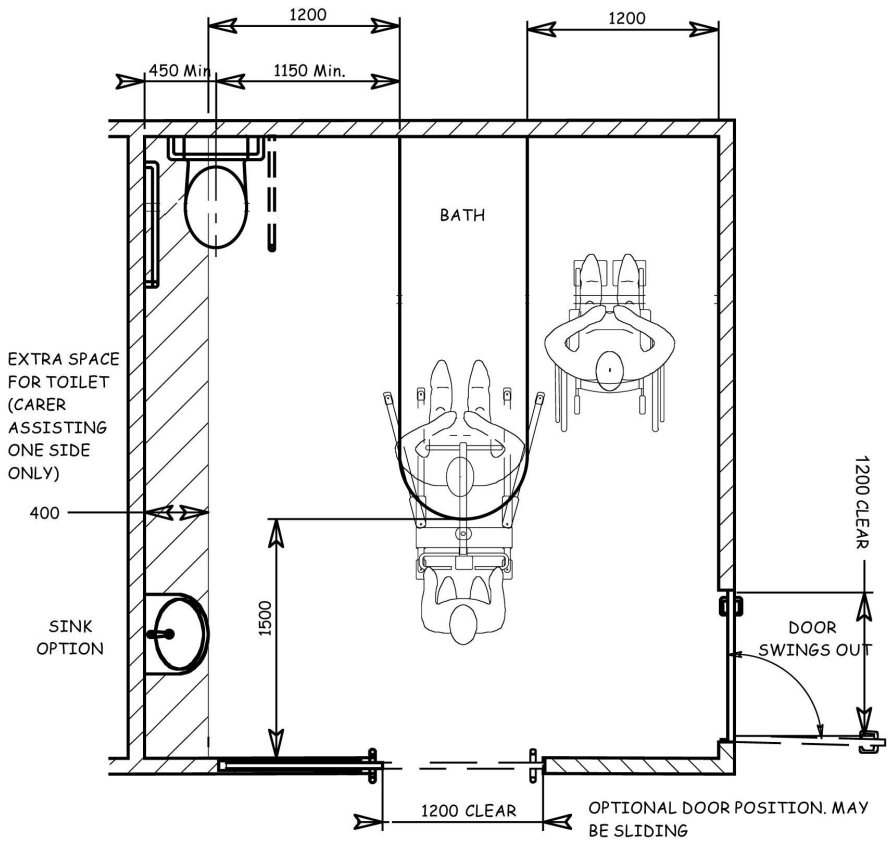


Rooms with baths

As baths have been largely replaced by showers, few baths are installed in new and renovated healthcare facilities. If a bath is installed, the recommended dimensions for space are shown in Figure 9.23. Where feasible, install ceiling tracking. If ceiling tracking is not available, allow 1,200mm on both sides of the bath to move a person from a wheelchair to the bath using a mobile hoist. Consider mounting the bath on a plinth (300mm high), otherwise carers can find bending over the bath stressful on their lumbar spines. Have at least 150mm clear space underneath so that a mobile hoist can be positioned over the bath. Birthing pools need ceiling tracking above for handling and emergency evacuations.

FIGURE 9.23

Layout for a room with a bath



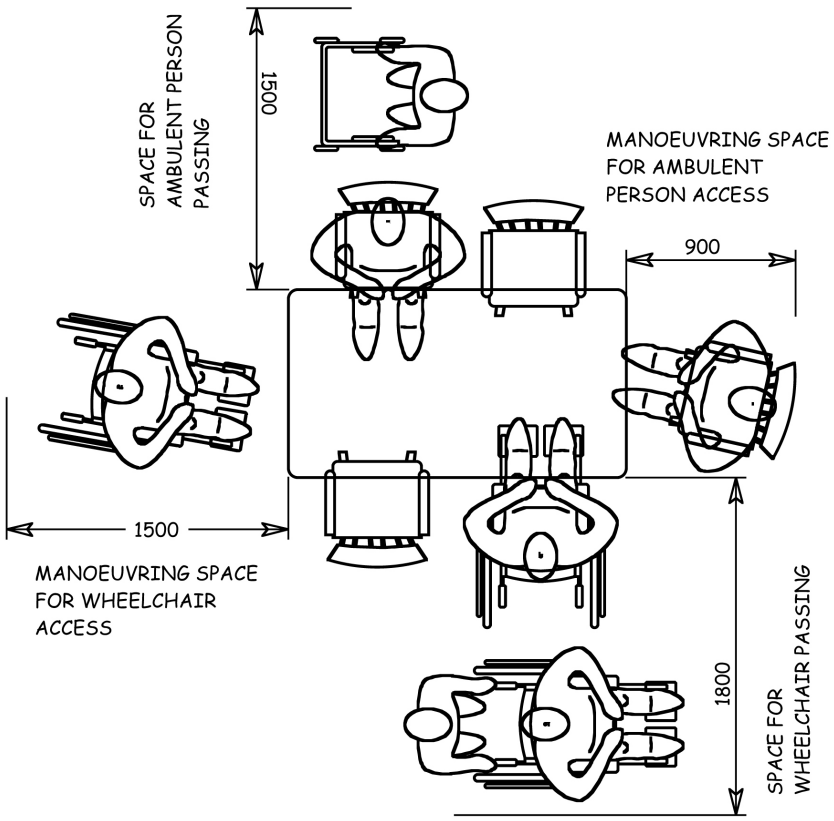
Day and dining rooms

For day rooms and dining rooms, Figure 9.24 shows the typical spaces needed. Some key points are:

- Allow adequate space around chairs and dining tables so that clients using mobility aids and wheelchairs can access the furniture easily
- Make sure the access area between the entrance doorway and seating areas is at least 1,500mm wide so that clients and their carers have space to move and pass
- Provide extra space for the temporary storage of equipment, such as walking aids and wheelchairs, while it is not being used.

FIGURE 9.24

Spaces needed around furniture in day rooms



Clinical suites

Clinical suites are taken to include medical imaging suites, obstetric delivery suites, operating suites and mortuary and autopsy suites. The layout of clinical suites needs special consideration, as beds may be surrounded by equipment and cannot easily be moved if more space is needed for handling tasks.

The following are recommendations for clear areas and spaces required for clinical suites:

- Allow a 1,200mm space on both sides of the bed to accommodate client handling equipment and transfer trolleys. If this is not practical, 700mm on one side of the bed and 1,200mm on the other may be sufficient – facilities for bariatric clients should allow 1,500mm on both sides of the bed
- Clinical suites should have double-opening doors. Doorways need to be at least 1,500mm wide to allow for equipment items
- The pathway from the door to the main care area should be at least 1,500mm wide
- Allow at least 1,200mm clear space at the foot of the bed
- Keep all equipment away from clear spaces, or put equipment on castors to allow it to be moved easily.

The spaces needed around beds in pre- and post-medical rooms are similar to those required around beds in typical units and bedrooms for clients.

Other client handling areas

There are several other areas that may need to be included in the design of client handling spaces. These include lifts in multi-storey buildings, external access to buildings and outdoor areas such as gardens.

Lifts: Key elements to be considered for lift design include:

- Door openings – ensure the width and height accommodate large equipment and people
- Internal dimensions – allow for staff to stand on either side of a bed or trolley
- Position of lift controls – ensure they are easy to reach
- Door hold-open times – allow time for the positioning of equipment and people
- Accuracy of levelling between lift floor and external floor – it should not create a trip hazard

- The horizontal width of the gap between the lift floor and the external floors, relative to the diameter of the wheels of mobile client handling equipment, including lifting machines and beds – allow for smooth movement.[15]

External access to buildings: Consider building access and exit points for people and vehicles to reduce client handling and other risks. For pedestrian access, staff, clients and visitors need easy access from car parks and from public transport. Main entrance doors should be useable by all types of mobility equipment, including wheelchairs, walking frames and electric scooters. Two specific features to assist access are automatic opening doors and covered entrances at ground level. Enquiry or reception areas should be located at main entrances to assist people in wheelchairs and using other mobility equipment.

When planning for vehicular access, identify the types of vehicle that need access. These might include ambulances and other emergency vehicles, client and staff vehicles, funeral cars and vehicles used by suppliers of goods and services. Planning for appropriate vehicle access needs to take into account vehicle turning circles. Vehicle access points to buildings should be separate from the main pedestrian access points to buildings. Vehicle access areas should provide sufficient space for the use of large equipment such as wheelchairs, stretchers and trolleys.

Outdoor areas: Some facilities provide clients and staff with access to outdoor areas such as gardens and courtyards. These should function effectively from staff safety and quality of care perspectives. In aged-care and community settings, outdoor areas are important for the wellbeing and mobility of clients. A safe environment for clients increases their mobility and reduces the potential risks to employees. If adequately designed, such areas have high therapeutic value, providing opportunities for walking, recreation and sitting space, particularly for people with dementia and those in disability housing.

Carers may be involved in the following tasks in an outdoor setting:

- Pushing wheelchairs and other equipment
- Assisting with transfers to and from seating
- Assisting walking
- Assisting clients involved in activities such as gardening.

Check outdoor environments for the following hazards that may create risks:

- Access doors that present barriers such as raised steps
- Paths or doors that are too narrow, not providing space for clients and their mobility equipment and carers
- Steep slopes, ramps and stairs, particularly for mobility aids and wheeled equipment

15. Adapted from WorkSafe Victoria, 2007, p. 32.

- Uneven or rough ground surfaces causing trip hazards and obstacles for wheeled equipment
- Courtyards that are too small for the number of people likely to use them
- Outdoor furniture that is too low and difficult for clients to get into and out of
- Sharp foliage, poisonous plants and water displays, which may present risks to people with dementia.

Staff and client call systems

Providing staff and client call systems can play an important role in the handling of clients, particularly in emergencies. During the planning of new buildings, ensure that adequate call systems are installed. During renovations, consider upgrading call systems. Plan the locations of call buttons to facilitate ease of use and reduce awkward postures.

In toilets, where drop-down grab rails are installed on both sides of a toilet, the call button should be accessible whether the grab rail is down or folded away. Two call buttons may be needed.

In bedrooms, call buttons should be accessible for use on either side of the beds and turn-off switches should be located with easy access for staff.

In showers, call buttons must be located at a height that is accessible by a person who has fallen.

In clinical and treatment rooms, call buttons should be located so that they are easily identifiable and accessible by staff and clients.

9.7 Equipment storage

The number of storage areas, and where they are located, depend on the layout of the main facility rooms and on the types of moving and handling equipment used. Some things to consider when planning storage areas are:

- Allow space for both large and small items of equipment
- Storage areas need to be located in the ward or unit, within 2,000mm of handling areas and within 1,000mm of a supervisor station
- Storage areas should not block or reduce access ways
- Doorways should be at least 1,200mm wide for storage areas for large equipment items such as mobile hoists.

For mobile and standing hoists and other battery-operated equipment, it is important to ensure that such equipment is stored close to where it will be used. If it is stored too far away, carers may be reluctant to use the equipment because of the increased time to access it. Such equipment should be available within 2,000mm of its primary area of use. A preferred option is directly off a main corridor in a recessed alcove with a power supply. Any equipment accessories, such as slings for hoists, must be in the same place to reduce the time needed to access the equipment.

The amount of space needed for storing equipment depends on what equipment is needed and how many items there are. Workplace profiles can help to identify storage needs.[16] Although each ward or unit in a large facility may have somewhat different equipment items, standardise storage areas as much as possible across units or wards so that when staff rotate to different units they can find equipment easily. Designers and planners should refer to equipment manuals for specific size details.

Avoid using storage rooms for storing damaged equipment. Moving and handling equipment should be well maintained, and repaired or replaced when damaged.

Storage layout

There are several options for configuring storage areas such as a storage room or recessed bay in a corridor. Storage layout should provide easy access to the equipment being stored. Ensure that equipment storage does not obstruct clear spaces in corridors. Storage design options include:

Long, narrow storerooms with aisles down the middle and space on the walls for storage are generally better than square storerooms, where it is often hard to retrieve items near the walls as the middle of the rooms can become cluttered with equipment

Storage bays accessible from the corridor can be an effective option for storage, instead of building a room

Shelving that is height adjustable allows for flexibility in the items to be stored.

16. For residential care, a reasonable benchmark for equipment storage is to allow one square metre per resident.

9.8 Maintaining working spaces for client handling

A key maintenance task for staff is to ensure that areas used for moving and handling remain free of stored furniture and other items that reduce the working space. Ongoing routines should involve the removal of items that impede clear space. Suggested procedures are noted below.

Bedrooms

- Keep client bedrooms tidy and free of clutter
- Create a permanent clear passage from the foot of the bed to the door, so there is always clear access to move equipment from the door to the bed
- In small rooms where space is at a premium, attach castors to the furniture so that it can be easily moved out of the way during moving and handling tasks. For chairs or beds with wheels, brakes should also be fitted
- Make sure that beds are height adjustable
- Make sure that chairs have armrests to help client transfers
- Try to locate clients who need to use wheelchairs close to day and dining rooms to minimise the distance they have to travel
- Provide plenty of electrical sockets, to prevent trailing leads.

Toilets, showers and bathrooms

- If toilets are small, inaccessible and difficult places in which to perform client handling tasks safely, consider using other toileting methods such as commodes, pans and bottles.
- If the shower or bathroom is too small and inaccessible for large moving and handling equipment, consider bed bathing until an alternative is found, or using a shower chair that can be pushed into the shower or bathroom
- Install grab rails in toilets, showers and bathrooms to encourage clients to stand and sit independently.

Corridors and doors

- Check that corridors and access routes are free of items that restrict minimum recommended widths
- Ensure that items are not stored behind doors that can prevent them fully opening
- Install continuous handrails along corridors and stairs
- If thresholds or stairs impede wheeled equipment, fit temporary ramps to eliminate the risks associated with lifting equipment over thresholds.

9.9 Facility design for bariatric clients

Healthcare and other facilities providing care for bariatric clients need to provide adequate spaces for these clients. Any facility design should take into account both the current demographic profile of clients and changes that may occur in the future. Such planning should take into account SWLs and requirements for large people. Planning for a bariatric client's entry to a facility starts with ramps and handrails at entrances to facilitate access to the building. Ensure that bariatric wheelchairs are available and that the facility's main entrance has sufficient clearance. Lifts should have adequate door clearance and weight capacity.[17]

Increased door clearances and storage spaces are also necessary to accommodate oversized wheelchairs, stretchers, trolleys and beds, as well as mobile hoists. Although 1,500mm has been recommended as the design standard for doorway widths, larger doorway widths may be needed for diagnostic and treatment rooms, inpatient rooms and surgical suites in areas where bariatric clients are treated.

For client rooms, increase the space for each room by approximately 10 square metres above the size of a standard room, and provide for a 1,750mm clearance around beds. This additional room space is necessary for specialised equipment such as wheelchairs and mobile hoists, as well as for additional nursing staff required to care for bariatric clients. If ceiling tracking is fitted into areas for bariatric care, ceilings require additional steel reinforcement to be designed into the structure.

In bathrooms, bigger shower stalls should feature heavy-duty hand bars. Other options for showers are multiple handrails, large seats and hand-held showerheads. Large toilet seats are also needed. Toilet fixtures and sinks should be floor mounted, although care should be taken that floor-mounted sinks do not interfere with wheelchairs. Bathrooms should be sized to allow for staff assistance on two sides of clients at the toilets and showers, for cases where both large people will be transferred and large equipment is needed.

17. Parts of this section were adapted from Wignall, 2008. See also Collignon, 2008.

9.10 Overview of upgrading facilities

For facilities with limited resources, and for home-based care, upgrading existing facilities is often the most feasible option to make existing workspaces safer for both clients and carers. This part provides an overview of facility upgrading, describes the assessments of existing spaces as part of planning upgrades, and outlines some strategies for upgrading facilities.

In many cases it may be feasible to modify existing buildings and spaces to allow more effective moving and handling of clients. For large organisations, such as facilities operated by DHBs and private hospitals where extensive renovations or new buildings are being planned, the design features covered earlier in this section may prove to be most relevant.

Where existing facilities pose difficulties for moving and handling people, the upgrading of facilities and spaces leads to improvements in client care and carer efficiency. Design improvements are likely to decrease client care costs substantially, despite the initial set-up costs for modifications and equipment. For home care clients, it may mean that the clients can remain at home rather than move into managed care facilities. It may also reduce the number of home visits, or the time requirements of carers making home visits. Estimates of the payback time from the costs of facility upgrading and moving and handling equipment range from two to four years.

BOX 9.5

Example of building modifications reducing injury risks

The case described below illustrates how a simple redesign of flooring reduced risks to staff at a facility in Australia.

'WorkCover NSW undertook a study to investigate serious shoulder injuries associated with moving a loaded mobile lifting hoist between a bedroom and an ensuite. The study found that injuries were caused by the high forces involved in pushing the hoist over a ridge in the floor (an edging strip between the carpet of the bedroom and the vinyl of the ensuite). Due to the narrow doorway into the ensuite (740mm) the staff member needed to stop the hoist at the entrance and carefully pull it through the door to avoid a striking risk. The resultant pull force measured 44kg, which exceeded maximum limits for initial force recommended by Snook. Redesign of the floor coverings to ensure flat joins between different floor types, combined with a wider doorway, would reduce risks for staff moving a loaded hoist from bedroom to ensuite.'

Source: WorkSafe Victoria, 2007, p. 38

There are also likely to be other benefits, such as improvements in the quality of care, increased carer morale and decreased associated costs. There are also potential benefits for clients. Cost savings have been estimated to be as high as five times the upgrading and equipment costs, but more commonly are around two times.[18]

18. Cohen et al, 2010, p. 43.

Examples of design features that may be included when upgrading facilities are shown in Table 9.3.

TABLE 9.3 IMPROVING FACILITY DESIGN AND FUNCTION IN EXISTING FACILITIES

Type of facility development	Examples of design features for moving and handling people
Upgrading an existing facility	Ceiling tracking installed Providing access for mobile hoists Installing handrails Doorways widened Bathrooms re-designed Equipment storage areas added
Specific modifications to small units and homes	Ceiling tracking installed Increasing space to accommodate equipment in toilet and shower areas Providing access for mobile hoists Providing ramps to bypass stairs Installing handrails

Opportunities for modifications to buildings and facilities may also arise where a hazard or other problem for moving and handling is identified. When building renovations are planned for other purposes, there can also be opportunities to include changes to improve moving and handling and reduce hazards and injury risks.

9.11 Assessing existing spaces for upgrading

A key phase in building and facility renovations is to carry out a review and assessment of the existing spaces in terms of their suitability for moving and handling. The main features relevant to assessing existing spaces for building renovations are likely to include:

- The current mobility profile of clients
- An inventory of existing moving and handling equipment
- What additional equipment is required for improving client mobility and carer safety
- Spaces required for moving and handling
- Modifications needed to existing spaces
- Future-proofing the facility for changes in types of client or facility use.

Client profile and renovations

Information about assessing client mobility is included in Section 3 Risk assessment. If the renovation is for a single client living at home, the assessment will include:

- The current mobility of the client
- Any changes in client mobility or profile
- The extent to which carers will be required to assist the client, and what equipment will be needed for that.

It is also useful to look at the number and costs of carers needed compared with the potential costs of equipment or renovations. Sometimes it will cost less to upgrade facilities and procure suitable moving and handling equipment.

For small and medium facilities, such as those catering for 10-20 clients, a client profile will be needed. The client profile should include:

- An assessment of the mobility status and cognitive status of clients
- An inventory of existing moving and handling equipment
- Possible future purchases or acquisitions of new equipment based on the mobility profile of clients.

Descriptions of moving and handling equipment are included in Section 7 of these Guidelines.

Client destination assessment

One approach recommended for planning spaces for moving and handling is described as a 'client destination assessment'.[19] This involves identifying the destination points for clients to which they need to be moved. There are two types of client destination points:

1. Those used by carers to provide client care
2. Those used by clients for involvement in activities and relationships that are important to them.

Information on the reasons for client movements and the destinations to which clients are moved can then be used to:

- Identify any changes needed to spaces to ensure they are suitable for the types of equipment needed for moving and handling
- Develop a facility upgrade design that supports the equipment needed and encourages self-mobilisation of clients to maintain and improve client functioning
- Plan the types of space that assist carer efficiency by reducing turns and travel distances along the routes to the most frequent destinations
- Identify floor coverings, handrail locations and rest areas that encourage both the assisted movement of clients and client self-mobilisation.

For specific medical and residential care facilities it may be useful to distinguish short-stay, acute-care rooms and spaces from long-stay residents' rooms and spaces, bearing in mind that these may change. One practical way to carry out the assessment is to walk the route with the equipment and client, noting all the risks and difficulties encountered along the way. Identify redesign solutions for each of the hazards and risks encountered. In large facilities, the functions of rooms and spaces may change considerably, so future proofing should be considered.

Short-stay, acute-care rooms and spaces

In short-stay care facilities, such as acute-care hospitals and rehabilitation facilities, movements to specific destinations usually start from clients' rooms. Client movements between locations may be by wheelchair, stretcher or hoist. The following destinations may be relevant for the assessment process:

- Toilets
- Bathing and showering areas
- Changes in clients' rooms owing to changes in acuity or preparing for client discharge
- Diagnostic and testing areas for examination

19. This section has been adapted from Cohen et al, 2010, p. 35.

- Surgical suites
- Therapy areas for group support and therapy
- Lobby, cafeteria, vending machines and outdoors for visiting, exercise, food and a change of scenery.

Long-term-care resident rooms and spaces

In long-stay client facilities, such as chronic care hospitals and residential care facilities, the following activities may require transport by wheelchair or hoist to particular destinations:

- Toilet in a private or shared bathroom
- Bathing and showering in an adjacent room or a shared facility
- Dining in a shared dining area
- Meeting places for residents and groups such as family, friends and organisations
- Exercise spaces that may be outdoors, exercise rooms or group exercise spaces
- Examination and treatment rooms and spaces
- Special interest activities, such as craft rooms, kitchen and chapel
- Socialising, such as tearoom, lounge, outdoors and corridors (by walking or assisted movement)
- Therapy, such as physical, occupational and speech therapy areas.

Modifications needed to existing spaces

As part of the assessment process, it is useful to consider the specific types of modification and feature that may be needed to reduce hazards for moving and handling. Table 9.4 lists some of the common types of modification that are likely to improve moving and handling operations.

TABLE 9.4 EXAMPLES OF SPECIFIC MODIFICATIONS TO FACILITATE MOVING AND HANDLING

Type of modification	Purpose of modification
Doorways widened	Improve access for wheelchairs, mobile hoists and electric beds
Door sills and steps removed or bypassed	Improve access for wheelchairs, mobile hoists and walking frames
Handrails fitted	Improve safety in bathrooms, showers and toilets
Floor coverings or separators changed	Improve mobility for wheelchairs and mobile hoists or improve infection control
Electrical wall plugs installed	Access for charging batteries on mobile hoists and wheelchairs or installing electric beds
Room layout changed	Improve access for wheelchairs, mobile hoists and electric beds Space requirements for manoeuvring equipment Provide storage space for equipment

Following a moving and handling needs assessment, specific modifications are planned, which include details of the changes needed in the building and client spaces to use the equipment required for moving and handling.

9.12 Strategies for upgrading facilities

There is a series of steps needed in the process for planning and implementing renovations in healthcare facilities (see Box 9.6). These steps can be adapted to suit the scope and budget available for a specific renovation project.

For housing modifications, the Ministry of Health provides details about application procedures through the website 'accessable' (www.accessable.co.nz). It also provides a process document for complex housing modifications.[20]

BOX 9.6

Example of steps for renovation of health facilities

1. Perceiving the problems and determining that they are solvable
2. Appointing a medical facilities consultant and a building designer (such as an architect)
3. Assessing the facilities to identify precisely the renovation needs
4. Prioritising the facilities and the work to be done in them
5. Establishing a budget not only to cover the costs for the proposed renovations but also for unanticipated work that arises during the renovations
6. Agreeing with the stakeholders in each facility on the renovations needed
7. Developing designs and technical specifications with cost estimates
8. Contracting the construction work to private agencies or a government department
9. Supervising the construction and responding to unforeseen changes
10. Confirming that the construction has been carried out as was designed and specified
11. Installing equipment and commissioning (starting to use) the renovated space
12. Formal inauguration of the facility.

Source: Mavalankar & Abreu, 2002, p. 26

As well as the technical features for new building design and building renovations, some key steps to include when planning building renovations are:

- The formation of a project planning group to steer the project and solicit input from key staff and user groups. This group should include a moving and handling specialist and the health and safety manager. For a client living in their own home, the client, family members, primary carers and the builder may need to meet to put a plan together
- Discussions with managers and staff regarding features needed for effective moving and handling, given the client profile of the facility or unit

20. See Ministry of Health, 2008.

- The identification of spaces and design features in the existing facility that need improvement
- The development of the draft plan for the new facility, or a list of changes needed
- Communication of the construction schedule or timetable to key user groups prior to and during the construction phase
- The development of a plan for maintaining services during renovations
- Planning a post-occupancy review report after the renovations have been completed and the area is fully operational. This report should be archived and used for future projects as a guide or reference.

Maintaining services during renovations

Undertaking a major building construction or renovation project at a health facility is a challenge that can be fraught with unanticipated events that can disrupt services and have major impacts on staff and clients. For a facility and its associated services to continue functioning adequately during a building or renovation project, a detailed transition plan is needed to allow staff to continue to deliver quality care in an efficient manner.

Many project managers spend a great deal of time on architectural and construction planning. The transitional planning for service delivery that is essential to a project's success can easily be overlooked, especially in terms of impacts on clients, staff and others. Failure to plan for transitional operations during a renovation project can result in substantial increases in staff workloads, delays in scheduled service delivery and delays in the renovation timetable, all of which can compromise client quality of care.

Before completing a renovation plan that involves building modifications, consider the interim moves and adjustments that may be required for the continued operation of units and services. Once the construction timetable has been prepared, develop a detailed plan of how the facility's services will function during each step of the construction process. Which rooms will be functional during each phase? What equipment will be out of service during each phase? What contingency plans (such as equipment loans and rentals) are needed to maintain functionality? What is the project's impact on client admissions, care and discharges? If the client is living in their own home, do they need to be moved into suitable accommodation while renovations are in progress to enable them to use the toilet and shower?

Communication is a key aspect of transition arrangements. Renovation projects involving multiple units require detailed planning to ensure effective communication with all affected groups. Disseminate a detailed move sequence for all units that require relocation prior to construction starting. Update the sequence during

construction as needed. This will enable support services that work with the affected units to plan for the move as well.

Some key issues to consider for a services' transition plan are:

- What aspects of the shift from the existing system to the completed renovations will be conducted by outside movers, equipment suppliers and internal staff or units?
- How, when and where will new equipment, furniture, fittings and signage be installed, inspected and inventoried?
- How will carers be trained in the use and maintenance of the new equipment?
- How will you brief staff about the new space, equipment and operational systems?
- How will you notify clients, staff and families of the changes?

Post-occupancy review

Once the building modifications have been completed and the new premises occupied, it is useful to carry out a post-occupancy review. Most new facilities have teething problems, such as lack of signs, fittings located in the wrong positions, and features that have not been finished properly.

When carrying out a post-occupancy review, develop a running list of issues, encouraging all staff to contribute. Conduct a formal post-occupancy assessment involving both user groups and the designers. Note positive and negative aspects of the new facility, and note which features need post-occupancy modifications. Transfer knowledge gained to other user groups and design projects. Key stakeholders should formally contribute to the review and archive the report for future reference.

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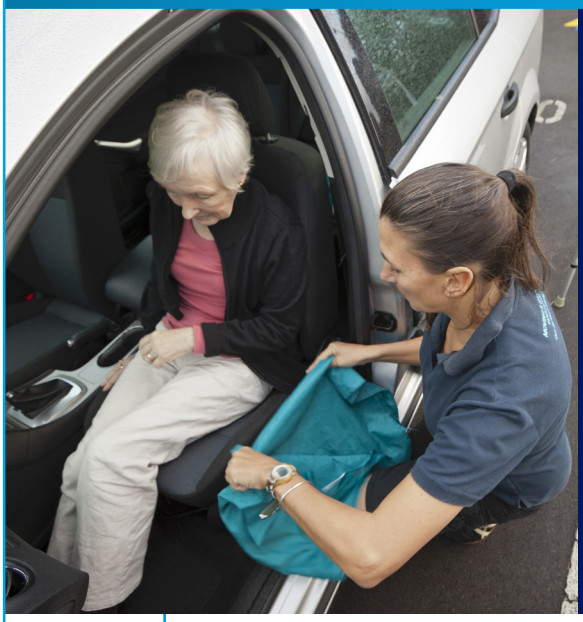
SECTION 10

Policy and programme planning

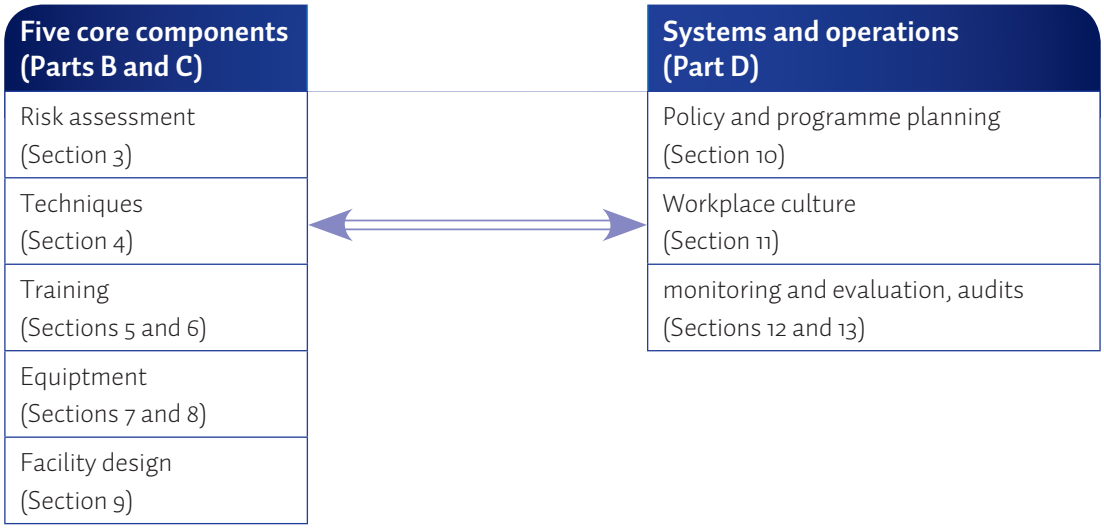


Contents

10.1 Setting up a moving and handling programme

Earlier sections of the Guidelines describe five of the six core components of moving and handling programmes. As noted previously, these five components, together with policy and programme planning, form the basis of any effective moving and handling programme. This section describes the policy and programme planning process. The next three sections outline two other essential aspects of moving and handling systems and operations – workplace culture and monitoring and evaluation. Figure 10.1 illustrates the links between the core components and moving and handling systems and operations.

FIGURE 10.1 SETTING UP AND MAINTAINING MOVING AND HANDLING SYSTEMS



To maintain effective moving and handling practices over time, systems and operations integrate a moving and handling programme into the culture of an organisation. Underpinning this integration into workplace culture is the development of a moving and handling policy and programme. Monitoring the long-term effectiveness of the programme in maintaining low rates of injury and reduced costs is the third part of systems and operations.

10.2 Core components of moving and handling policies and programmes

Systematic reviews have shown that staff training by itself is insufficient to reduce injuries resulting from moving and handling.[1] Other reviews have provided strong evidence that multifactor interventions or programmes are successful in reducing injuries. One review concluded that, to reduce injuries, there need to be three essential components in a programme:

- Worksite policy changes (e.g. adopting a moving and handling policy, management commitment)
- The purchase and implementation of new client moving and handling equipment
- Training on how to use new equipment, and on client handling techniques.[2]

This view is consistent with a comprehensive review of intervention strategies aimed at reducing musculoskeletal injuries resulting from handling clients, which concluded that 'multifactor interventions based on risk assessment programmes are most likely to be successful'.[3] This review highlighted seven commonly used strategies for use in a generic intervention programme:

- The purchase of equipment
- The education and training of staff (e.g. risk assessment, use of equipment, client assessment)
- Risk assessment
- Policies and procedures
- Client assessment system
- Work environment redesign
- Work organisation and practices changed (e.g. developing a culture of safety, work allocations that avoid repetitive work and long hours).

1. Martimo et al, 2008; Dawson et al, 2007.
2. Amick et al, 2006.
3. Hignett, 2003, p. 1.

BOX 10.1

Example of core components of a moving and handling programme

These are the basic but crucial components of a sustainable programme:

- **Training** – needs adequate content, duration and appropriately qualified trainers to deliver orientation and update training in a venue equipped for the job
- **Equipment** – whatever equipment is required in the working environment to use the practices shown during training. This needs to be in place as training begins, or preferably before
- **Risk assessment and documentation** – before a client is moved or handled, a risk assessment must be carried out and documented. Such assessments are important in deciding how the client should be moved and handled
- **Facility design** – the risk assessment of the planned area should involve competent people who are able to decide what and how much is required in that area, and where, to enable practices shown in training.

Researchers around the world have documented that to remove one of these components is to make the implementation unlikely to succeed.

Source: Moving and handling coordinator, Waitemata District Health Board

Based on research evidence and evidence-based reviews of moving and handling, there is general agreement about the core components of a moving and handling programme.

Some of the components vary across organisations, but each of those shown below is important. These components need to be included in the policy statement. Table 10.1 shows the specific core components of an effective moving and handling programme. Each of these components represents current best practice for moving and handling people. They are referred to as the 'six core components of a moving and handling programme'. Five of the components have been described in detail in earlier sections of these Guidelines.

TABLE 10.1 CORE COMPONENTS OF A MOVING AND HANDLING PROGRAMME

Programme component	Description
Policy on moving and handling	A written policy statement that includes the other components and is endorsed and resourced by senior management
Risk assessment protocols	Rules about risk assessments, performed prior to moving and handling people to ensure risks are controlled or reduced
Techniques for moving clients	A set of approved techniques for carers to use when moving clients
Training of all carers	Training of all carers both initially (induction training) and through annual updates
Equipment provided	Provision of the equipment needed to use the approved techniques
Facilities and spaces that allow effective moving and handling	Providing facilities and spaces that allow effective moving and handling techniques. Renovating and upgrading facilities if needed

10.3 Why is a moving and handling policy important?

The reason for developing and using a moving and handling policy is ultimately to reduce the risk of injury to staff and healthcare clients. Having such a policy helps to create a workplace culture where staff are trained, equipped and supported always to use safe moving and handling techniques.

BOX 10.2

The purpose of policy

The purpose of the policy is not punitive but supportive of both staff and administration… policy is not to be used to discipline employees but to educate them.

Source: Nelson, 2003

Policies serve three functions in organisations:

- They are formal statements about how the organisations or institutions should operate
- They drive the programmes that guide the actions of managers and employees
- They can direct resources to support programmes.

Having a written moving and handling policy establishes clear expectations that staff will use appropriate, low-risk ways to move and handle clients. The policy also highlights management's obligations to provide the necessary resources, training, equipment and facility design to develop and maintain an environment that is safe for clients and staff.

BOX 10.3

Integration of moving and handling with other policies

Employers need to recognise and address workplace hazards by supporting and implementing moving and handling policies. A moving and handling policy should be an integral part of an organisation's policies on safety, quality of client care and good employer-employee relationships. Having a moving and handling policy is a key performance indicator. How well clients are moved during care has a direct bearing on their wellbeing.

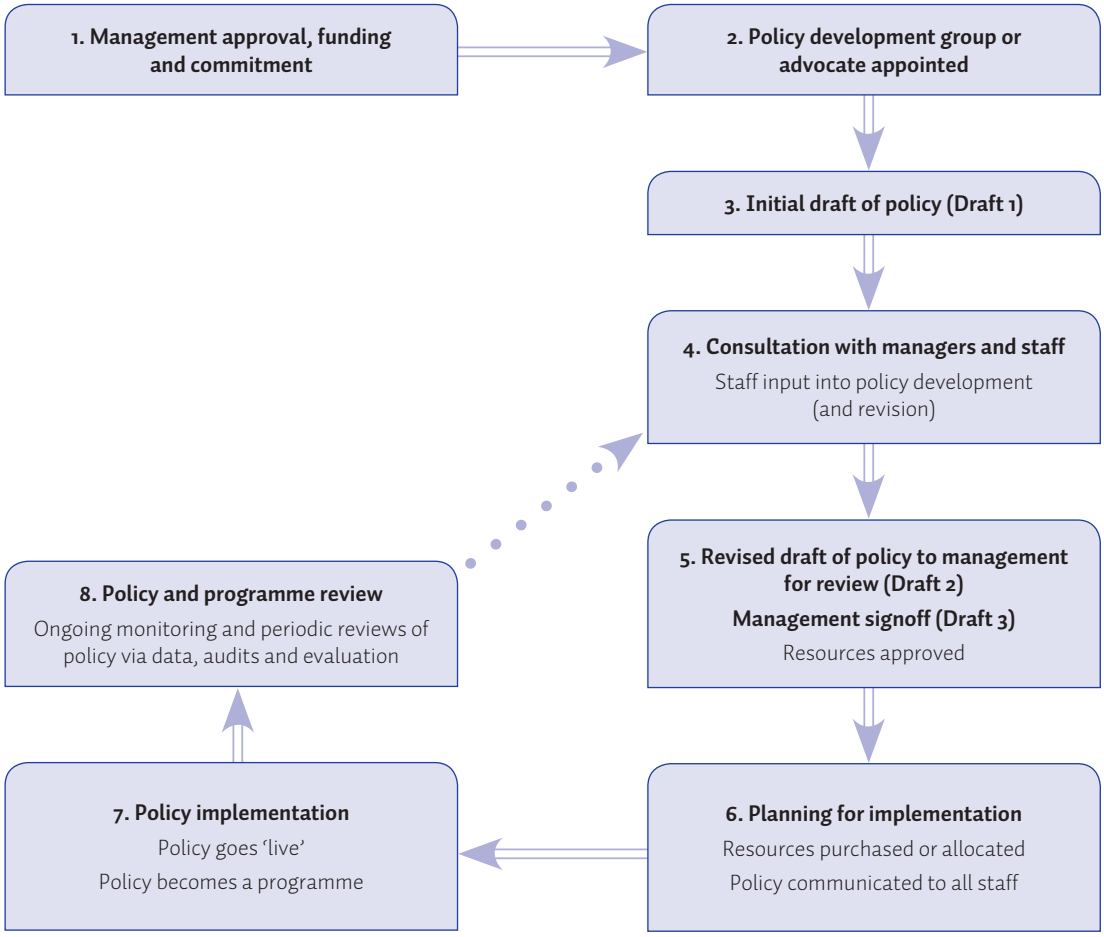
A moving and handling policy should be part of an organisation's broader set of health and safety policies, and often needs to be integrated with existing policies, for example those covering health and safety for both clients and staff, and the quality of healthcare for clients.

A moving and handling policy becomes a 'programme' once it has been adopted and implemented. Moving and handling programmes can also include incident and injury investigations and follow-up hazard controls (e.g. retraining staff, modifying facilities, acquiring additional equipment) and programme evaluations.

10.4 Developing and implementing moving and handling policies

There are eight general procedures in the development and implementation of effective policies. Figure 10.2 below illustrates the stages of developing and implementing a moving and handling policy.

FIGURE 10.2 DEVELOPING AND IMPLEMENTING MOVING AND HANDLING POLICIES



The stages shown in Figure 10.2 for developing and implementing a moving and handling policy are described in more detail below. These stages can be modified to suit the size and needs of an organisation.

1. Management approval for and commitment to developing a moving and handling policy are essential. Tangible management support includes providing resources and funding to turn the policy into an operating programme. A policy development group is formed, which is the driving force for development and implementation. In small organisations, one person (a policy advocate or 'champion') may carry out this role.
2. The policy development group or policy advocate (depending on the size of the organisation) steers the policy through to implementation. The development group must have sufficient status and management skills to influence

organisational change. As well, the group should have a range of skills and experience, particularly in moving and handling. The group should comprise (or consult) people throughout the organisation, such as those responsible for health and safety, nursing, medicine, finance and administration, human resources, engineering, maintenance, laundry and cleaning. Having a multidisciplinary group with effective networking skills will lead to better coordination across the organisation and the development of a more robust and workable policy.

3. When drafting the policy the group should review existing policies relevant to moving and handling, including those of other organisations and health systems. The group develops an initial written draft of the policy and makes it available in paper and electronic form to all staff in the organisation. It is a good strategy to contact managers in other organisations who have been involved in implementing similar policies, to get advice and ideas. The draft policy may be accompanied by supporting evidence such as the cost savings estimated from fewer staff injuries and reduced absenteeism and turnover and a 'business case' that sets out the resource implications of the proposed policy.

4. Consult relevant managers and frontline staff for broad input to ensure the long-term viability of and support for the programme. When the initial draft is ready (Policy Draft 1), it is circulated to staff throughout the organisation for discussion and comment. This feedback is then collated and reviewed by the policy development group. Following consultation, a revised version (Policy Draft 2) is prepared and sent to senior management.

5. Management reviews and approves the draft policy. During their review, management needs to consider the operational implications of the policy for the organisation as a whole. The management review will need to consider the:

   - Implications of the policy for existing operations
   - Issues that may arise during the initial policy implementation
   - Resources needed for the policy to be implemented effectively, and the approval of those or the reallocation of existing resources
   - Identification of managers or other staff who will have specific responsibilities for policy implementation
   - Procurement process, criteria for selecting equipment, setting up an equipment register, and maintenance systems
   - Approval of training needed to implement the policy
   - Approval of a communication plan to ensure the final version of the policy is sent to all unit managers and staff

- Confirmation of arrangements for policy auditing and periodic evaluations after it has been implemented
- Options for implementation (e.g. will it be rolled out in phases?)
- Confirmation of a policy start date or a rollout plan if the policy is to be implemented in stages, starting with selected units or wards.

Management then approves a final version (Policy Draft 3). The policy must be approved in principle and also be supported with funding and other resources. For example, there should be resources for staff to attend training during working hours and for additional staff needed to fill any gaps.

6. Once formally adopted, an implementation plan is developed to move the policy into a programme. The 'programme implementation plan' will include decisions on organising activities and events to implement the policy, such as management resources, funding, logistics and staff training. The final policy and the plan for its implementation are communicated to all people affected. Following the management review and revision of the policy, the final version is sent to the policy development group and designated managers to ensure the necessary resources are in place before the start date. This will include the training of managers and staff in the principles of the policy, including any new or updated moving and handling techniques. The policy development group will also initiate the policy communication plan and brief the managers and staff who will be advisers and problem-solvers during implementation.

   It is likely that some programme components will need to be organised prior to the full programme rollout, especially in small organisations. For example, facility upgrading and equipment purchase and storage may need to be organised ahead of the formal implementation. Other programme components that are likely to need early implementation are risk assessment protocols, staff training and equipment maintenance systems.

7. The policy goes 'live' at the agreed date and becomes an operating programme. In large organisations there may be a policy 'rollout', where some units or wards initially implement the policy, followed by others several weeks or months later. Teething problems are inevitable, so it is vital that policy advisers and problem-solvers are available during the initial implementation, and can communicate any necessary 'fixes' and adaptations.

8. The policy is reviewed and updated periodically. The initial programme implementation should be monitored for a specified period (e.g. three months) and a review meeting held. Lessons learned from the initial implementation should be included in a revised implementation plan to be used in other units. During the initial implementation, unanticipated problems and concerns can be expected. These need to be managed adequately. For example, where specific aspects of the programme are not working, unit managers should have

responsibility for organising fixes, and communicating these fixes to the policy development group.

Once the implementation phase is complete, the role of the policy development group changes. It now focuses on:

- Setting up auditing systems
- Monitoring the programme implementation and ensuring that relevant data are collected (e.g. on incident reports, injuries, absenteeism and staff turnover) and that the data can be linked to moving and handling events
- Organising periodic evaluations of the programme (e.g. every two or three years).

The programme is updated when needed to reflect changes in the organisation and client profiles and changes in technology, equipment and the workforce.

10.5 Writing the policy

The written policy sets out the organisation's commitment to client moving and handling by stating the standards and approach required. It should encompass all the components essential to an effective programme, including guiding principles, management and staff roles and responsibilities, organisational reviews, client risk assessments and handling procedures, training, equipment, facilities, monitoring and evaluation.

The policy should be practical and applicable, with client and staff safety at its core. The initial sections of the written policy should establish the purpose of the moving and handling policy, and that manual lifting by staff is unsafe for both clients and staff and is therefore not permitted. It should also include programme goals for reducing staff injuries and improving client safety, care and outcomes.

The policy title should communicate the policy's purpose. In some organisations descriptive titles – such as Zero-lift Policy and LITEN-UP Policy – are used to help staff remember the policies' intent easily. Titles such as No-lift Policy are commonly used in some countries.[4]

Table 10.2 shows an example of a generic outline for a policy document. Appendix 10.1 at the end of this section provides a policy template that can be adapted to suit the requirements of specific organisations. The amount of detail in a written policy will depend on the size and type of organisation.

4. European Agency for Safety and Health at Work, 2007, p. 7.

TABLE 10.2 GENERIC OUTLINE FOR A MOVING AND HANDLING POLICY

Heading	Description of content
1. Purpose	Brief statement of purpose of policy. An example is: 'This policy, known as the Client Moving and Handling Programme, is to ensure that employees use approved client moving and handling techniques in all cases where client movement and handling is needed.' Also acknowledge employer obligations under relevant legislation, such as health and safety workplace legislation
2. Policy	A paragraph that provides a brief rationale for the policy and an elaboration of its purpose. The statement includes the name of the organisation
3. Procedures	This usually includes descriptions of the following policy components: A. Compliance B. Client or client moving and handling requirements C. Training D. Moving and handling equipment and aids E. Client moving and handling programme F. Reporting of injuries and incidents (e.g. near misses)
4. Definitions	Definitions of key terms in the policy document, such as: • High-risk client handling tasks • Unsafe manual handling • Moving and handling equipment and aids • Culture of safety
5. Delegation of authority and responsibility	This describes the policy responsibilities of all main groups of staff. Specific responsibilities are usually described for: • Chief executive or director • Managers • Employees • Maintenance staff • Union officials

Procedures (Policy Section 3)

The procedures section of the policy should include:

- A statement about the need for compliance with the policy by all employees
- Client movement and handling requirements – avoiding hazardous handling tasks whenever possible, and using moving and handling equipment and other approved aids
- Training requirements for all staff handling clients, including for new staff, update training for existing staff, training when new equipment is introduced or there is a change in procedures, briefings following specific incidents, and task analysis in areas with unique or isolated risks
- The need for risk assessments (before moving or handling) and the control of risks
- The moving and handling equipment required, including equipment selection and procurement, equipment register, maintenance schedules, storage and battery-charging procedures
- Requirements to select safe transfer methods, including examples of the techniques that should be used for moving clients
- Facility design and upgrading
- Infection controls
- A statement and pathway on bariatric moving and handling (see Section 14 in these Guidelines)
- Emergency evacuation procedures for clients.

Definitions (Policy Section 4)

Include the definitions of the key terms contained in the policy document so that their meanings are as clear as possible. This will include terms such as high-risk client handling tasks, hazards, risk assessment, manual handling, moving and handling equipment and aids, and culture of safety.

Delegation of authority and responsibility (Policy Section 5)

The section on the responsibilities of the key staff running the programme should outline what is expected from each group in relation to the policy. It should emphasise that everyone is responsible for protecting their own health and safety, as well as the health and safety of others in the workplace. The policy's general message is the need to create a culture of safety for which everyone – managers and staff – is responsible.

In large organisations, the specific groups of staff and their responsibilities under the policy are:

- The chief executive and board of directors decide how the healthcare facility is run and how resources are allocated, and are responsible for overall health and safety compliance
- Senior managers are responsible for the success of the programme in their operational areas, and need to set a clear leadership example
- Unit or ward managers are responsible for the programme in their units or wards, and their duties cover all operational aspects
- The health and safety manager and client handling coordinator or adviser are the champions of best practice and organise aspects such as training, equipment purchasing and reporting to managers and staff. In some organisations this will also involve staff who are health and safety representatives
- Staff and contractors must follow safety procedures for their own safety and that of others in the workplace, and are responsible for carrying out client handling procedures correctly
- Unions and employee organisations should work in partnership with management and staff to create safer workplaces.

For small organisations, some of these responsibilities may be combined in a single group or person, but it is important that all key responsibilities are covered in the policy document.

Additional topics

Topics that could also be included in a moving and handling policy are:

- Admission procedures and forms for clients
- Staff recruitment and employment contracts (may need to include the physical capabilities required to perform tasks to allow pre-employment screening for suitability)
- Staff appraisals and performance measures
- Contractors, suppliers, visitors, volunteers and others
- Timing for the programme introduction
- Staff participation and feedback
- Consultation and ongoing communication
- Organisational and ward or unit reviews
- Recording and reporting data related to incidents and injuries

- Evaluating, reviewing and reporting progress
- Dealing with accidents, near misses and non-compliance
- Managing injuries and conditions that affect staff
- The identification of exceptions to the policy, such as any immediate life-threatening circumstances, and ways that specific procedures or plans could address them.

Note: All healthcare facilities and organisations providing care – either for clients in a facility or for clients living at home – should also have policies, plans and training that include managing threats or incidents of aggressive behaviour or violence towards staff.

10.6 Communicating the policy

For all the general stages of policy development and programme implementation shown earlier in Figure 10.2, communication throughout the organisation is crucial. Well planned and effective communication demonstrates commitment, and ensures that the views of people who manage and perform moving and handling are heard.

The policy development group (or advocate) will need a comprehensive communication strategy to make sure that the policy initiatives are coordinated and well understood. Table 10.3 shows the key elements for developing a communication strategy and examples of communication procedures for the various stages during development and implementation.

Audiences for communications about the policy and programme should include: management, staff, unions, clients and families, visitors, volunteers, suppliers, contractors, consultants, equipment designers and suppliers, facility designers, students and teachers, stakeholders, health and safety advisers, professional groups, disability managers, interest groups and associations, and media.

For the communication strategy you need to decide on the key messages for each of your audiences. Key messages include: what the policy is, why changes are being made, what the benefits are, when and how the changes will be made, what everyone's role is, what resources will be available and what evaluation will take place. There will also be specific and detailed operational messages for each employee group.

Other factors to consider are timing and frequency. It is important to keep up a steady flow of communication and to repeat key messages several times, preferably using different channels.

Specific communication channels to consider are:

- **Existing formal communication channels**: Staff newsletters, staff email networks, organisation web pages, audits, workplace visits by managers and supervisors, committee meetings, training sessions and incident investigations and reports
- **Informal channels**: Tearoom discussions, suggestion boxes, wall posters and day-to-day interactions.

TABLE 10.3 COMMUNICATION STRATEGY FOR POLICY DEVELOPMENT AND PROGRAMME IMPLEMENTATION

Policy development stage	Communication strategy	Examples of specific communication procedures
Initial draft of policy **(Draft 1)**(or updating of an existing policy)	Messages that the policy is being developed (or updated) and that staff input will be sought	Staff newsletters, memos to unit managers, staff meetings/briefings
Consultation with staff **Revision of policy** **(Draft 2)**	Copy of the initial draft (Policy Draft 1) and a summary of its main features circulated to all staff with invitation to comment and provide feedback. Electronic and paper copies of a feedback form are supplied to staff. Collate staff comments and archive for future reference. Revised version (Policy Draft 2) sent to management	Staff newsletters, email networks, organisation web page, suggestion boxes, memos to unit managers, regular staff meetings, special meetings to review draft policy
Management review and approval of final version of policy **(Draft 3)**	Managers review policy draft, revise where needed and approve final version (Draft 3). Unit managers receive final version of policy. Communicate summary version to all staff, with implementation plan and dates	Staff newsletters and email networks, memos to unit managers, organisation web page, staff meetings
Organisation of resources	Progress report to staff about resources being organised, equipment being purchased and plans for equipment allocation and maintenance. Managers hold meetings with staff to discuss implementation. Wall posters and other communications, including media releases, are prepared and distributed	Staff newsletters and email networks, memos to unit managers, organisation web page, staff meetings, wall posters displayed
Policy implementation	Policy becomes a 'live' programme, with an announcement of its implementation. Stories about the implementation process are disseminated. 'Fixes' for any problems during programme implementation are communicated	Staff newsletters and email networks, media releases, organisation web page, staff meetings
Policy review	Collation of implementation data, communication of successes and aspects where improvements could be made. Summary of revisions and 'fixes' to ensure the programme operates effectively are prepared and archived for future reference. Highlighting of successful units or wards	Memos to unit managers, staff newsletters and email networks, organisation web page, staff meetings

10.7 Reviewing the programme

Following programme implementation, the policy development group may transition into a programme review group, or perhaps another group can be created (or delegated to a manager). In any case, it is important to monitor and review the programme during the early stages of its implementation.

Some key tasks will be to:

- Set up communication strategies that provide opportunities for staff to comment on how the programme is working
- Set up a database that records incidents and injuries related to client handling and manual handling and the outcome details of any investigations (if there is not an existing database)
- Communicate about the programme and its evolution over time to all managers and staff. This includes the communication of successes and aspects where changes are being made. It could also include specific revisions and 'fixes' to ensure the programme operates effectively.

Sections 12 and 13 in these Guidelines provide specific strategies for programme monitoring and evaluation, and conducting programme audits.

10.8 Sustaining an effective moving and handling programme

A common experience following the setting up of new initiatives in the workplace is that such initiatives fade and dissipate over time as staff change, and systems revert to the previous styles of operation. After the successful launch and implementation of an injury prevention programme, management may reduce funding and resources. Once a programme is operating successfully, it may not seem to need special funding. For example, moving and handling staff may be made redundant after injury rates drop.

Other moving and handling systems, such as training and equipment maintenance and renewal, may gradually decline. As a result, there is typically a reduction in the level and quality of training and the attention given to the ongoing procedures. There might be a lack of support for clinical staff in the management of complex clients, and a lack of staff compliance with the techniques required for effective moving and handling.

To sustain an effective moving and handling programme, all of the components identified earlier in this section are necessary. In the longer term, there are both threats and opportunities associated with reducing injury rates for carers involved in moving and handling people (see Box 10.4).

The threats include an ageing healthcare workforce, increasing numbers of clients who are overweight and obese, people living longer at home, and the care needed for loss of mobility due to ageing. The opportunities include developments in moving and handling equipment and technology, and a growing recognition of the need for a well trained workforce in both healthcare and community services.

For the successful sustainability of moving and handling programmes in New Zealand, some key themes are likely to be:

- The continuing development and updating of moving and handling programmes
- Having a local champion or advocate for moving and handling in every facility involved in moving and handling people
- Establishing strategic links with key groups and organisations, including regional linkages for moving and handling coordinators
- Integrating moving and handling with other systems within an organisation, including other health and safety programmes, training programmes, audits, and performance targets
- Ensuring programme continuity during turnover in management and staff.

BOX 10.4

Emerging issues for future planning in healthcare and community services

A national audit report in Australia, published in 2005, identified several emerging issues for the health and community services industry. These issues are also relevant to New Zealand.

- Residents/Patients getting older, heavier and more disabled
- 'Ageing in place' without facilities to deal with increasing dependencies
- Increasing numbers of special needs patients (e.g. Down syndrome, drug- and alcohol-affected patients, dementia patients)
- Client-related violence
- An ageing workforce
- Greater use of relatively unskilled aides, personal carers
- Increasing use of agency staff.

Source: Design 4 Health, 2005, p. 5

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Appendix 10.1 Example of a client moving and handling policy

Client moving and handling policy[5]

1. **Purpose**: This policy, known as the *Client Moving and Handling Programme*, is to ensure that employees use safe client handling and movement techniques whenever client handling and movement occurs. This policy is consistent with the obligations of employers to ensure health and safety in the workplace as required by *Health and Safety in Employment Act (1992)*, and the 2002 Amendment to the Act.

2. **Policy**: (Name of Organisation) wants to ensure that its clients are cared for safely, while maintaining a safe work environment for employees. To achieve this, a *Client Moving and Handling Programme* will be implemented in order to ensure the required infrastructure is provided to comply with components of the client handling and movement policy. This infrastructure includes client handling and movement equipment, employee training, and a 'culture of safety' approach to safety in the work environment. All staff should assess client handling tasks before moving clients to determine the safest techniques to use. Moving and handling equipment and other approved client handling aids should be used whenever feasible to avoid the unsafe moving and handling of clients.

3. **Procedures**

   A. **Compliance**: It is the duty of employees to take reasonable care of their own health and safety, as well as that of other staff and their clients during client handling activities by following this policy.

   B. **Safe Client Handling and Movement Requirements:**

      - Avoid hazardous client handling and movement tasks whenever possible. If unavoidable, assess them carefully prior to completion
      - Use moving and handling equipment and other approved aids for client handling whenever possible, in accordance with instructions and training for these aids.

   C. **Training**:

      - Staff will complete client handling and movement training, including risk assessment and equipment training, initially, annually, and as required to correct the improper use or understanding of safe client handling and movement
      - Supervisors should maintain training records for three years.

5. Adapted from Nelson, 2003.

D. **Moving and Handling Equipment and Aids:**

- Moving and handling equipment and other aids will be accessible to staff
- Moving and handling equipment and other aids will be maintained regularly, have certificates of fitness displayed where required, and be kept in proper working order
- An equipment register will be kept to record details of equipment purchased, when items are due for maintenance, any incidents involving equipment and repairs, and other information
- Moving and handling equipment and aids will be stored conveniently and safely.

E. **Client Moving and Handling Programme**: The *Client Moving and Handling Programme* will be implemented in all units, and will include the following key programme elements:

- Workplace assessments
- Use of moving and handling equipment and transfer aids
- Client assessment and care planning for safe client handling and movement
- Specified techniques for safe client handling and movement
- Incident and injury reporting procedures.

F. **Reporting of Injuries and Incidents**:

- Staff will report all incidents and injuries (including near misses and equipment malfunctions) resulting from client handling and movement to the occupational health and safety manager (or the equivalent position in a small organisation)
- Managers and supervisors will maintain incident reports and injury statistics as required by policy managers.

4. **Definitions**

A. **High-Risk Client Handling Tasks**: Tasks that have a high risk of musculoskeletal injury for staff performing the tasks. These include – but are not limited to – transferring, lifting, repositioning, bathing clients in bed, making occupied beds, dressing clients, turning clients in bed, and tasks with long durations.

B. **Unsafe Manual Lifting**: Lifting, transferring, repositioning and oving clients using a carer's body strength without the use of moving and handling equipment or aids to reduce forces on the carer's musculoskeletal structure.

C. **Moving and Handling Equipment and Aids**: Equipment and aids used to move, transfer and reposition clients. Examples include slide sheets, transfer boards, slings, mobile hoists and ceiling hoists.

D. **Culture of Safety**: The collective attitude of employees taking shared responsibility for safety in a work environment and, by doing so, providing a safe environment of care for themselves as well as clients.

5. **Delegation of authority and responsibility**

A. **Chief executive/director** shall:

a. Support the implementation of this policy

b. Support a 'culture of safety' within this organisation

c. Ensure there is a designated manager (or other person) responsible for workforce and client health and safety

d. Furnish sufficient moving and handling equipment and aids to allow staff to use them when needed for client handling and movement

e. Furnish acceptable storage locations for moving and handling equipment and aids

f. Provide routine maintenance of equipment

g. Provide staffing levels sufficient to comply with this policy.

B. **Managers** shall:

a. Consult the Health and Safety Manager (or designated moving and handling adviser) on all aspects of client moving and handling

b. Ensure high-risk client handling tasks are assessed prior to completion and are completed safely, using moving and handling equipment and other approved client handling aids and appropriate techniques

c. Ensure moving and handling equipment and aids are available, maintained regularly, in proper working order, and stored conveniently and safely

d. Ensure employees complete initial and annual training, and training as required if employees show non-compliance with safe client handling and movement or equipment use. Maintain training records for a period of three years

e. Refer all staff reporting injuries due to client handling tasks to Health and Safety

f. Maintain incident reports and injury statistics as required by the Health and Safety Manager

g. Support a 'culture of safety' within their units.

C. **Employees** shall:

   a. Comply with all aspects of this policy

   b. Use proper techniques, including moving and handling equipment and aids where needed, during the performance of client handling tasks

   c. Notify their supervisors of any injury sustained while performing client handling tasks

   d. Notify their supervisors of any need for retraining in the use of moving and handling equipment and aids, and moving techniques

   e. Notify their supervisors of lifting equipment or aids in need of repair

   f. Support a 'culture of safety' within their facilities.

D. **Maintenance staff** shall maintain moving and handling equipment in proper working order.

E. **Union officials** shall support the policy intent and monitor programme effectiveness in partnership with administration.

SECTION 11

Workplace culture

Contents

11.1 Why is workplace culture important?

Workplace culture, or organisational culture, refers to the shared values, attitudes and expectations about work patterns and behaviours that are predominant among people and groups in an organisation. It can also been described as 'the way things are done around here'. Workplace culture influences the way that people interact with each other and how they carry out their work activities.

With any new programme or initiative within an organisation, workplace culture may facilitate or impede how well the programme will work. Moving and handling programmes need systematic planning to ensure workplace culture supports programme implementation. This section covers two key aspects of workplace culture: establishing effective communication relating to moving and handling; and developing a culture of safety within the workplace.

Communication is a core part of the implementation and routine delivery of an effective moving and handling programme. The first part of this section provides an overview of developing a communication plan then describes some specific communication strategies, focusing primarily on communication with clients and their families and communication among staff.

The culture of safety in an organisation is a specific part of the organisational culture. It refers to management and employee beliefs and expectations regarding work activities relating to hazards, risks and the prevention of accidents.[1] While the concept of a culture of safety has implications for the behaviour of individuals, it is not simply the aggregated behaviour of individuals. A safety culture is a feature of the way an organisation operates as an organisation. The second part of the section provides ideas for the development of a culture of safety.

1. See Health and Safety Executive

11.2 Developing a communication plan

Having an effective communication plan is important, whether you are introducing new programmes and policies or modifying current policies and practices. New programmes and policies will generally require a more comprehensive communication plan. For sustaining any programme or initiative for several years, it is important to have an ongoing communication plan that keeps moving and handling in the picture, and regularly communicates its importance to a range of people.

Communication creates linkages between people and helps to establish a common understanding within an organisation of what a moving and handling programme is, and how moving and handling tasks should be carried out. The role of communication has been mentioned in some of the earlier sections. This section highlights specific components that form the core of a communication plan. Table 11.1 shows the main components of a moving and handling communication plan.

TABLE 11.1 COMPONENTS OF A COMMUNICATION PLAN FOR MOVING AND HANDLING

Plan component	Description and examples
Objectives of plan	What are the purposes of the communication plan? Inform staff and clients about the programme and its purposes Provide progress reports on implementation Ensure stakeholders have opportunities to comment on the programme Notify staff about clarifications or modifications to programme
Audiences or stakeholders*	Who are the key audiences or stakeholders for communications? Includes a list of key stakeholder groups, such as: • Healthcare staff • Occupational health and safety staff • Clients and their families • Management and supervisors • Procurement and finance staff • Contractors and bureaux staff
Message content	What types of message should be sent to each stakeholder group?
Modes of communication	What communication modes or tools are to be used? For example, web page items, email messages, monthly email newsletters, paper memos, posters on walls
Management of the plan	Who has responsibility for managing the communication plan? Ensure the plan has an allocated person responsible for it
Timetable	What is the annual programme for communications? Itemise occasional and regular communications media used in the organisation that should (or could) include messages about moving and handling

*The generic term 'stakeholder' refers to anyone who might have an interest in the moving and handling programme.

For many organisations, a communication plan refers primarily to organisational communications intended for clients and the general public. In contrast, a moving and handling communication plan should facilitate the implementation of the programme by informing all stakeholders about the programme, and ensuring adequate communication links that are essential to the effective operation of the programme. The plan can be a relatively simple one for small organisations. Large organisations that have multiple units and extensive communication systems need more complex communication plans. Other agencies, such as contractors and suppliers, may also need to be informed about the policies and programmes operating within a facility.

Developing a communication plan

A preliminary step in developing a moving and handling communication plan is to describe the general purposes and specific objectives of the communication plan. Some examples of communication objectives might be to:

1. Inform all key stakeholders, including staff and clients, about the programme and its purposes
2. Ensure effective two-way communication links are established between key stakeholders and the communications manager and the group or person driving the moving and handling programme
3. Provide progress reports on the development and implementation of the moving and handling programme to the stakeholders, including decision-makers
4. Provide opportunities for stakeholders to comment on, or ask questions about, the programme
5. Provide staff and other stakeholder groups with clarification on specific aspects of the programme, and notify them of any modifications to the programme.

Audiences or stakeholders

A key task is to identify the key audiences or stakeholders in the communication plan. Moving and handling programmes are likely to be relevant to a range of departments and units within an organisation. The people that might be included in a communication plan are shown below. Note that this is not an exhaustive list.

- Healthcare medical staff
- Occupational health and safety staff
- Clients and their families
- Middle management and supervisors
- Safety committee, accident review board

- Procurement and finance staff
- Contractors and bureaux representatives
- Education and training providers
- Unions
- Facility management, engineering and project management sections
- Housekeeping, cleaning and laundry staff
- Orderlies
- Supply, processing and distribution staff
- Infection control staff
- Facility owners, board of directors
- Ambulance staff.

Message content

There are several types of content that could be considered in messages related to moving and handling. A core theme for all managers and staff is progress on implementing the programme and its evolution over time. Specific items could include successes and changes made. These include specific revisions and 'fixes' to ensure the programme operates effectively. They could also include simple but important items such as reminding managers, supervisors and staff of annual training updates. Another communication strategy is to include frequently asked questions about the programme and answers to those questions.

Routine messages to consider sending at regular intervals could include:

- Lists of moving and handling equipment and storage locations
- Large equipment items acquired and disposed of
- Equipment demonstrations
- Plans for upgrading buildings and specific facilities
- Changes in occupational health and safety staff and operations.

An important part of a communication plan is to provide opportunities for staff to comment about how well the programme is working, and suggestions on how improvements can be made. Gather and communicate stories from specific sections or units on their moving and handling initiatives.

Modes of communication

A communication plan is most effective when multiple modes or types of communication are used. Make use of the organisation's web pages, email messages, emailed newsletters for staff, staff meetings, posters and information provided to clients, preferably pre-admission but certainly during admission. Where DVDs or video messages are provided for clients and their families, or for new staff induction programmes, consider including messages about moving and handling policies.

Plan to allow two-way communication so groups such as staff, clients and contractors can provide feedback to management on the programme. This can occur as it is rolled out (if it is a new initiative), for changes to existing policies and practices, and post implementation as a way of continuous quality improvement. Provide staff and clients with an email address to which they can send comments and suggestions. Consider putting suggestion boxes at strategic points.

Publicise good suggestions at regular intervals. This lets staff know that their suggestions are being read and considered. A further step is to post on a notice board or web page a list of suggestions received and their outcomes. If suggestions are not considered suitable for implementing, explain why. Be sure to remove any details that could identify staff – unless those submitting suggestions have given their explicit permission for their messages to be published with identifying information.

Management of the communication plan

Ensure the communication plan has a specific coordinator or group to manage the plan. In large organisations, communication about the moving and handling programme may be added to the responsibilities of existing communications staff. Ask the communications coordinator to develop an annual timetable for communications about the moving and handling programme. The annual timetable could itemise occasional and regular communications media used in the organisation that could include messages about moving and handling.

11.3 Communicating with clients and their families

A key part of the communication plan is informing and educating clients and their families about the moving and handling programme. This includes what the programme is about (emphasise client safety and quality of care) and why there should be no manual lifting (see Appendix 11.1). Communication with clients should begin before admission to the facility, if possible. Information in brochures or posters can also help clients and their families to understand the programme and its benefits for both clients and staff. This will help clients feel comfortable about moving and handling practices. Where appropriate, include family members in the communications. Clients should be encouraged to ask questions about the moving and handling programme and practices.

Informing clients about what is involved when using specific transfer techniques and equipment can increase acceptance by clients, especially if hoists or other aids may be used (see Box 11.1). Specific policies, such as not catching a falling client and not lifting a fallen client off the floor, should also be explained to clients and their families when appropriate.

BOX: 11.1

'I just can't do it any more, I'm hitting 90...'

We had a 90-year-old man who told his carers he could not use the hoist, which was a puzzle. On further questioning, it turned out that he thought he had to hold the crossbar of the hoist and physically lift himself. No-one had explained to him that he would be carried in a sling by the hoist. People are sometimes negative towards hoists or patient handling equipment because they have not been told about how it actually works and why it is safer.

Source: Manual handling coordinator, District Health Board (DHB)

Prior to moving a client, good communication between the carer and client should ensure an understanding about what is to happen. Allow the client time to move or adjust themselves after instructing them on what to do. Part of a carer's communication with a client should include a check on the client's ability to hear and to understand what is said. Also check if the client has any hearing, cognitive or visual impairment that may affect their ability to understand and see (you may demonstrate how you wish to move or handle the client). If there is a language barrier, use simple language, speak slowly and, if necessary, demonstrate the move to reassure the client. Where needed, use an interpreter.

By maintaining eye contact and communicating with the client there is better cooperation and it helps to avoid combative behaviour (see Box 11.2). Taking time to explain the moving and handling plan to a client may be perceived as time consuming by the carer, but if done well it will encourage compliance and acceptance, saving time in the long run.

Body language is also an important aspect of communication. A client can feel uncomfortable and unsafe if a carer appears unsure of the moving and handling techniques or equipment. It is important for carers to feel confident with the techniques and equipment being used, and to communicate confidence to clients.

BOX 11.2

Effective communication with clients

A carer told me her home care patient didn't want her to use the hoist to lift her. I had the carer come to training where we explained why hoists are better for moving patients. After this, she explained it to her patient, who was then willing to be hoisted. Often when I am asked by nurses to speak to a patient who won't be hoisted I find that no-one has told the patient why we use the hoist, and how they will be hoisted. There is nothing terribly dignified about having several pairs of hands grappling your body as opposed to being hoisted properly. You must deal with the patient's concern for their own safety and dignity. I have not had a patient who didn't agree to be hoisted after I have spoken to them. Take a little time to talk them through what you are going to do, and in a calm manner because it goes a long way to break down people's barriers and fears.

Source: Manual handling coordinator, DHB

Communication about falls management

There have been cases reported where staff were pressured to manually lift fallen clients who were conscious and uninjured. The pressure came from the clients or their families, who insisted on the clients being lifted immediately. In such cases, the carer needs first to complete a head-to-toe assessment to ensure no injury. Make the client on the floor comfortable while you get yourself organised. Inform the client (and their family and other staff if present) of the moving and handling technique you plan to use and, if necessary, remind them that the technique planned is to ensure both client and staff safety. Remember that the client is safe on the floor and is not going anywhere. The best time for this discussion is before the event happens. A robust risk assessment on admission should give the carer the opportunity to address this possibility and the client the chance to question the policy and be familiar with it.

Communication with and management of uncooperative clients

Clients may have particular views on how they like to be moved because 'this is how it was done', and they feel comfortable with it regardless of safety. Clients' non-compliance can sometimes be a problem, especially when they are to be moved by a hoist or a technique with which they are not familiar. It should be explained to clients and, if appropriate, their family members at admission that the hospital or residential facility has a policy requiring the use of equipment such as hoists to move

clients where carers consider this necessary, and that use of the equipment increases safety for clients and staff.

If the client still refuses:

- Staff should spend extra time with the client to develop their trust and to help them understand that a particular piece of equipment to be used increases client and staff safety
- Staff can also explain to the client's family the benefits of the equipment for the client and the carer.

Offer to demonstrate the equipment using a family member, and explain that it will not compromise the client's dignity, and that their comfort and security will be improved while reducing the risk of injury.[2]

BOX 11.3

Effective moving and handling reduces aggressive behaviour by clients

... this study documented a decline in injuries associated with resident assaults and violent acts towards nursing staff during resident handling tasks. Other studies have shown that using mechanical equipment to lift residents increases a resident's comfort and feeling of security when compared with manual methods. Manually lifting residents under the axilla [armpits] can be quite painful for residents and exert excessive forces on a resident's shoulder. The physical separation between the caregiver and the resident afforded by the use of the lift, particularly those with a known history of violence, could also explain the reduction in assaults on caregivers while using mechanical lifts.

Source: Collins et al, 2004, p. 210

All healthcare facilities and organisations providing care for clients living at home should have policies, plans and training that include managing threats or incidents of aggressive behaviour or violence towards staff.[3]

Previous research has indicated that when effective moving and handling programmes have been implemented, there has been a decline in assaults and violent or resisting behaviour by clients towards carers (see Box 11.3). One reason seems to be that using effective techniques, such as those involving hoists, increases clients' comfort and sense of security. In addition, the use of hoists increases the physical separation between carers and clients.

2. These points were adapted from Collins et al, 2006, p. 12.
3. For further information, see WorkSafeBC, 2005.

11.4 Communications involving staff

Communication between staff working together to care for clients needs to be effective. When working collaboratively, it is necessary to have a shared understanding of what is to be done when moving and handling a client. This comes about through having an organisational culture of safety where the training provided also facilitates communication among carers. When they move a client, no carer should be in doubt about what they are expected to do on 'ready, steady, move'. Training new staff involved in moving and handling can reduce ambiguities and misunderstandings about what techniques are to be used, and what is expected of each other.

Communicating information about changes in client status

Information about clients' mobility and moving and handling plans should be displayed clearly and documented regularly in the clients' notes. All messages about client status should be clearly dated and, if relevant, expiry or reassessment dates noted. This is an essential part of communication for client care. A case that highlights the importance of such practice was noted in an investigation following the death of a residential care resident after falling from a standing hoist (see Box 11.4). For organisations with staff working in shifts, any changes in client mobility status should be communicated clearly during handover reporting as well as in the clients' notes. To prevent incidents, handover systems between work shifts need to be audited to ensure they are working properly.

BOX 11.4

Health and Disability Commissioner investigation of accidental death of resident

In July 2007 Mrs A, who had been a resident at a rest home for three years, fainted while being transferred using a standing hoist. While Mrs A was secured in the hoist when she fainted, three staff were needed to lift her out of it and lower her to the ground. As a result of this incident, Mrs A suffered minor injuries to her arms and legs. Mrs A's transfer plan was subsequently changed from using standing hoist transfers to sling hoist transfers.

On 9 November 2007, despite the previous changes to her transfer plan, Mrs A was transferred [by Mr D, a caregiver with no formal nursing or caregiving training] using a standing hoist. During the transfer Mrs A again fainted. It appears that Mrs A either fell or was dropped to the ground, landing on her knees. Mrs A was later found to have bilateral femoral fractures. She died a short time later in hospital.

While Mrs A's lifting and transfer plan had been changed after the first incident in July 2007, there was doubt about whether the copy of the lifting and transfer plan (kept on the inside of her wardrobe door) was changed.

In the decision, the Commission noted that: 'Mr D's disregard of the changes to Mrs A's transfer plan was serious with very severe consequences. Mrs A had already fallen following a previous fainting episode. A plan was in place to keep her safe, and it was directed by Mr D's manager, a registered nurse. Mr D knew the plan but chose not to follow it. However well intentioned, this was not acceptable'.

Source: Health and Disability Commissioner, 2008. Search for: Decision 08HDC00469

Feedback on service delivery

Another type of information that could be communicated to staff are outcomes from reviews, audits, incidents and near misses. Any investigations carried out and their outcomes and follow-ups can provide valuable lessons for staff. Clients and their families may also provide both positive and negative comments relating to the clients' experiences. Generally, such information should be reported without the client's name, unless the client has explicitly requested to be identified. Such feedback is a useful quality measure, whether it is positive or negative, and should be encouraged.

BOX 11.5

Patients' views about moving and handling equipment

An audit of patients' experiences and perceptions at Waitemata DHB measured satisfaction with and themes around being hoisted, or moved with slide sheets. The results showed overwhelming patient satisfaction with being moved using slide sheets and hoists. It also clearly showed that those patients did not want to be moved manually. An important finding was the importance of communication between patients and carers during moving and handling.

Source: McMahon & Cranswick, 2010

Where feasible, clients' views and experiences relating to the use of moving and handling techniques and equipment should be included in client satisfaction surveys. A survey among clients in a large Auckland hospital indicated that clients felt safe when being hoisted or moved with slide sheets, and that the use of this equipment maintained their dignity (see Box 11.5). A few also felt exposed or anxious. The audit, carried out by the moving and handling team, also provided useful feedback on and justification for their activities. In addition, it identified areas for improvement.

11.5 What is a culture of safety?

Developing a culture of safety as part of organisational culture has become a central theme in the range of initiatives to reduce hazards and prevent accidents and injuries in the workplace. One analysis has noted that there have been three broad changes in workplaces designed to improve workplace safety. These are:

1. Improvements in the design of equipment and hardware in workplaces (sometimes referred to as **engineering** solutions)
2. The development of organisational **systems** to create a culture of safety as part of the organisational culture
3. A focus on employee **behaviour** through the systematic use of selection, training and incentives and rewards for safe behaviour.

All three of these initiatives have played an important role in reducing workplace accidents and injuries. However, the most scope for improving workplace safety now lies in developing safety cultures that positively influence behaviour at work to reduce hazards and risk-taking.

The concept of a culture of safety has become more prominent in New Zealand, as a key factor for preventing workplace accidents and injuries. The Accident Compensation Corporation (ACC) has included ideas relating to the culture of safety in its discomfort, pain and injury initiative, mentioned in Section 2.

Research shows that the work patterns among healthcare staff are shaped by the safety culture and psychosocial work environment in organisations.[4] An important determinant of safe work behaviour is the interpersonal and social environment at work.

The development of a safety culture or safety climate is a key part of sustaining effective moving and handling programmes within healthcare. A feature of a culture of safety in moving and handling people requires that carers routinely assess risks for various moving and handling tasks, and use techniques that reduce risks. Given the central role of psychosocial factors in a culture of safety, this aspect is described in more detail.

BOX 11.6

Challenges to developing a culture of safety in healthcare

The healthcare sector has been slow to accept what other hazardous industries recognised long ago: safe performance cannot be expected from workers who are sleep deprived, who work double shifts or triple shifts, or whose job designs involve multiple competing urgent priorities.

When an adverse event occurs it tends to be perceived as an 'isolated and unusual event'.

A misconception that most errors do no harm because they are intercepted or that a patient's resilience prevents injury.

Adapted from Johnstone, 2007, p. 17

4. Lee et al, 2010.

Psychosocial factors and work climate

Psychosocial factors and work climate are important components of a culture of safety. In workplace health and safety, 'psychosocial factors' commonly refer to the extent of control over one's work activities, the amount of work pressure and stress, the extent of perceived support from colleagues and supervisors, and the extent to which specific work activities are stressful, such as might arise from working with challenging clients.

'Work climate' refers to factors in the general work environment that can influence psychosocial factors, such as work patterns and shifts, work supervision styles and patterns of work-related support for staff. Negative work climate factors, such as working irregular or long shifts and having inadequate sleep owing to long working hours, are associated with musculoskeletal problems including back pain, back injury and sick leave among healthcare staff. In addition, negative outcomes are more prevalent when workers feel they have little control over their work and perceive their work environment as unsupportive.[5] Among healthcare staff, psychosocial factors include the type and length of work shifts, fatigue, physical and verbal abuse from clients, family members or other staff, and the type of carer role.[6]

A key aspect of psychosocial factors is the 'psychological workload'.[7] This refers to a carer's experience of the overall workload imposed by their working environment. In high-workload conditions, carers may experience feelings of work overload and being under continuing time pressure.

Indicators of a high psychological workload include:

- High work demands
- Low job control
- Few possibilities for enhancing skills at work
- Low social support
- Non-constructive feedback provided by colleagues and managers.

Having a high psychological workload combined with a low sense of control over one's work, and low levels of support from others, have been reported as risk factors for musculoskeletal symptoms.[8]

5. Thomas et al, 2009, p. 17.
6. Holman, 2006, p. 58.
7. Larsman & Hanse, 2008, p. 36.
8. Holman, 2006, p. 58.

11.6 Developing a robust culture of safety

An important factor in reducing and preventing workplace risks and injuries is the development of a robust culture of safety. This means organisational patterns in which safety is always a consideration. The culture of safety is determined by the following factors:

- Management policies and workplace practices
- Organisational communication and feedback
- Staff training
- Health and safety operations
- Staff involvement in safety communications and reviews
- Physical resources and equipment provided
- An incident reporting system and continuous learning.

Management policies and workplace practices

Senior management need to be 'visible' in providing strong leadership for workplace health and safety. This includes support for the promotion of a safety culture generally. This includes:

- Ensuring there is a health and safety manager or representative in the organisation
- Providing an effective training programme for new staff, especially for workplace tasks requiring specialist skills
- Including health and safety issues in organisational communications
- Providing resources for equipment and resources that reduce workplace hazards
- Involving staff in safety reviews and decisions.

Other roles for management include:

- Establishing high standards of performance for moving and handling programmes
- Providing timely responses to safety incidents and concerns in a constructive manner
- Ensuring the operation of staff rosters and work shifts does not compromise safety
- Regularly communicating information on safety performance indicators.

Organisational communication and feedback

Part of the development of a culture of safety is to ensure open and effective communications between different levels of staff and management (see Box 11.7). Encouraging feedback from staff and reporting findings from post-incident investigations back to staff are important. Organisational communications should provide clear, concise messages on workplace safety.

BOX 11.7

Indicators of a culture of safety

- Managers regularly visit the workplace and discuss safety matters with the workforce
- Management gives regular, clear information on safety matters
- Staff can raise safety concerns knowing that management takes them seriously and will tell staff what they are doing about them
- Safety is always management's top priority; staff can stop a job if they don't feel safe
- Management investigates all accidents and near misses, does something about them and gives feedback
- Management keeps up to date with new ideas on safety
- Staff can get safety equipment and training if needed, and the budget for this seems about right
- Everyone is included in decisions affecting safety and is regularly asked for input
- It's rare for anyone to take shortcuts or unnecessary risks
- Staff can be open and honest about safety – management doesn't simply find someone to blame.

Adapted from: Health and Safety Executive, (no date).

Staff training

Effective systems for training staff are crucial for developing a culture of safety. Training programmes and workshops should cover the range of technical skills needed to identify hazards and risks in the workplace and the use of procedures that reduce those risks. Training should be especially focused on work settings, groups and tasks that tend to have high injury rates.

Health and safety operations

In large organisations, such as DHBs, there are likely to be established occupational health and safety stand-alone sections with overall responsibility for monitoring safety-related operations in the entire organisations. Health and safety operations need adequate resources as they need to be an integral part of the organisational

culture of safety. The units should provide input into all staff training programmes to ensure hazard identification and workplace safety are included.

Other key roles for health and safety managers are meeting employees frequently to discuss safety issues, and responding quickly to safety suggestions and concerns raised by employees.

In small organisations, specific individuals may be given responsibility for workplace health and safety. In this case, all staff should know who those people are and that they can be consulted by any staff member.

Staff involvement in safety communications and reviews

Developing an organisational culture of safety requires that staff be included in safety issues in several ways. These include:

- Ensuring safety issues are covered (where relevant) in staff training and briefings
- Providing routine opportunities for staff to initiate discussions or raise concerns about specific safety topics or events
- Including staff in ongoing organisational communications relating to safety and providing feedback to staff about specific incidents or events
- Communicating the outcomes of an effective programme, such as reduced lost time due to injuries.

Staff should also be consulted about the operations of rosters and work shifts. Providing opportunities for staff to raise and discuss safety concerns is also important.

Physical resources and equipment provided

Management and staff need to be up to date with developments in equipment and other physical resources for staff, including protective clothing and the design of workplaces. For reducing hazards in moving and handling, there are ongoing developments in equipment and facility design. Management needs to ensure that the health and safety section keeps up to date with these advances and provides input into upgrading equipment and facility design.

Incident reporting system and continuous learning

The reporting of accidents, errors and near misses forms an important part of a culture of safety. Incident reporting can be used to foster continuous learning aimed at improving workplace safety as a result of learning from incidents. A study of safety incident reporting rates in acute hospitals in the United Kingdom noted that incident reporting rates were positively correlated with measures of safety culture, with higher reporting rates being associated with a more positive safety culture.[9]

9. Hutchinson, et al, 2009.

The development of a culture of safety requires the open reporting of incidents. If the common management response to incidents such as accidents, errors and near misses is to blame and punish people, staff will not be forthcoming in reporting them. Management should use the reporting of accidents, errors and near misses as a way to engage in organisational learning to reduce and eliminate hazards as much as possible. When reported, incidents, especially incidents involving near misses,[10] provide learning opportunities for both staff and management, and indicate steps that can be taken to improve on safety performance. It is important to communicate to staff the findings and actions taken following an investigation.

BOX 11.8

Types of incident relevant to culture of safety

- Adverse event – an unintended injury or complication that results in disability, death or prolonged hospital stay, caused by healthcare management
- Near miss – an unexpected or unplanned event in relation to patient care that does not result in harm
- Error – the failure of a planned action to be completed as intended (i.e. error of execution) or the use of a wrong plan to achieve an aim (i.e. error of planning)
- Sentinel (catastrophic) event – a relatively infrequent, clear-cut event that occurs independently of a patient's condition, commonly reflects hospital systems and process deficiencies, and results in unnecessary outcomes for the patient (such as death or major permanent loss of function, or risk thereof).

Source: Johnstone, 2007, p. 17

If accidents, errors and near misses are a result of negligence or recklessness, assessments of factors that are likely to have caused these behaviours should be undertaken and appropriate changes made.

Managers should meet employees frequently to discuss safety issues, and to respond quickly to the safety suggestions and concerns they raise. One way of doing this is by putting safety issues as a standard item on routine meeting agendas.

One emerging topic for health and safety staff is 'presenteeism'. This refers to staff attending work when they are sick or incapacitated in some way, and the risks they may create for other staff and clients.[11] An example is an employee who comes in with an infectious disease who may infect others in the workplace. What are the costs to the organisation? Another example is a staff member who may have experienced a stressful event (inside or outside the workplace) and whose work performance is negatively affected. Their lowered performance may lead to extra work or heightened risks for others.

10. Kessels-Habraken et al, 2010.
11. Dew et al, 2005.

Measuring the culture of safety in organisations

For the effective development of a culture of safety, monitoring and evaluation are needed to assess how well the process is developing. Monitoring methods could include:

- Observations of safety practices
- Peer reviews
- Staff surveys
- Interviews with key people
- General reviews of health and safety systems, with the purpose being to find out how the systems are contributing to building a culture of safety
- Reviews of how well managers are leading safety.

Section 12 Monitoring and evaluation has more information relevant to monitoring safety systems and measuring aspects of safety culture.

BOX 11.9

Developing a culture of safety

Now the culture has changed. People are questioning how can we do this safely? For example, assisting a patient from a bed to a chair – that would be something that we were doing manually before. When we looked at incident reports we learned that would be a high-risk task where people would get hurt. We just don't do that now. Now people don't even question going to get that equipment.

Source: Stenger, 2007, p. 69

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Appendix 11.1 Example of a message for clients and their families

XYZ Policy for Moving and Handling People

At (name of facility) we want to make your stay as safe and comfortable as possible for you and your family. To help ensure your safety, comfort and quality of care during your stay, our policy requires that you be familiar with the following moving and handling policies and practices.

- Staff are required to use moving and handling techniques and equipment to prevent injury to clients as well as staff who care for clients during their stay here
- Staff are required to make clients aware of the policy to use appropriate moving and handling procedures and avoid the use of manual lifting
- The client can request an explanation about any moving and handling equipment or procedure that may be used.

Please note the following points about the policy:

- Where possible we move clients with the aid of equipment, including hoists and slide sheets for clients unable to move on their own
- The manual lifting of clients by staff is prohibited in most circumstances, except in life-threatening situations
- Client self-mobility and independence are encouraged whenever practical
- Clients who are medicated or who need physical assistance must allow staff to use the moving and handling equipment.

Should you have any questions about our Moving and Handling Policy, please feel free to ask the manager, or other staff who will be looking after you.

Your cooperation is appreciated.

SECTION 12

Monitoring and evaluation

Contents

12.1 Need for monitoring and evaluation systems

Monitoring and evaluation are core parts of developing and maintaining an effective moving and handling programme. Monitoring refers to the process of collecting information about how well the activities and operations associated with the programme are working.

Monitoring is needed for management decisions to be made about developing the programme where needed, and to ensure that it is operating in an effective way. 'Evaluation' refers to the process of an overall assessment of how well the programme is working. This includes both how well it is being implemented and whether it is having the intended outcomes or impacts. For moving and handling, the intended impacts will be reduced discomfort and pain, fewer injuries and claims, and less staff absenteeism and sick leave.

A key purpose for monitoring and evaluation is to revise or fine-tune a programme, especially during the early stages of its implementation. It is normal for new programmes to experience 'teething' problems, unanticipated events or processes that by themselves may be quite small, but collectively can have a big effect on how well a programme works. Monitoring systems should be set up at the beginning of a new programme, and an evaluation planned during its early stages so that the information gathered can be used for programme improvement. Where new programmes are set up with no accompanying monitoring and evaluation procedures, the programmes generally become ineffective or disappear after a few years.

The evaluation of a programme can be a complex process that requires specialist skills in monitoring and evaluation. The purpose of this section is to describe a range of options for moving and handling programmes so that managers and programme coordinators can design their own monitoring and evaluation systems that are suitable for their organisations.

Table 12.1 provides an overview of the types of evaluation that could be used to assess a moving and handling programme. A 'feasibility' evaluation is a preliminary investigation to find out what data are being collected related to the programme, what additional data need to be collected, whether the programme is 'ready' for an evaluation, and what type of evaluation might be most appropriate.

A 'monitoring' or 'process' evaluation requires collecting information that will allow the extent and thoroughness of the programme implementation to be assessed. Programme audits are one type of monitoring evaluation. The term 'programme review' is a type of monitoring evaluation and refers to an overall assessment of how well the programme is working.

An 'outcome evaluation' is more comprehensive than a monitoring evaluation and requires the systematic collection of data to assess the effects the programme is having on key variables or indicators. For moving and handling programmes these indicators might include incident reports, injuries (for both staff and clients), claims

to the Accident Compensation Corporation (ACC) and variables derived from staff records such as absenteeism and sick leave. They may also involve asking staff to complete questionnaires covering their involvement in various aspects of the moving and handling programme, their moving and handling practices in their everyday work, and their satisfaction with the programme.

TABLE 12.1 TYPES OF EVALUATION

Type of evaluation	Purpose	Typical evaluation questions
Feasibility evaluation	Preliminary investigation to find out the feasibility of a more detailed evaluation. The outcome of a feasibility evaluation may be a plan to conduct a more detailed evaluation	When did the programme start? What information is being collected that could be useful for monitoring or evaluation? What resources are provided for the programme? What type of evaluation would be suitable?
Monitoring or process evaluation (includes audits and programme reviews)	Collects information to assess how thoroughly a programme is being implemented – includes audits and programme reviews	What data from existing records can be used for monitoring purposes? What additional data need to be collected? What audits are carried out? Which programme components have been audited?
Outcome evaluation	Investigates the overall effects the programme is having on staff and client safety, such as reducing discomfort, pain and injury	Has the programme reduced injuries and ACC claims by staff? Has the programme reduced staff absenteeism? Has staff morale improved since the programme began?
Economic evaluation	Measures the costs of implementing the programme and the cost savings made	What was the cost to implement the programme in its initial years of operation? What cost savings have been made from implementing the programme? Is there a net saving in costs following programme implementation?

An 'economic' evaluation measures the costs of implementing the programme and the costs saved through reducing adverse outcomes such as injuries, claim payments, staff time off work and staff turnover. Implementation costs might include new equipment, staff training and building renovations. Another way of looking at an economic evaluation is to weigh the costs of not implementing a moving and handling programme against the costs and benefits of having implemented one.

Although this section on monitoring and evaluation is near the end of the Guidelines, it is good practice to develop monitoring systems and plan for periodic evaluations at

the beginning of a programme. This point is noted in Section 10 (Figure 10.2), where policy review and evaluation is part of the cycle of programme development and improvement. Audits are one of the most common types of evaluation activity and there is extensive information available on audits. For this reason, a separate section has been written for audits (Section 13).

12.2 Developing monitoring systems

Monitoring is an ongoing process that involves collecting, recording, summarising and reporting information related to the implementation of a programme and its outcomes. Monitoring should be a routine part of effective management systems. It:

- Enables a better allocation of resources
- Enables better client and patient safety
- Supports staff safety
- Helps to avoid incidents and events that detract from core operations
- Assists strategic planning for future developments and increased efficiencies in services and programmes.

The core components of a moving and handling programme, described in earlier sections, are shown in Table 12.2, together with some examples of activities that might be considered in monitoring the programme implementation.

TABLE 12.2 CORE PROGRAMME COMPONENTS AND MONITORING ACTIVITIES

Programme component	Examples of monitoring activities
Policy on moving and handling A written policy statement about the programme, supported and resourced by senior management	Policy statement available to managers and staff Managers familiar with implications of the moving and handling policy for their section or unit Health and safety staff are familiar with all sections of the policy Specific staff are responsible for collecting monitoring information and conducting audits
Techniques for moving and handling clients A set of approved techniques for carers to use when moving clients	Staff can identity and demonstrate techniques they commonly use, which they were taught during training Staff can identify techniques that should not be used
Training of all carers Initial and annual training for all carers	Schedules for training workshops available for inspection Records available on which staff have attended training Proportion of staff in a unit who have attended training in previous 12 months
Equipment provided for moving and handling	Equipment inventory available for inspection Staff can identify where hoists are stored Staff can demonstrate appropriate use of commonly used moving and handling equipment Systems for laundering or disposal of slide sheets are operating as intended
Risk assessment protocols Rules about assessing risks, used prior to moving people	Moving and handling assessment (e.g. HASI) of all clients is visible on client profiles Proportion of new clients having a moving and handling assessment within 24 hours of admission
Facilities and spaces that allow effective moving and handling	A walkthrough audit can identify: The suitability of client spaces for moving and handling activities, including layout of bathrooms and bedrooms Availability of hoists, slings and slide sheets Suitable storage areas for equipment

When a new moving and handling programme is implemented, or following significant changes to an existing programme, monitoring is essential to get a picture of how well the programme is working, and whether modifications are needed to improve the programme. For some organisations, it will be appropriate to include monitoring into broader organisational monitoring systems as part of health and safety operations. For others, it will be easier to set up specific monitoring systems for moving and handling, and appoint a coordinator or manager to operate the monitoring system. Whichever patterns suits, setting up a monitoring system is essential to keep track

of a programme and make sure it is working properly. A monitoring system will also provide information for more comprehensive reviews and evaluations of the programme later on.

When planning monitoring it may be useful to consider two types of information: 'passive monitoring' and 'active monitoring'.[1] Passive monitoring uses existing health and safety information. This is usually a lower-cost option and uses information that may already be collected and collated. A potential disadvantage is that the information available may not be directly linked to moving and handling activities. Examples of information that might be used for passive monitoring include:

- Existing reporting systems, including statutory reporting
- Number of staff attending moving and handling training
- Proportion of total staff who have attended training
- Hazards and other items discussed at health and safety meetings (meeting minutes)
- First aid and accident records for the unit or organisation
- ACC claim data
- Absentee records
- Time off for medical visits
- Staff turnover rates
- Employee complaints (e.g. workload, equipment and software problems, pain and discomfort)
- Productivity measures.

Active monitoring can be used in addition to passive monitoring. It requires collecting data that allow more in-depth analyses. It usually involves additional data (not already collected for other purposes) that can be directly linked to moving and handling operations. These may include levels of hazard exposure in moving and handling, and specific health issues experienced by staff, both individually and across the workplace. Data that could be collected for active monitoring or audits include:

- Workplace assessments and hazard checklists
- Workplace walkthrough audits to observe working practices
- Surveys of moving and handling staff via self-report questionnaires
- Absentee rates resulting from moving and handling
- Time off for medical visits as a result of moving and handling work strain
- Interviews with staff involved in moving and handling clients

1. Some information in this section is from ACC, 2010.

- Worker morale and satisfaction measures (e.g. suggestion boxes, group meetings, surveys).

Another option is a 'programme review'. A review considers the effectiveness of the overall management approach (including monitoring) to controlling the hazards and risks associated with moving and handling clients. Reviewing is often less frequent than monitoring. It involves a thorough assessment of how well current moving and handling systems are working, and identifies the need for changes in systems or components to improve the overall operation of the moving and handling programme.

Audits of moving and handling systems

Many programmes will have undergone internal audits as a form of evaluation or programme review. Information available from such audits can be useful in setting up a more comprehensive monitoring and evaluation of a programme. Audits are a checking procedure to find out the extent to which a programme or system operates as planned. Audits involve specific checks, such as observations of workplace activities, and usually use audit checklists that record observations of specific items or activities to determine if they comply with the patterns expected in a programme. An audit may focus on any of the components related to a moving and handling programme. Section 13 has a detailed description of the use of audits in moving and handling programmes.

Setting up a monitoring system

The first step in setting up a monitoring system is to identify moving and handling information that is already collected. This information may be held in several locations or databases within an organisation. Develop a list of these information sources and a plan for how the sections relevant to moving and handling could be integrated into a single data set.

For example, if audits related to moving and handling have been conducted in the past 12 months, find out who is responsible for conducting the audits, where the information is stored, who has access to it, and whether there is a summary of the audit information. If the information is reported somewhere, find out who collates the summaries and what happens to them.

Once the relevant information has been compiled, find out whether its usefulness for moving and handling could be improved by making small changes to the way it is being collected. For example, if incidents or minor injuries are recorded, could additional information about activities taking place be collected so that it is clear whether incidents or injuries occur during moving and handling activities?

The next step in setting up a monitoring system is to plan what additional information needs to be collected to maintain an overview of how well the moving and handling programme is working. Two main types of moving and handling data that should

be collected are incidents and audits. It will be important to take into account the additional time and costs required to collect new information related to moving and handling. Where possible, arrange to combine any new data collection with existing data collection systems to minimise the costs of collecting additional data.

Setting up a database

As part of the collection, storage and analysis of moving and handling monitoring data, an electronic database is needed. If feasible, add moving and handling data to an existing, centralised organisation database. In a centralised database, moving and handling data should be tagged so that it can be extracted separately from other types of data.

If using a centralised database is not feasible, a specific moving and handling database may need to be set up. The simplest would be to use spreadsheet software to enter and store the data. Even better would be to use specialist database software. Such software should provide a 'form' view to allow easy data entry and more options for data analysis and presentation.

When planning to enter multiple types of information into a database, including incidents and audits, consult someone familiar with setting up and running databases. Entry of information will be faster and have fewer errors if the form screen provides a clear guide as to how the information is entered into the database.

Incident reporting

Incident reporting systems generally involve:

- The routine reporting and recording of specific events, such as minor accidents, near misses and equipment failures
- Incident and injury records containing key information about injury events, including the nature of the injuries, the hazards present in the setting where the injuries occurred, and the tasks being performed at the time of injury
- Analysis of reported incidents to pinpoint potential or actual failures in safety systems
- Documenting trends in incident data over time.

Incident reporting and analysis can provide useful information to address vulnerabilities and weaknesses in healthcare delivery.[2] Following analyses of incidents, information concerning the causes of near misses and adverse events can be used to plan changes that reduce the risk of accidents and improve safety. Information on the frequency of specific types of failure and near misses and current safety performance can be communicated to staff to increase awareness of current

2. See Benn (2009) for a more detailed description of incident reporting systems.

operational risks and remedial measures. The training coordinator for moving and handling should be involved in incident reporting analyses so that alerts and incidents can be included in training programmes provided for staff.

Appendix 12.1 shows examples of information that can be included when developing a general reporting form for incidents in workplaces. Incident forms can be used to record specific events, including accidents and other incidents. These forms can be adapted to identify events occurring while moving and handling clients. For example, when recording the work activity at the time of the incident, add a specific category (e.g. a box that can be ticked) for any incident that occurred while moving and handling a client. There are also forms available for early reporting of discomfort and pain occurring during workplace activities.[3]

Note some incident and early report forms include the names of employees. This may be required for some reporting purposes. However, where an incident reporting system is set up, it is usually better to set up a system for anonymous reporting of incidents, and to ensure that incidents from incident report forms are collected and entered into a database without any names. Anonymous reporting leads to more frequent reporting of incidents because staff do not feel they will be blamed for specific events.

ACC Worksafe Cycle for improving health and safety

ACC has outlined a continuous improvement model known as the 'Worksafe Cycle' (Figure 12.1), which can be used for the monitoring of moving and handling programmes. It provides a framework that includes the need to conduct regular reviews of programmes. Routine monitoring of risks and hazards means they are more likely to be identified early and addressed before they result in injuries to staff.

In the 'Review' stage, problematic areas or operations are identified where systems are not working up to the expected standard. In the 'Planning' stage, changes are identified and listed to rectify or improve systems. In the 'Action' stage, the plan is implemented. A follow-up review assesses how well the changes have worked. Additional reviews may be needed if weaknesses are discovered in hazard management systems, or when major changes are made to moving and handling systems.

3. ACC has specific forms available for the early reporting of discomfort and pain; one for employees and one for employers.

FIGURE 12.1 THE ACC WORKSAFE CYCLE

It is recommended that hazard identification and control monitoring be undertaken on a regular basis (e.g. six monthly or annually). Other recommendations include:

- Integrating the review with overall organisational business reviews
- Determining whether the hazard assessment and control systems are effective
- Establishing whether all hazards are controlled to practicable levels
- Considering whether improved control measures are needed.

12.3 Evaluation of moving and handling programmes

Monitoring a moving and handling programme is a useful precursor to developing an evaluation of programme outcomes and the extent to which the programme is producing the intended effects. For moving and handling programmes, the intended effects are likely to be reduced discomfort and pain among staff, fewer injuries and fewer days off work by staff. Some of these indicators will be collected during monitoring and audits of the programme, while others will be collected as part of a more comprehensive evaluation. Table 12.3 shows process indicators that could be used to assess the implementation of a moving and handling programme. Process indicators, sometimes referred to as 'programme outputs', measure the effectiveness of programme implementation.

As can be seen in Table 12.3, a process evaluation can use information already collected for monitoring and audit purposes. It will typically use monitoring information as a starting point and extend the information to build a comprehensive view about how well the programme is being implemented. If there is little or no monitoring or audit information available, a process evaluation will need considerable additional time and resources to gather the information required.

TABLE 12.3 PROCESS INDICATORS FOR MOVING AND HANDLING PROGRAMMES

Indicator	Description of indicators
Staff knowledge of moving and handling systems	Survey of staff knowledge about appropriate moving and handling techniques, and familiarity with equipment
Staff support for the programme	Survey of extent to which staff support the moving and handling programme
Organisational culture of safety	Survey of staff views about the extent of support for a culture of safety within an organisation (see Table 12.6)
Incidents	Number of incidents related to moving and handling in a 12-month period. Extent to which analysis of incidents leads to programme improvements
Risk assessment protocols	Extent to which risk assessments of clients are undertaken routinely on admission and at regular intervals as needed
Training for moving and handling	Survey of staff satisfaction with moving and handling training and training on use of moving and handling equipment
Equipment accessibility	Survey of staff satisfaction with equipment provided and access to equipment
Audits related to moving and handling	Number of audits carried out in the previous 12 months, programme components being audited and extent of programme improvements over time as documented in the audits
Post-occupancy evaluation of new or renovated facilities	Survey of staff after the facility has been used for three to six months. An occupancy survey of the facility being replaced before staff move to the new facility will be useful. This can be used for comparison with the post-occupancy staff survey

Table 12.4 shows potential outcome indicators for the effects or impacts of a moving and handling programme. Outcome indicators should measure the effects on both staff and clients. In large organisations, the indicators could be collected for each ward, unit or setting, then aggregated for the organisation as a whole. Analyses would report both ward or unit data and overall data. For small organisations, the indicators would be collected for all staff and reported as a single group.

TABLE 12.4 OUTCOME INDICATORS FOR MOVING AND HANDLING PROGRAMMES

Indicator	Description of indicators
Staff morale	Extent to which staff are satisfied with working conditions and support from management
Staff absenteeism	Number of days sick leave taken, number of days away on other leave (excluding annual leave)
Staff turnover	Number of staff resigning in one or more 12-month periods Number of staff changing to other units or roles within the organisation in one or more 12-month periods
Staff injuries	Injury incidents recorded in one or more 12-month periods Number of days of staff leave owing to injuries in one or more 12-month periods
Staff claim injuries	Number of entitlement claims for staff injuries in one or more 12-month periods (e.g. work absence of seven days or more)
Client or patient injuries	Number of client or patient injuries recorded in one or more 12-month periods

A primary purpose of an outcome evaluation is to determine the extent to which the negative outcomes, such as injuries, ACC claims and staff absenteeism, have decreased in the time since the moving and handling programme was implemented (see Box 12.1). Data collected for the outcome indicators require collation, statistical analysis and reporting so that any trends in the outcome data are clear. The use of trends for 12-month periods has been suggested above. However, trends can also be aggregated and reported for other time intervals.

BOX 12.1

Example: Collecting injury data

The cornerstone of any musculoskeletal injury prevention program evaluation is the measurement of injury incidence and severity … Data collected should ideally include a description of the incident (including equipment used and task being performed), time and date of incident, unit and where on the unit the incident occurred, body part affected (primary and secondary), days of work lost, modified (light or restricted) duty days, information on nurse injured (position, number of hours normally worked), staffing variance or staffing level, any personal sick or annual days taken, and medical care received as a result of the injury both within the hospital and outside of the hospital. This type of data may be located in several different databases within one facility, incompletely recorded or not recorded at all.

Source: Ergonomics Technical Advisory Group, 2005, p. 115

Planning a process and outcome evaluation

When an evaluation is being planned, several questions need to be addressed:

1. What are the purpose and context of the evaluation?
2. What are the size and scope of the evaluation?
3. Who will plan and carry out the evaluation?
4. How will the evaluation findings be reported?

What are the purpose and context of the evaluation?

It can be useful to conduct evaluations at various times. These include:

1. During the initial implementation of a new programme
2. After a programme has been operating for a while (e.g. after three years of operation) to assess whether it is having the intended impacts
3. Prior to major programme changes or organisational restructuring to collect baseline data before changes occur.

What are the size and scope of the evaluation?

Evaluations require considerable skills, resources and time to collect valid and trustworthy evaluation data. The evaluation could be focused on a specific set of indicators or particular programme implementation issues (e.g. training and equipment access), or be a wide-ranging evaluation. Drafting a set of questions about the moving and handling programme to be addressed by the evaluation will help to establish the scope and size of the evaluation. Funding will be needed for carrying out the evaluation.

Who will plan and carry out the evaluation?

Evaluations require specific research skills in planning the evaluations, selecting indicators, collecting data, analysing the data and reporting findings. For an internal evaluation, an evaluation group will be needed to plan, carry out and report on the evaluation. The group should have an evaluation coordinator who has skills and experience in carrying out evaluations. Staff on the evaluation team may need some release from normal duties during the evaluation. For an external evaluation, a proposal or tender may need to be prepared, tenders invited and assessed, and discussions held with the successful team regarding the final proposal, ensuring access to monitoring data and access to staff for evaluation interviews.

How will the evaluation findings be reported?

Consideration should be given to how the evaluation findings will be reported. The following reporting options may be considered: a full evaluation report, a brief summary report (e.g. three to five pages) for managers and staff, and a presentation to the management team.

Developing evaluation indicators

When an evaluation is being planned, an early step is to identify the indicators needed for assessing effectiveness in terms of outcomes or impacts resulting from the programme. Where feasible, use existing data gathered for monitoring or audit purposes. However, most evaluations require the collection of new data specifically for the evaluations. One common problem is that existing monitoring data are not able to be separated by outcomes related to moving and handling, and outcomes related to other activities (see Box 12.2). For example, staff sick leave and absenteeism records may not include the reasons leave was taken.

Specific measures that could be used as outcome indicators in an evaluation include:

- Number of injury events that resulted in days away from work
- Number of days away from work due to a work-related injury
- Number of days on restricted work or transfer to another role when a work-related injury keeps an employee from performing their routine job functions
- Incidents requiring medical treatment beyond first aid
- Number of days of sick leave taken by employees in a work group or unit.

It will be important to ensure that any data collected are labelled or tagged by the task being performed at the time of injury, so that injury events can be sorted or stratified as 'moving and handling' injuries or 'other' type of injury.

BOX 12.2

Categorising injury data by work task

An evaluation of musculoskeletal injury prevention ('zero-lift policy') in six nursing homes in West Virginia, United States, described the labelling system used to distinguish injuries occurring during different types of work task. Injuries occurring while moving and handling residents were identified as 'cases'.

'Cases were defined as musculoskeletal injuries that occurred while lifting or moving a resident. Narrative information from injury reports were used to code the injury and define a case. The detail in the narrative descriptions allowed resident handling tasks to be coded (for example, "repositioning resident in bed", "assisting resident in/out of bed or chair", and "picking up resident who fell to the floor"). Generalized "sprain" or "strain" injuries not attributed to a specific source were also included as cases. Musculoskeletal injuries attributed to lifting objects (for example, beds, file cabinets, or garbage cans) were excluded. All other injuries (for example, slips and falls, struck by items, etc) among nursing staff were excluded as cases and non-case injury rates among nursing staff were analyzed as a reference [comparison] group.'

Source: Collins et al, 2004, p. 208

Evaluation design and data collection

The evaluation team or programme manager will normally decide on the type of design that will be suitable for an evaluation and the methods used to collect data. Some common evaluation designs are shown in Table 12.5. Generally the more rigorous the evaluation design in terms of including a comparison or control group, the more resources and skills are needed to conduct the evaluation. The pre-post design is a common type of design in the evaluation of moving and handling programmes.[4]

TABLE 12.5 EXAMPLES OF EVALUATION DESIGNS

Design	Purpose	Options for collecting data
Qualitative study	To describe how the programme is operating	Interviews with managers, staff and clients Focus groups with staff
Pre-post study	To determine if the programme reduces injuries and other negative outcomes in a single facility	Outcome indicators measured before and after the programme is set up and running
Pre-post study with comparison group	To determine if the programme reduces injuries and other negative outcomes compared with another facility or unit	Outcome indicators measured before and after the programme is set up and in a comparison facility at the same times
Experimental study	To determine if the programme reduces injuries and other negative outcomes compared with a 'control group' facility that is similar to the intervention facility	Outcome indicators measured before and after the programme is set up and in the control facility at the same times
Mixed methods study	Combines qualitative and quantitative data collection to both measure outcomes and obtain a detailed description of the programme operations	Both qualitative and quantitative data collected

For data collection, generally it is useful to collect both qualitative data (for example through interviews) and quantitative data for the indicators that are included in the evaluation. Other sources of information that might be feasible for an evaluation are staff surveys (described in the next section), ACC claim data and archival data held on record in the facility.

4. See, for example, Charney et al (2006), Chhokar et al (2005) and Collins et al (2004).

Staff surveys

Surveys of staff can be used to find out staff knowledge about moving and handling systems, the extent of staff support for a programme, and staff morale and work stress. Surveys can also be used to report on equipment accessibility, spaces for moving and handling, how recently staff received training, and the extent of staff compliance with moving and handling requirements and expectations.

The development of effective survey questions requires specialist skills in question writing. Some evaluation teams include such specialists. There may be existing survey question sets that could be considered or adapted for evaluation purposes.[5] Examples of some survey items covering a culture of safety in the workplace are shown in Table 12.6.

Staff surveys can be administered by distributing paper copies of the questionnaire to staff, or by having staff complete a web-based survey. Web-based surveys can be more efficient if most or all staff have internet access. Staff surveys should be completed anonymously and no names should be requested.

TABLE 12.6 EXAMPLES OF ITEMS FOR A STAFF SURVEY ON SUPPORT FOR A CULTURE OF SAFETY

Item	Strongly agree 5	Agree 4	Neither agree nor disagree 3	Disagree 2	Strongly disagree 1
Managers get personally involved in safety activities					
Managers often discuss safety issues with employees					
All new employees are provided with sufficient training before commencing their work					
Everyone is kept informed of any changes that may affect safety					
Managers do all they can to prevent accidents here					
Any faults or hazards that are reported are rectified promptly					

Source of items: Design 4 Health, 2005, p. 36.

5. See, for example, Design 4 Health, 2005 (p. 36) and Work Safe Alberta, 2008 (pp. 81-83).

12.4 Economic evaluations

Earlier in this section, the development of indicators and evaluation design were covered. A further step is to carry out an economic evaluation, if the evaluation team has the required resources and skills.

Economic evaluation has been described as 'the comparative analysis of alternative courses of action in terms of both costs and consequences'.[6] Economic evaluation is an important part of the justification for moving and handling programmes. There is considerable evidence that the costs of setting up an effective programme can be saved subsequently owing to reductions in injuries to staff, staff absenteeism and staff turnover. This section focuses primarily on one particular type of economic evaluation, known as cost-benefit analysis, which is often used in economic evaluations of moving and handling programmes.

BOX 12.3

Types of economic evaluation

Cost minimisation evaluation – can the programme be operated at less than the existing costs, without affecting outcomes?

Cost-benefit evaluation – are the benefits of introducing a new programme greater than the costs of the programme?

Cost-effectiveness evaluation – what are the costs and effects of programme A, compared with the costs and effects of programme B?

Cost utility evaluation – if $50,000 is spent on the moving and handling programme, how much reduction can be expected in lost staff days?

There are several types of economic evaluation, some of which are described in Box 12.3. Cost-benefit evaluations typically require collecting information about three types of cost. These are:

1. The existing costs of negative outcomes, such as injuries, staff absenteeism and ACC claims
2. The costs of setting up the programme and its annual operating costs
3. The costs saved from reductions in injuries and other negative outcomes when the programme is operating as intended (see Box 12.4).

6. Drummond et al, 1997, p. 8

BOX 12.4

Evaluation of an Australian manual handling programme

An economic evaluation of a manual handling programme carried out at Canberra Hospital and ACT Health, Australia, noted that from 2000 to 2003, ACT Health had a dramatic increase in workers' compensation premiums. With annual premium increases of $2 million per year, by 2003 premiums had increased by $6 million, and in the 2003-2004 year total premiums were $11 million. Between April 2005 and March 2006, the O'Shea manual handling programme was set up at ACT Health. For the three-year period from the time of the intervention, workers' compensation claims in clinical areas reduced by 60% and lost time reduced by 79%. Compared with pre-programme claim costs, the reduction in claim costs over four years (2005-2008) resulted in cumulative savings of $10.4 million. Savings on the costs of claims were substantially higher than the programme implementation costs.

Source: Bird, 2009

A hypothetical example of how the costs might be calculated within a facility for the time periods before, during and after starting a moving and handling programme are shown in Table 12.7. Note that any overall costs should be adjusted so that costs are compared using a common time interval. Alternatively, the costs could be calculated for a series of 12-month periods if the facility data are collated and reported in 12-monthly intervals.

TABLE 12.7 EXAMPLE OF INJURY RATES AND CLAIM COST CALCULATIONS

	Pre-programme Jan–Dec 2011 12 months	Programme start Jan–June 2012 6 months	Post-programme July 2012–June 2013 12 months
Number of ACC claims injuries	35	12	15
Total cost of ACC injury claims	$166,000	$57,000	$63,000
Proportion of injury claims involving moving and handling	50%	42%	33%
Total claim costs for moving and handling	$83,000	$23,940	$20,790
Total costs adjusted to annual rate	$83,000	$47,880	$20,790

Programme set-up costs

An important set of costs to consider are those involved in setting up a moving and handling programme. These costs are likely to include:

- New equipment for moving and handling (e.g. hoists, slings, slide sheets, PAT slides, electric beds)
- Additional equipment servicing and maintenance costs, including laundering of slide sheets
- Facility alterations to accommodate moving and handling tasks and equipment (e.g. widening doorways, installing ceiling tracking for hoists)
- Setting up a training programme (or engaging a contractor for ongoing training)
- Staff release time for attending moving and handling training
- New position for a moving and handling coordinator.

Some of these costs, such as new equipment and facility alterations, are primarily one-off costs during the setting-up phase. Other costs, such as training and a moving and handling coordinator, will be recurring annual costs.

Payback time

A key outcome used in economic evaluations of new programmes is payback time. For moving and handling programmes, payback time is the time taken until the cost savings, resulting from fewer staff injuries and decreased losses of staff time, exceed the programme setting-up costs plus the recurring annual costs of operating the programme. Several studies have calculated analyses of payback time for moving and handling programmes, and some have reported a payback time of around 2.5 to three years (see Box 12.5).[7]

BOX 12.5

Evaluation of a residential care intervention

An evaluation of a staff back injury prevention programme was conducted in six US nursing homes with a total of 552 beds. The intervention, which included a zero-lift policy, began in January 1998. Injury rates, costs and lost workday rates were gathered for three years pre-intervention (1995-1997) and three years post-intervention (1998-2000). Three types of equipment used were: slide sheets for repositioning residents, full body lifts (hoists) for transfers from bed to chair and chair to toilet, and stand-up lifts (stand-aid hoists) to assist with tasks such as toileting and bed to chair transfers, together with staff training. There was a significant reduction in resident handling injury incidence, workers' compensation costs and lost workday injuries after the intervention. The initial investment of $158,556 for equipment and worker training was recovered in fewer than three years based on post-intervention savings of $55,000 annually in workers' compensation costs.

Source: Collins, 2004

7. See also Chhokar et al (2005) and Siddharthan et al (2005).

12.5 Summary points: Monitoring and evaluation

The collection of monitoring information allows ongoing tracking of the effectiveness of a moving and handling programme. Carrying out an evaluation provides more systemic information about how well the programme is doing and the extent to which it is reducing injuries and other negative outcomes.

Each facility or organisation needs to make its own decision about the resources to be allocated for programme monitoring and how often programmes will require evaluations. Whatever decisions are made, it is useful to remember that all programmes tend to lose their effectiveness over time unless there are ongoing audits and monitoring. Another trap that organisations can fall into is that as injuries and costs decrease with time, the apparent rationale for resourcing an effective moving and handling programme decreases. As a result, resources may be cut and injury rates start to increase again. Without monitoring systems operating, these changes are likely to go undetected by senior management (see Box 12.6).

BOX 12.6

The decline of programmes following withdrawal of resources

Research on current users of the O'Shea programme revealed that most areas where the programme had been implemented reported initial success in reducing manual handling injuries. However, this was usually followed by a reduction in manual handling staff (that is, occupational health and safety staff who are dedicated to the reduction of manual handling injuries), and a subsequent associated increase in the prevalence of manual handling injuries. As a result, there was a reduction in the level and quality of training and the attention given to the ongoing procedures, a lack of support for clinical staff in the management of complex patients, and a lack of staff compliance with the principles of the manual handling programme.

Source: Bird, 2009, p. 452

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Appendix 12.1 Information for an incident/early reporting form*

Headings in form	Examples of details expected
Identifying details	Names, positions and unit locations of person injured/affected, a witness (if relevant) and person filling in form
Incident event details	Date, time and location of incident
Description of incident	An account of the incident from perspective of the person affected, a witness or other person
Type of incident	A set of categories that provide summary classifications of the incident, such as discomfort, pain, near miss incident, first aid incident, medical treatment required, time off required. More than one item may be ticked
Activity at time of incident	Type of work or other activity in which person affected was engaged when the incident occurred. If desired, specific tick boxes can be added to assist classification, such as 'moving and handling client'
Details of discomfort, pain or injury incidents	Rating scales for severity of discomfort or pain, duration, part of body affected (e.g. severe pain, moderate pain, mild pain, discomfort)
Cause of incident	A description of the factors that are likely to have caused the incident. If the cause is not clear, state 'cause unclear'
Follow-up required	Comment from person filling in form (or a supervisor) as to whether any further investigation or follow-up action is required in relation to the incident
Referral to health and safety	Confirmation that a copy of the completed form is being sent to the occupational health and safety section and other people if relevant
Sign-off	Signature of person filling in form and date of completion of form

***Note**: The suggested fields in this table are commonly included in incident report forms.Each organisation should develop its own form to suit the organisational requirements.

SECTION 13

Audits

Contents

13.1 What are audits?

A crucial step in the process of managing moving and handling programmes is to monitor and review the effectiveness of programme components.

Audits are a specific part of monitoring and review. They are necessary to make sure that the systems are working as intended, and to assess the extent to which appropriate systems are operating systematically throughout the workplace. Audits are a monitoring procedure used to find out to what extent a programme or system is operating as planned and require specific checks such as the observation of programme activities. They often involve checklists that record whether specific items or activities comply with the patterns expected.

Audits should provide information that leads to improvements in the operation of moving and handling systems. It is inappropriate to use audits to penalise staff or ward managers or supervisors. Whoever carries out an audit should plan to communicate the audit findings to the unit managers with the intention of improving staff performance and safety, the care and safety of clients, and the work environment overall. It is important to consult a range of staff, particularly those who have worked with audits. Staff should also be informed of the findings in a manner that does not spotlight individuals, especially if there are issues of non-compliance.

BOX 13.1

What gets watched gets done: the value of audits

After a spot audit of a particular hospital in our District Health Board (DHB), we found that some wards only had about 10% compliance with requirements for moving and handling tasks. Until then, there had been no audits for a long time. That level of compliance was far below the other hospital in our DHB, which carries out spot audits more regularly. It is really a case of what gets watched gets done.

Source: DHB employee

The outcomes from audits enable managers to assess how well moving and handling programmes are working. They also gauge the level of compliance by staff with expected practices for moving and handling. Audits should also identify potential areas of concern, and validate and review information or data for completeness and accuracy. Audit information must be documented and communicated back to the manager or supervisor of that area, so safety for clients and staff can be maintained, and to address specific issues or potential issues identified.

Types of audit

Common types of audit are shown in Table 13.1. These include routine or scheduled audits, spot or random audits, and audits in response to adverse outcomes. Audit information is collected using one or more procedures such as:

- Observing staff at work
- Interviewing staff
- Checking client profiles or records (e.g. risk assessments)
- Interviewing clients
- Walkthrough audits to check equipment.

The most common way of collecting information is using a checklist, noting compliance or non-compliance through observations and written records. Examples of checklists are shown later in this section.

'Routine or scheduled audits' are planned at regular intervals to obtain estimates of compliance levels with moving and handling practices. The frequency of scheduled audits depends on the availability of resources, and whether audit information is needed to assist in decision-making at specific times during the year.

TABLE 13.1 TYPES OF AUDIT

Audit type	Description
Routine or scheduled audits	Audits scheduled at regular intervals to estimate compliance levels with moving and handling practices
Spot or random audits	Audits carried out at short notice with staff receiving no prior notification of the audits
Adverse outcomes audits	Audits carried out following specific incidents, injuries or near misses to determine any patterns of incidents or injuries
Comprehensive audits as part of major programme evaluations	Series of audits carried out as part of major evaluations of moving and handling programmes

'Spot and random audits' are unscheduled audits, usually initiated by health and safety managers or moving and handling coordinators, and may be used to target areas with high accident or incident rates. Spot audits are typically performed to ensure compliance in areas where the need for compliance is high. Ideally spot audits should be conducted regularly during the year and, when the need arises, information from spot audits can be used by managers to decide whether immediate action is needed to avert any potential problems.

Spot audits may involve observing staff conducting moving and handling tasks, such as risk assessments, transfer techniques, and using equipment such as hoists and slide sheets. Client records such as the HASI and client profiles can be checked against clients' mobility levels to determine whether risk assessments are accurate.

'Adverse outcomes audits' are carried out following specific injuries or incidents to determine whether there are particular patterns of client transfers related to incidents, staff absenteeism or sick leave. These audits are generally conducted by senior managers. It is important to look for underlying reasons for higher rates of injury and absenteeism, and areas where serious incidents have taken place, even if they were isolated cases. It may also be useful to focus on areas that have recorded falling rates of injury or absenteeism, because there may be lessons to be learnt from these trends.

'Comprehensive audits' may be carried out as part of major evaluations of moving and handling programmes (see Box 13.2) in multiple facilities and workplaces. Often such audits are organised by regional or national authorities to provide overviews of moving and handling programmes in health and residential care facilities. Such audits have been used in Australia and in other countries that have national or federal agencies responsible for health and safety in workplaces.[1]

BOX 13.2

Example of a national audit in Australia using multiple data sources from different locations

An audit report for the health and community services industry provides a summary of the industry's performance following a National Manual Handling Campaign in 2004.The evaluation of industry performance included the following data:

- Audit data obtained during audits of 643 randomly selected workplaces (171 hospitals and 472 aged-care facilities)
- Information obtained from eight focus groups involving 62 workplace health and safety inspectors and other relevant occupational health and safety staff.

Source: Design 4 Health, 2005, p. 4

Who carries out audits?

Routine audits are usually conducted by unit managers, supervisors or moving and handling coordinators. Occupational health and safety (OHS) managers or representatives usually organise audits, and have overall responsibility for collating and analysing audit records, reporting audit outcomes and determining overall compliance with organisations' moving and handling policies.

Unit managers or supervisors can delegate spot audits to nurses, rotating them during the year so that all their nurses get to participate in audits. Nurses in New Zealand are required to carry out audits as part of their annual professional development. It is useful for nurses to audit different wards or units from their own work areas. Community and district nurses should also be included.

1. See, for example, Design 4 Health (2005) and Aged Care Association Australia-NSW (2008).

Community carers also need to be audited. As there may be resourcing issues with organisations and people providing services to those living in the community, home carers need to have access to people suitably qualified to carry out audits if expertise is not already available.

13.2 Audit procedures

When conducting an audit, it is necessary to plan each step so that the audit process is carried out effectively and the findings of the audit are used to implement any changes needed to improve moving and handling systems. Table 13.2 summarises the main steps in an audit. These are described in more detail in the following text.

TABLE 13.2 STEPS IN CONDUCTING AN AUDIT

Audit step	Description
Identify purposes and operational areas for audit	Identify the purposes or benchmark standards, the type of audit to be carried out, the units or areas within the facility and specific topic areas of focus for the audit (e.g. risk assessment, equipment)
Select or develop an audit tool	Use an existing audit tool, such as a checklist, or develop one from existing tools
Collect audit data	Decide which units or wards are to be covered by the audit, arrange for audit data to be collected
Analyse data and collate findings	Collect all data and collate responses into a summary audit report. Ensure audit report is available to all staff
Review operational procedures and implement changes	Discuss audit report with managers and staff, and any changes needed as a result of the audit. Develop a plan for addressing any shortfalls identified

Step 1: Identify the purpose, operational areas and topic for the audit. This could be training, risk assessment, techniques or equipment and facility features. The selection might be based on information about recent moving and handling incidents, the length of time since a previous audit was carried out or significant changes made in management, staff or operational practices or policies in a unit. Decisions should also be made about the overall purpose of the audit, and what should happen as a result of the audit. An audit plan could be written as a series of statements or tasks on which the audit will focus and the intended outcomes from the audit.

Prior to starting information collection, the audit organisers should ensure they have an understanding of the context for moving and handling activities in the unit or area being audited. The following questions may help to develop an understanding of the context:

- What are the types of service provided in the unit or facility being audited?
- What types of client are provided with services?
- Are there any special client care activities undertaken?
- What types of equipment and furniture are used in the unit or work area?
- How does this unit interact with other wards or units in the health facility?

Step 2: Select or develop an audit tool. Examples of audit tools for specific topics are described later in this section. Once a tool has been developed or used several times,

it is best to make only small changes at any one time so that the audit data collected can be compared with previous audits using the same tool. An exception might be if there is a need for a major revision of all the audit tools so that significant changes are made at the same time.

Step 3: Collect data relevant to the audit. Check that the data to be collected are relevant to the purposes of the audit. To ensure thoroughness and make clear the limits of the audit, specify:

- The work units to be included, with any exceptions noted
- The healthcare staff to be involved in collecting the audit data
- The procedures or methods by which the audit data will be collected (see Boxes 13.3 and 13.4)
- The time period in which audit data will be collected.

BOX 13.3

Collecting audit data: A national audit in Australia

The report from a national audit of manual handling in the health and community services industry in Australia noted the following methods for collecting audit information from 643 workplaces:

- A walkthrough inspection of the workplace
- Observation of high-risk manual handling tasks
- Review of relevant management systems' documentation
- Interviews with managers, supervisors, health and safety personnel and workers
- Completion of a safety culture and manual handling activity questionnaire by randomly selected workers.

Source: Design 4 Health, 2005, p. 7

Step 4: Analyse the data and report the audit findings. When audit findings are collated they are sometimes compared with an expected standard (e.g. 90% or 100% compliance). It may also be relevant to identify reasons for specific findings (e.g. from comments in the completed audit forms). Comments collected during the audit may suggest a focus for improvement measures. Communicate the audit findings to managers and staff (make the findings readily available to staff), so that they know the outcomes from the audit process.

BOX 13.4

Audit data collection methods during site visits

In a multi-site audit of 32 aged-care facilities in New South Wales, Australia, the following methods were used to gather data at each facility visited. The audit was conducted over one day and involved:

- An on-site meeting with management and key people, including the OHS coordinator/ chair OHS Committee/HSR [health and safety representative]
- Examining and evaluating documentation, such as OHS policies and procedures, risk assessments, reports and records of action to implement controls, training records and injury/incident records
- Conducting focus groups/interviews with employees and supervisors to determine issues, effectiveness of controls
- Interviewing employees who had sustained manual handling or occupational overuse syndrome (OOS) injuries within previous two years
- Reviewing operating procedures, training and supervisory practices and other risk control methods
- Conducting an exit meeting with the manager.

Source: Aged Care Association Australia-NSW, 2008, p. 9

Step 5: Review operating procedures and implement changes if needed. Once the results of the audit have been reported and discussed, make decisions about what changes, if any, are needed.

Using an action plan to guide the implementation of recommendations is good practice. Following an audit, an action plan might include recommendations for staff to receive additional moving and handling training, and to address equipment shortages or lack of equipment access for staff. The action plan should include who has agreed to do what and by specified dates. Each recommendation needs to be clearly stated, with an individual designated as being responsible for it, and an agreed date for its completion.

The next parts of this section provide information for audits on specific components of moving and handling programmes, including risk assessments, techniques, training, equipment and facility design and bariatric clients. Although the examples of audit items and tools outlined are specific to each area, in practice they are usually combined into a larger, more comprehensive audit tool (see example in Appendix 13.1).

13.3 Risk assessment audits

As moving and handling activities involve risks, routine risk assessment procedures should be used when planning client moving and handling tasks so that risks can be controlled or reduced. Risk identification varies by setting and may be different in hospital wards, acute care, aged care, nursing homes and home care. When conducting a risk assessment audit, the following information sources can be considered:

- What information is kept about the profile of clients? (e.g. workplace profile)
- What forms or checklists are used for risk assessment? (e.g. client profiles)
- What central records are kept relating to client profiles?
- Is the client mobility assessment card visible near the client's bed?
- What movement risk assessments are conducted before moving clients?

Depending on the type of facility and the types of risk assessment information that are available, an audit form can be developed based on a set of items that are suitable for the types of client and other aspects of the workplace profile for a facility. Table 13.3 shows an example of an audit form with items that might be used for a risk assessment audit.

TABLE 13.3 EXAMPLES OF ITEMS FOR A RISK ASSESSMENT AUDIT

Number of clinical charts reviewed					
		Yes	No	Partially	Comments
1.	Every bed has a client mobility assessment card visible (e.g. HASI= Hoist, Assist, Supervise, Independent)				
2.	The client mobility assessment card is completed and up to date				
3.	All clients have client profile forms in clinical notes				
4.	All client profiles have moving and handling plans for clients who are not independent				
5.	All client profile forms are up to date				

Analysis summary

Formula for compliance %

A) Number of criteria achieved (YES) _____

B) Total number of criteria (excl those not applicable) _____

Compliance A / B x 100 = % _____

Recommendations/action Plan

What	Who	When	Complete

Ward/unit		Auditor		Date	

Sign-off by manager of ward/unit re agreed actions

Manager	Date

Note: Form layout and some items adapted from Waitemata District Health Board.

Key features of Table 13.3 include:

- How many clinical charts (or client profiles) have been reviewed in the unit or area
- Selection of a set of items that are relevant to the facility
- A specific response for each item and a comments box

- A summary calculation of the level of compliance (expressed as the percentage of 'yes' responses to overall responses) for the unit or workplace area
- Recommendations and an action plan for improvements if needed.

If an audit is to be conducted of the client profile for every occupied bed in a facility, a different form that lists individual clients is needed. Table 13.4 shows an example of the layout for an audit data sheet for use when recording information for each client. The items shown in the top row of the data sheet can be adapted to suit the particular needs of a facility or workplace or the type of audit.

TABLE 13.4 EXAMPLE OF A RISK ASSESSMENT DATA SHEET FOR AN AUDIT

Client name or ID	Mobility card visible?	Mobility card completed	Mobility card dated	Client profile in notes	Moving and handling plan present if needed	Comments
1						
2						
3						
4						
5						

13.4 Technique audits

Gathering information for technique audits is generally more complex and time consuming than for other components of moving and handling programmes. Relevant information can be gathered in several ways:

- By the observation of ongoing moving and handling tasks in a work unit (see Box 13.5)
- Through asking staff to carry out specific transfer tasks with clients or other people
- Through surveys where staff report on how they carry out moving and handling tasks.

Generally, the most effective information-gathering method is observation of actual transfer tasks as they occur in a facility. However, this will typically involve considerable observation time.

Where non-compliance has been reported for specific moving and handling techniques (such as the use of hoists, slide sheets and other equipment), an auditor may wish to use informal interviews with staff to find out reasons for the non-compliance. Information from informal interviews can be used directly to plan specific training for the staff, and to find out if any changes are needed to remove barriers to compliance. Auditors should check if the necessary equipment is readily accessible and available to staff. Audits of techniques should be carried out by staff or managers with relevant training and experience in moving and handling people.

BOX 13.5

Observation of manual handling tasks

A national audit in Australia gave the following instructions for observing tasks as part of its data collection.

1. 'As a minimum, assess and record one high risk work task in each of 2 work areas. One of the work areas chosen MUST be a CLINICAL AREA. You may choose the work areas listed or choose another area based upon the workplace injury statistics, incident reports, discussions with the workplace, or identification during walk through inspection.
2. Assess the risk using your usual jurisdictional manual handling risk assessment process with the underlying principle that manual handling is deemed to be hazardous if the task contains repetitive or sustained movement, awkward posture or forces; high force; unstable or unbalanced loads; long duration; or exposure to environmental factors such as vibration.
3. Take appropriate compliance action as required as stipulated under the relevant jurisdictional legislation e.g. issuing of notices, directions, etc.'

Design 4 Health, 2005, p. 32

13.5 Training audits

Audits of training cover the extent to which staff involved in moving and handling people have adequate training. Training audits should be one of the easier types of audits to conduct, providing suitable records of training have been kept. Training records include:

- Lists of staff who have attended training, held by trainers
- Lists of staff from specific wards or units who have attended training, held by managers
- Lists of staff who did not attend their scheduled training sessions
- Training programme documents, such as the training schedule and topics covered in training
- Assessments of trainee competencies made by trainers
- Participant evaluations of training workshops held by trainers.

Two specific areas of training that should be monitored and audited by unit or ward managers are induction training for newly employed staff, and annual updates or refresher training for existing staff. Unit managers need to monitor the training schedules for staff in their groups and arrange for staff to be released for training. Records should also be kept of staff scheduled for training but 'did not attend'. Where an accident or near miss has been reported, the incident details should be assessed to determine whether additional training is required for the staff involved.

To assist staff involved in moving and handling people, unit managers should maintain written records of induction training sessions and attendance lists, and annual follow-up training, and any other relevant information related to moving and handling. These records should be checked during training audits. The person in charge of arranging or coordinating moving and handling training for the organisation should also keep records of staff attendance at training workshops. These should note the date and type of training completed by each staff member, and staff not attending training sessions they were scheduled to attend.

13.6 Equipment audits

A wide range of moving and handling equipment is used in health and disability facilities. Common types of equipment included in moving and handling audits are slide sheets, PAT slides, mobile hoists, ceiling hoists, hoist slings and wheelchairs. Facility features for audits refer to building design features and fixtures that facilitate moving and handling, such as space to carry out client moving and handling tasks, ceiling tracking, equipment storage and hand bars in bathrooms. Generally, the managers of units responsible for storing and using equipment will be responsible for auditing equipment. Shared or pool equipment may need specific arrangements for auditing.

Equipment audits should cover the availability of equipment within the unit or ward that is suitable for the client profile of the unit. Important features for an equipment audit include:

- **Availability**: Are there sufficient items of each type of equipment available where needed?
- **Equipment storage**: Can the equipment be stored in a suitable place when not in use?
- **Ease of access**: Are equipment items stored in places that make it easy for staff to access them?
- **Proper labelling**: Are fitness certificates and safe working loads (SWLs) clearly labelled on hoists and other equipment?
- **Maintenance and servicing**: Do visual checks of equipment identify any problems or potential problems (e.g. wobbly wheels on wheelchairs, tears in slings, infection control issues)?
- **Battery charging**: Are there suitable charging facilities for battery-operated equipment?

Examples of items that could be included in an equipment audit checklist are shown in Table 13.5. Equipment items used in the community for clients cared for in their homes also need to be audited. The responsibility for ensuring that audits take place may need clarification within home care services, in conjunction with key institutions such as DHBs and the Accident Compensation Corporation (ACC).

TABLE 13.5 EXAMPLES OF ITEMS FOR AN EQUIPMENT AUDIT FORM

Number of beds reviewed		Number of hoists reviewed			
		Yes	No	Partially	Comments
1.	The area shows evidence of slide sheets hanging beside beds occupied by clients whose mobility is impaired				
2.	There are two slide sheets hanging near each transfer board				
3.	The laundry system for slide sheets is operating as intended				
4.	The hoists seen have performance verification stickers that are within date				
5.	Adequate numbers and sizes of slings are available for hoists and are within date				

Note: Some items have been adapted from the Waitemata District Health Board audit form.

13.7 Facility audits

Facility audits cover building design, workspaces and furniture related to moving and handling and should take place at least once a year. A facility audit should also take place after an incident or near miss, and before a facility or area is to be upgraded or renovated. Auditors should pick specific areas to do walkthrough observations with a list of items to check.

Design features that impede or increase the risks of moving and handling tasks need to be noted. These include a lack of wheelchair access to particular areas, narrow corridors and doorways, ceiling tracks not covering bathrooms, insufficient space for two carers to assist a person in the toilet, inappropriate flooring that impedes the movement of equipment, and slippery flooring. Examples of items for a facility audit checklist are shown in Table 13.6. Facility audits will generally come under health and safety sections in large organisations, and nurse managers or owners of small facilities. In some instances external auditors may be required to obtain accreditation for particular programmes offered, such as those from ACC.

Walkthrough audits can be effective as a straightforward way of checking on equipment availability, storage, facility layout and some risk assessment details. An example is shown in Box 13.6. A walkthrough audit can quickly pinpoint problems related to storage space, lack of access to equipment and poor facility design.

TABLE 13.6 EXAMPLES OF ITEMS FOR A FACILITY DESIGN AND WORKSPACE AUDIT FORM

		Yes	No	Partially	Comments
1.	Is there enough space (minimum of 650mm clear space) on both sides of all beds for 'on bed' movement of clients?				
2.	Is there enough space on at least one side of each bed to allow transfers on or off the bed (i.e. 1,200mm for wheelchairs/commodes; 1,500mm for mobile hoists; 1,500mm for slide sheet transfers from bed to trolley)?				
3.	Is there enough clear space at the foot of each bed to allow the safe movement and handling of clients (1,200mm in single rooms; 1500mm in two-bed rooms)?				
4.	Can beds and client moving and handling equipment be easily moved around within bedrooms when required?				
5.	Can beds and client moving and handling equipment be easily moved in and out of bedrooms when required? (The recommended door opening is 1,200mm in aged care and 1350mm in acute care)				
6.	Are the storage cupboards functional in terms of location, doors and layout?				
7.	Are there enough storage cupboards to accommodate equipment?				

Note: Items adapted from WorkSafe Victoria, 2007, pp. 77, 81.

BOX 13.6

Walkthrough audit of a hospital ward

In March 2011, one of the review panel members walked through a relatively new ward in a large public hospital. The building had been opened around 2007. The purpose of the visit was to see how well moving and handling systems were incorporated into building design, equipment availability, risk assessment and communication related to safe moving and handling. What was found may well be common in recently built wards in New Zealand hospitals.

Good points

- Ceiling tracking over beds in most client rooms
- One ceiling hoist and two mobile hoists available in storage rooms
- Small storage rooms provided for equipment.

Bad points

- No client profiles or mobility information displayed in client rooms
- Ceiling tracking ends outside bathrooms (see photo 1)
- No hoists fitted in the ceiling tracking
- No SWL shown on ceiling tracking
- No slings available for use with hoists
- No slide sheets visible anywhere in the ward
- Toilet located in corner of bathroom, thus not providing carer access on both sides of toilet (see photo 2).
- Inadequate storage space for equipment
- Poor layout of storage space (mobile hoist stored in front of shelves, preventing access to shelves – see photo 3).

13.8 Bariatric audits

Auditors of facilities that have bariatric clients may wish to gather specific information regarding the extent to which planning for moving and handling bariatric clients is catered for. As noted in Section 14 Bariatric clients, the most desirable planning is to ensure that a bariatric pathway is available. A bariatric client pathway refers to the route that a client will take from first contact with the service provider through to the completion of their treatment. If there is no bariatric pathway available, a bariatric audit would then look at what specific provision, if any, has been made for bariatric clients.

The following types of information will be relevant to a bariatric audit:

- Information on client admissions in the previous five years, documenting the number of bariatric clients being admitted each year and the wards or units where they have been receiving clinical or other care
- A list of bariatric equipment available
- An audit of moving and handling equipment to confirm which equipment items are suitable for use with bariatric clients
- Location of and staff access to bariatric equipment
- Specific wards or units within a facility designed for bariatric client care
- Information provided to staff about the moving and handling of bariatric clients
- Extent to which staff who move and handle bariatric clients have been given appropriate training
- A reporting system for incidents and accidents where bariatric clients were involved.

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Appendix 13.1 Moving and handling audit form

(Adapted from Waitemata District Health Board audit form)

Number of clinical charts reviewed
If 'Partial' for any criteria, state the number of correct items in 'Comments'.
Analysis summary

		Yes	No	Partially	Comments
1.	Every bed has a mobility card visible				
2.	The mobility card is completed and up to date				
3.	Each client has a client profile form in clinical notes				
4.	All client profile forms are up to date				
5.	The area displays publicly a client/ visitor information poster				
6.	Slide sheets are adequately maintained				
7.	The area shows evidence of slide sheets hanging beside clients' beds once allocated				
8.	Are there two slide sheets hanging near each transfer board?				
9.	Each hoist performance verification sticker is present and within date				
10.	Adequate numbers and sizes of hoist accessories are available and within date				

Analysis summary

Formula for compliance %

A) Number of criteria achieved (YES) _____

B) Total number of criteria (excl those not applicable) _____

Compliance A / B x 100 = % _____

Recommendations/action Plan

What	Who	When	Complete

Ward/unit		Auditor		Date	

Sign-off by manager of ward/unit re agreed actions

Manager	Date

SECTION 14

Bariatric clients

Contents

14.1 Providing care for bariatric clients

In the past 20 years there has been an increase in the number of bariatric admissions to healthcare facilities. The increasing number of bariatric clients[1] presents a challenge to healthcare and other service providers to give care that is effective and safe for both the clients and staff.

The purposes of this section are to assist staff and to reduce the risks when moving and handling bariatric clients. Bariatric clients should receive treatment without prejudice or discrimination, and be given the respect and dignity accorded to all clients. This section outlines topics to consider when planning for bariatric clients and how to develop a healthcare pathway. It concludes with a discussion of specific issues related to the care of bariatric clients.

Bariatric is the science of providing healthcare for those who are severely obese. The term bariatric derives from the Greek word 'baros' (weight). Several criteria are used to determine if someone is classified as a bariatric client. The following are some examples. Please note that there is not a complete consensus on the criteria for classifying a person as bariatric based on weight or Body Mass Index (BMI).

- A person with a body weight greater than 140 kilograms.[2]
- A person with a BMI greater than 40 (severely obese), or a BMI greater than 35 (obese) with co-morbidities.[3]
- A person who has restricted mobility, or is immobile, owing to their size in terms of height and girth.[4]
- A person whose weight exceeds, or appears to exceed, the identified safe working loads (SWLs) of standard hospital equipment such as electric beds, mechanical lifters, operating tables, shower chairs and wheelchairs.[5]

BOX 14.1

What is a bariatric client?

The definition of what constitutes a 'bariatric' patient is a point of contention for a number of services within the journey of bariatric patient care. While a BMI of at least 30 is seen as a useful trigger point to implement bariatric care procedures, its use is limited in informing other procedures such as purchasing.

Source: Australian Safety & Compensation Council, 2009, p. 10

A working definition of a bariatric client is someone who weighs 150kg or more, has a BMI of 40 or more or who has large physical dimensions, a lack of mobility or other conditions that make moving and handling difficult.[6]

1. We use the term 'bariatric client' rather than 'bariatric patient' to recognise that not all people being cared for will be in organisations that use the term 'patient'.

2, 3. BMI is calculated using the formula BMI = kg/m², where kg = person's weight and m = height in metres (see Appendix 14.1 at the end of this section).

4. See Muir & Archer-Heese, 209

5. Queensland Health, 2010, part B, p. 48 (Information Sheet – *Moving and Handling the Bariatric Patient*).

6. See Robertson, 2010.

In New Zealand the definition of obesity for adults aged 18 years and over is having a BMI of 30 or more for all ethnic groups. New Zealand's unadjusted obesity rate of 26.5% in 2006-2007 was the third highest measured obesity rate after the United States (33.8% in 2008) and Mexico (30% in 2006).[7] Rates of obesity increased in surveys conducted between 1997 and 2007.

Many healthcare facilities report a continuing increase in the number of bariatric clients admitted.[8] For these reasons, all healthcare providers need to develop plans for moving and handling bariatric clients.

Health risks for bariatric clients

People who have been bariatric for a considerable time face chronic and serious health conditions. They usually have difficulty with hygiene and toileting because of their large abdomen, heavier body parts and skin folds, and all these factors affect their mobility. Skin and other body conditions need to be assessed before moving and handling bariatric clients.

Health conditions commonly experienced by bariatric clients include[9]:

- Skin excoriation (where the skin can be striped), rashes or ulcers in the deep tissue folds of the perineum, breast, legs and abdominal areas. There is also the possibility of fungal infection
- Bodily congestion, including fluid retention and poor circulation, resulting from heart and kidney failure. This congestion can cause the leaking of fluid from pores throughout the body, a state called diaphoresis, which makes the skin even more vulnerable to infections and tearing
- Diabetes and respiratory problems
- Added stress to the joints, which may result in osteoarthritis.

Why special planning is needed for bariatric clients

Moving and handling people is a significant hazard for health workers. Caring for a bariatric person is a crucial part of healthcare, but working with bariatric clients can accentuate the risks for both clients and carers. While lifting any client can lead to musculoskeletal injuries, strains, sprains and excessive spinal loading for carers, there are substantial risks associated with moving and handling bariatric clients when performing daily tasks.

Given the risk factors, client safety and the safety of staff need special attention when caring for bariatric clients. Bariatric clients may face greater health risks than the general population and have complex needs. The key to managing the risks around

7. Ministry of Social Development, 2010.
8. For example, Hignett et al 2007; Robertson, 2010.
9. A list of medical conditions affecting bariatric clients that are relevant to moving and handling tasks is available at www1.va.gov/visn8/patientsafetycenter/safePtHandling/BariatricMedicalConditions.pdf.

moving and handling bariatric clients is to develop and implement a moving and handling plan before their admission to care.

BOX 14.2

Planning for bariatric clients

Each time a new bariatric patient presents, some unique issues arise.

This means that only a certain proportion of the bariatric care tasks are routine and some new problem solving is required to fully and safely accommodate each patient, whether it be in the form of equipment or patient transfer procedures.

Source: Australian Safety & Compensation Council, 2009, p. 10

14.2 Planning for bariatric clients

This section covers specific topics that should be included in the planning process for bariatric clients in order to reduce moving and handling risks. The following key topics need consideration[10]:

- Admission planning
- Client assessment
- Communication
- Room preparation
- Mobilisation plan
- Equipment needs
- Space and facility design considerations
- Planning for discharge.

Admission planning

The care of a bariatric client usually starts at admission; however, even before they are admitted staff need to be prepared for a bariatric client. Before the client is admitted it is a good idea to check the corridors and hallways that lead to the client's room or treatment areas to ensure they are wide enough, and that the maximum capacity of any lifts (elevators) that need to be used is sufficient. If necessary, work out alternative routes to avoid potential physical obstacles.

Some steps that may be needed are:

- Provision of transport from the ambulance or other vehicle to the admission area
- Recording the client's existing health conditions
- The client is weighed during admission – knowledge of the client's weight is essential for planning the moving and handling needs of that client
- The client's family is briefed on the hospital's moving and handling policy and this is recorded in the client's notes
- Any equipment and other resources needed for moving and handling the bariatric client are confirmed as available, and checked to ensure that they are suitable
- A bariatric client kit is made available, which may include two client gowns, a large bedpan, two large slide sheets and a bariatric cuff
- All relevant departments and managers that will be providing care or services to the client are informed of the client's admission

10. The paper by Muir & Archer-Heese (2009), which describes many of these topics, is acknowledged.

- A mobilisation plan is developed and documented for the client following admission – this plan is updated at an agreed frequency or as the client's condition changes
- A preliminary discharge plan is prepared.

Client assessment

Assessing a client and the transfer tasks needed is the first step in the care and rehabilitation process (see Figure 3.1 in Section 3). The purpose is to identify the risks, goals and resources needed as part of the risk reduction process. Staff may be faced with unplanned situations that can increase the risks for client and carer. The assessment process balances the risks and needs of the client with the available resources. It is important to begin the assessment as part of the admission and schedule regular updates.

Assess a bariatric client's ability to assist during repositioning, transferring and ambulation. Identify tasks that require lifting, lowering, carrying, pulling, pushing and supporting. Where possible, use hoists or moving and handling aids to perform moving and handling tasks.

In addition to the recommended risk assessment (see Section 3 Risk assessment), critical issues to assess include the client's:

- Required level of assistance
- Weight-bearing capability
- Height, weight and body circumference
- Conditions likely to affect transfer or repositioning techniques – these may include hip and knee replacements, paralysis, amputations, contractures, osteoporosis, respiratory and cardiac conditions, and skin conditions.

Consultation with other professionals may be needed regarding the client's physical function and strength.

Communication

Two forms of communication are important. One is the communication that takes place among managers and staff within the organisation, and the other is the staff-to-client communication that can become part of the client's therapeutic processes.

Organisational communication is important in providing accurate, timely information to the relevant people about the client and their needs. Client information gathered during admission and assessment, including their mobility status, should be documented. Send this information to relevant people who have contact with the client, respecting the client's confidentiality where appropriate.

Staff-to-client communication is also important. A therapeutic relationship begins with good communication that makes the client feel safe, comfortable and cared for. A client's dislike of using specific equipment or transfer techniques should not lead to the use of unsafe moving and handling practices. A client's initial resistance can usually be overcome by carers taking time to explain why specific equipment and procedures are used to move people. As well, discuss treatment, moving and handling requirements and rehabilitation plans with the client's family or other support people. Communication is covered in more detail in Section 11 Workplace culture.

Room preparation

The following points need to be checked to ensure that the client's room or ward location is appropriately furnished and equipped.

- Bed – is the bed area large enough to accommodate all equipment needed to manage the client? Is there enough space around the bed area to move the client comfortably from bed to chair or commode chair? Is a single room preferable or is it too small? Are two bed spaces required for the client?
- Are the electric bed and the mattress of sufficient size and weight capacity?
- Equipment – ensure that any required equipment is delivered to the room as part of the bariatric kit.

Consider the space needed to move mobile equipment as well as space for the number of workers required to assist the client or move the equipment. If the bed or other equipment does not have sufficient load-bearing capacity, arrange for a suitable replacement from an equipment pool, or hire it from an external provider.

Equipment needs

Many organisations do not have bariatric equipment. For small facilities, hiring equipment before the admission of a bariatric client is an option. The person organising the equipment hiring needs to be aware of the different features and dimensions of the equipment. Organisations intending to buy bariatric equipment should consult closely staff who are likely to work with bariatric clients and suppliers to ensure they buy the right equipment for the tasks for which

BOX 14.3

Bariatric equipment assessment

Bariatric equipment is often defined by its weight capacity and an equal distribution of load across the equipment is assumed. However, in practice, the shape of the patient and the distribution of weight is variable. This places stress on components of the equipment such as wheels during movement.

Source: Australian Safety & Compensation Council, 2009, p. 10

it will be used. For example, the new equipment will have to fit through doorways and into lifts. Equipment that is likely to be needed includes:

- Weighing scales, preferably at floor level with the highest available capacity, in spaces allowing privacy
- Motor-driven bariatric wheelchairs, with the highest available SWL, for moving clients between locations within a facility. Also consider seat width to accommodate wider clients
- Interview chairs, with transportation wheels if the chairs are used in multiple locations
- Bariatric chairs for waiting rooms, with SWLs clearly marked
- Walking aids with SWLs of 250-300kg
- Air-assisted transfer devices for vertical and lateral transfers
- A mobile hoist or ceiling hoist – ceiling hoists have been identified as the preferred choice for bariatric transfers and bed repositioning[11]
- A mobile hoist for lifting clients off the floor in the event a client falls (if the bariatric ceiling hoist does not cover the whole area). Note that caution is needed when using mobile hoists with bariatric clients owing to the increased pushing force required and the wheel designs of some hoists
- Appropriate slings
- Electric bariatric beds with pressure-reduction mattresses
- Bariatric stretchers (note: some stretchers may have appropriate weight ratings but be too narrow for bariatric people).

FIGURE 14.1

Bariatric chair

11. Muir & Archer-Heese, 2009.

BOX 14.4

Providing facilities for bariatric clients

Large acute hospitals should consider the need for:

- One or more specially designed bariatric rooms/ensuites
- Provision for these patients in specific areas such as intensive care, emergency, theatre, negative-pressure environments, diagnostics and imaging, outpatients and maternity.

Small hospitals and aged-care facilities with infrequent bariatric presentations may choose to:

- Remove one bed from a two-bed room and use the room for one bariatric patient with hired furniture and equipment
- Refer bariatric patients to alternative facilities.

Consider not only the space required to use equipment but also storing it close to the point of use. Consider the required paths of travel and the access and ease of using equipment along these paths (e.g. doorway widths, floor surfaces).

Source: Queensland Health, 2010, part B, p. 50

Other useful items of equipment for bariatric clients include:

- Walking frames
- Sit-stand devices
- Trapeze bar systems for over beds
- Sit to stand hoists
- Electric bariatric armchairs
- Footstools
- Commodes
- Large bedpans
- Wash basins
- Extra-large slide sheets
- Extra-large gowns
- Blood pressure cuffs.

Space and facility design considerations

A large room is required for the care of a bariatric client to accommodate the person, the equipment and large furniture. Staff need sufficient space to avoid using awkward postures that can put them at risk of injury. This includes having a wide turning arc for bariatric equipment that allows safe biomechanical body positioning for carers. Areas

for special attention are bathrooms and toilets. Showers should be big and fitted with heavy-duty grab rails, multiple handrails, large seats and hand-held showerheads, while large toilet seats are recommended. For added safety, toilet fixtures and sinks should be mounted on the floor, not the wall, although take care that floor-mounted sinks do not interfere with wheelchairs. Bathrooms should be large enough to allow for staff assistance on two sides of the client at the toilet and shower.[12] Section 9 Facility design and upgrading has more information on design features for bariatric clients.

Planning for discharge

For discharge planning, ensure the appropriate facilities and arrangements have been made before the client is discharged so that they will be expected at their destination.

For a client returning home, before they are discharged assess what equipment and home help they are likely to need to function safely at home. Ensure there will be appropriate equipment and home help to support and maintain them.

FIGURE 14.2

Discharge planning is important for bariatric clients

12. See Wignall (2008) for further information about facility design for bariatric clients.

14.3 Developing organisational capacity for bariatric care

The previous section covered specific features needed to prepare for the admission of bariatric clients. This section covers longer-term developments for building capacity within an organisation to handle bariatric clients. These developments are essential to reduce personal risks for both staff and clients, and the potential disruption of services. The developments described in this section are particularly relevant to hospitals and large facilities.

The topics covered include:

- Developing a bariatric client pathway
- Staff training and education
- Monitoring and evaluation.

Developing a bariatric client pathway

It is important to plan all the stages and facility requirements for bariatric clients from admission through to discharge. A bariatric client 'pathway' refers to the route that a client will take from first contact with the service provider to treatment completion.[13] For facilities such as hospitals, this is the period from home into hospital and until the client is discharged. The organisation needs to ensure that the appropriate facilities, equipment and staff expertise are available at each stage (see Box 14.5).

BOX 14.5

Stages in the bariatric client pathway

- Notification of admission prior to arrival and preparation for arrival
- Admission procedures, including transport from vehicle to admission area for outpatient arrivals
- Access from admission area to ward or bed
- Access to specialist clinical facilities
- Rehabilitation and mobilisation services
- Discharge planning
- Discharge
- Communication with other agencies working with bariatric clients.

As part of the planning for a bariatric pathway, it is recommended that a bariatric working party be set up with representatives from the sections or units most likely to

13. See Hignett et al (2007) for more details.

handle bariatric clients.[14] The working party should include health and safety staff. The following tasks should be addressed by the bariatric working party. Some of these tasks may be more applicable for large healthcare providers that have higher numbers of bariatric clients.

- Compile information on client admissions for the previous five years to document the number of bariatric clients being admitted each year and the sections where they have been receiving clinical or other care. Useful data to collect are client weight and BMI, wards of admission and assistance required for hygiene care and ambulation
- Compile a bariatric equipment list or register
- Conduct an audit of moving and handling equipment to confirm which existing equipment is suitable for use with bariatric clients
- Plan for the acquisition and upgrading of equipment and spaces to handle bariatric clients
- Make recommendations regarding the location, access and priority for bariatric equipment (see Box 14.6)
- Make recommendations regarding the renovation of buildings to which bariatric clients are admitted
- Educate staff regarding moving and handling bariatric clients
- Seek consultation where there are difficulties in moving and handling a bariatric client. This could be the manual handling coordinator or equivalent with relevant expertise
- Hold regular meetings on the management of bariatric clients
- Develop a reporting system for incidents and accidents where bariatric clients were involved.

BOX 14.6

Bariatric equipment access

RGH (a regional general hospital with 30,000 inpatients) decided that an equipment pool would be more effective and would allow each department to treat the clinical conditions of the bariatric patients as well as manage the bedding and patient movement needs. RGH purchased five sets of bariatric equipment including items such as beds, power assisted bariatric wheel chairs, shower chairs and lifting machines of different load capacities.

Source: Australian Safety & Compensation Council, 2009, p. 6

14. See Robertson (2010) for an Australian example.

Staff training and education

Moving and handling bariatric clients poses a number of challenges to healthcare staff. Organisations that have few bariatric admissions may not have enough staff with bariatric training and experience. A 'cascade' approach is recommended where a bariatric working party or a moving and handling coordinator develops the specialist knowledge needed for bariatric care. This knowledge is then communicated to unit managers and staff at regular intervals, such as at briefing meetings for managers.

FIGURE 14.3

Staff training should cover moving bariatric clients

Information about the bariatric care pathway for the facility can be included in moving and handling training for staff, as well as specific training on bariatric risk assessments and the use of bariatric equipment. Bariatric equipment suppliers may be able to provide assistance with training in the use of recently purchased equipment. The internet also has some information on education and training materials (see 'Web resources' at the end of this section). These resources should not replace expert training but supplement it, and selection should be carried out by an appropriately skilled person.

BOX 14.7

Staff training in bariatric care

Problems can arise with staff being unfamiliar with equipment because of infrequency of use, high staff turnover or the employment of agency staff. Training to assess risk in a dynamic environment is also important such that appropriate decisions are made to control risk at the time of patient handling.

Source: Australian Safety & Compensation Council, 2009, p. 3

Monitoring and evaluation

To assess how well bariatric clients have been cared for, monitoring and evaluation of client care should be carried out. Monitoring and evaluation procedures should cover:

- The collection of incident and injury data to identify client size (BMI, seated hip width), weight and mobility status (see Section 12 Monitoring and evaluation)
- A review of near misses by the moving and handling coordinator, health and safety manager or bariatric working party
- Client satisfaction and comfort with equipment

- The monitoring of bariatric equipment needs and the development and upgrading of bariatric equipment during annual equipment procurement or capital expenditure requests.

Healthcare organisations are strongly advised to monitor the number of bariatric admissions, and client demographics. These data can be used to develop a business case for the procurement of equipment and furniture, staff training and space upgrading.

14.4 Specific issues related to the care of bariatric clients

There are several issues in bariatric care that complement topics covered earlier in this section. This section covers four additional issues and topics. These are:

- Assistance versus mobility and rehabilitation
- Emergency services
- Community care
- Bariatric pregnant women.

Assistance versus mobility and rehabilitation

A potential conflict in the moving and handling of bariatric clients concerns the need to use hoists and other moving and handling equipment while also promoting client rehabilitation and mobility. A focus on reducing risks for both staff and client during movement and handling may result in the client becoming dependent on carers and equipment and unable to move on their own initiative. This may lead to the neglect of the client's mobilisation and rehabilitation. There needs to be a balance between developing a bariatric client's mobility and using moving and handling equipment to ensure client and staff safety. Although there is no set formula to achieve a balance, it is important to be aware of these issues.

Emergency services

Given the rise in the number of obese people in New Zealand, emergency services such as the ambulance and fire services face the likelihood of having to transport bariatric clients. Ambulance and fire services and funeral workers face an increased risk of injuries when moving bariatric clients. They may have limited access to lifting equipment and there is often limited space within which to move or transfer clients safely. For these and other reasons, it is acknowledged that in the case of an emergency the correct moving and handling procedures and techniques may be difficult to apply, and there may be a place for well intentioned improvisation. Nevertheless, it is strongly recommended that a thorough risk assessment be conducted whenever possible.

Operational staff in emergency services need to be trained in moving and handling techniques to ensure that low-risk techniques are used. If hoists or other equipment are used, a competent person is needed to operate and maintain the equipment. All equipment should have the SWLs clearly visible. Equipment failure when moving and handling bariatric clients can result in significant injury to the clients and the people caring for them.

Steps should also be taken to protect the privacy and dignity of bariatric clients. The process of removing clients from their homes can attract curious onlookers, especially if doors need to be removed and walls cut open. Police assistance may be required to clear onlookers and place sheets over windows if required.

Client moving and handling may be compromised when working in confined areas that make access to the client difficult. Specific factors to include in the risk assessment prior to moving and handling a bariatric client are:

- The weight and size (BMI, seated hip width) of the person
- The size and SWL of equipment
- The use of equipment in restricted spaces.

Another risk to staff is that of crush injuries where hands or limbs become pinned between the client and a hard surface such as a wall or floor. This is a real risk if the client suddenly moves or falls while being moved.

FIGURE 14.4

Ensure door openings are adequate for bariatric clients

Hospitals and emergency services may need to meet to discuss protocols and specific arrangements for moving and transporting bariatric clients in an emergency. Transferring a bariatric client from a vehicle could pose serious difficulties if there are no appropriate protocols regarding equipment and services on arrival at the hospital.

Many mobile floor hoists will not be suitable for moving bariatric clients from vehicles, because their lift arms may make contact with the vehicle's door or the vehicle roof could prevent the client being lifted up off the seat. Some mobile hoists that have telescopic arms and retractable straps could be used, but hoists have weight limitations that must be checked with the clients' weights. Ideally hospital ambulance bays and triage areas will have ceiling hoists installed with the maximum available SWLs clearly visible.

Among emergency services that may need to transport or move bariatric clients, there should be a common special emergency code to signify 'bariatric and urgent' so that when the ambulance or another service arrives at the scene, they have suitable equipment. Ambulances, hospitals, fire emergency teams and police should share this common code.

Further reading on transporting bariatric clients, including case studies for ambulance, fire and funeral services, are available on the Safe Work Australia website (see 'Web resources' at the end of this section).

Community care

Consideration should be given to a bariatric client's discharge from a facility. Poor preparation for discharge can be disastrous for the client and their family. This could result in poor recovery or a worsening of their condition, which could lead to re-hospitalisation.

Topics that need to be assessed and dealt with (changes made, equipment or services provided) before a client's discharge are:

- The home environment access and space, especially if new equipment is to be installed
- What equipment is needed
- Ensuring that equipment and furniture used by the client have adequate SWLs
- Moving the client up and down ramps in a wheelchair, which may be high risk and need special arrangements
- Home support services for the client – home support workers may require specific training before the client's discharge
- Communication with other agencies and services – ensure that the appropriate notifications and referrals have been made before discharge, such as to the client's general practitioner, home support agencies and the community nurse.

Bariatric pregnant women

Bariatric pregnant women may have specific requirements (e.g. lithotomy, poles, water births) that require prior planning and additional facilities for birthing suites and services for pregnant women.

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Web resources

Safe Work Australia has published a series of reports on handling bariatric clients for hospitals and for ambulance, fire and funeral services. Its home page is: www.safeworkaustralia.gov.au. On the home page, click on Publications. Access the reports using the Publications search box with the keyword 'bariatric'.

Pressure Ulcer Prevention and Management Guidelines (Fact sheet for severely obese patients) (Australia)

www.health.qld.gov.au/psq/pip/docs/pup_obese.pdf

Supplying rehabilitation services for bariatric patients (United States)

www.rehabpub.com/issues/articles/2007-10_04.asp

Bariatric rehab (United States)

www.bariatricrehab.com/home.html

Fat Bias in Safe Patient Handling (patient perspectives on bariatric patient handling)

www.washingtonsafepatienthandling.org/images/meetingrockv5.pdf

Overweight and Obesity Trends Among Adults (United States)

www.cdc.gov/nccdphp/dnpa/obesity/trend/index.htm

NIH Obesity Education Initiative: Clinical Guidelines (United States)

www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf

Appendix 14.1 Chart for calculation of BMI – use height (centimetres) and weight (kilograms)

Height	155cm 5'1	160cm 5'3	165cm 5'5	170cm 5'7	175cm 5'9	180cm 5'11	185cm 6'1	190cm 6'3
Weight	BMI	BMI	BMI	BMI	BMI	BMI	BMI	BMI
80kg	33	31	29	28	26	25	23	22
90kg	37	35	33	31	29	28	26	25
100kg	42	39	37	35	33	31	29	28
110kg	46	43	40	38	36	34	32	31
120kg	50	47	44	42	39	37	35	34
130kg	54	51	48	45	42	40	38	36
140kg	58	56	51	48	46	43	41	39
150kg	62	59	55	54	49	46	44	42
160kg	67	63	59	55	52	49	47	44
170kg	71	66	62	59	56	53	50	42
180kg	75	70	66	62	59	56	53	50
190kg	79	74	70	66	62	59	56	53
200kg	83	78	74	69	65	62	58	53
210kg	87	82	77	73	69	65	62	58
220kg	92	86	81	76	72	68	64	61
230kg	96	90	85	80	75	71	67	64
240kg	100	94	88	83	78	74	70	67
250kg	104	98	92	86	82	78	73	69
260kg	108	102	96	90	85	80	76	72
270kg	112	105	99	93	88	83	79	75
280kg	117	109	103	97	91	86	82	78
290kg	121	113	107	100	95	90	85	80
300kg	125	117	110	104	98	93	88	83
310kg	129	121	114	107	101	96	91	86
320kg	133	125	117	111	104	99	93	89

Glossary

ACC – Accident Compensation Corporation of New Zealand

Accessibility of equipment – extent to which equipment is readily available when needed

Advocate – a person or group who guides and facilitates the development and implementation of policy

Algorithm – a diagram with a sequence of steps and options to help guide decision-making

Ambulatory client – a client who is capable of walking

Ambulatory equipment – equipment to assist clients to walk

Assisted walking – walking assisted by a carer, where the carer may provide some support

Assistive transfer device – a friction-reducing device for moving clients between adjacent surfaces

Audit – a check of specific programme components to assess whether planned or scheduled activities are carried out

Bariatric client – an obese or extremely large client, usually with a Body Mass Index (BMI) of 40 or more

Body Mass Index (BMI) – a person's weight (in kilograms) divided by the square of the person's height (in metres)

Carer – anyone who is caring for another person, who is doing moving and handling, whether as an employee or a volunteer

Carers' capacity – the physical capacity and limitations of people undertaking moving and handling tasks

Ceiling or overhead hoist – lifting equipment used for dependent clients who require assistance for vertical and horizontal movements. The electric motor that lifts the client is attached to tracking that is fixed to the ceiling or attached to a gantry. The hoist can be used to raise and lower a client and move them horizontally within the limits of the tracking

Client – anyone for whom care is provided by another person. 'Client' includes residents, patients and other people being moved and handled

Client dependency – the extent to which a client is dependent on others to assist with movements

Client moving and handling – one of the common terms used in healthcare and other settings to refer to tasks involving moving and handling clients

Client moving and handling plan – a record of the techniques and equipment recommended for moving and handling tasks on the client profile

Client mobility – the extent to which clients can move themselves unaided, or require assistance

Client risk profile – information recorded about a client, including a risk assessment and a plan for moving and handling the client

Client profile – a sheet or form that summarises a client's details, capabilities and needs and provides a moving and handling plan if needed

Code of practice – recommended procedures and techniques for compliance with the requirements of an Act

Controlling risk (risk control) – strategies used to reduce risk when planning moving and handling tasks so that the risk of injury or harm to carers and clients is minimised

Cost-benefit evaluation – a measure of whether the benefits of introducing a new programme are greater than the costs of the programme

Culture of safety – the collective belief among people in a workplace that safety is a shared responsibility and is crucial to ensure staff and client safety

DHB – District Health Board, a regional organisation responsible for government-funded health services in New Zealand

DPI Programme – Preventing and Managing Discomfort, Pain and Injury (an ACC programme)

Educator – a person who educates others on moving and handling, including providing training and training content

Environment – the setting in which a task will be undertaken, including space, availability of equipment, staffing levels, work culture and other resources

Equipment – aids and devices used for moving and handling people, such as slide sheets, electric beds and hoists

Equipment check – an assessment list and schedule of time periods for specific items of equipment to be checked

Equipment register – list of all items of equipment held, suppliers, locations, servicing requirements and person responsible for maintenance

Ergonomics – the study of the relationship between work behaviours, the physical environment where work takes place and the tools used during the work. Ergonomics assists the design of workplaces to ensure they are consistent with the biomechanical, physiological and psychosocial limits of people

Evaluation – systematic and often extensive review and assessment of a programme to assess how well it is working

Force – the amount of physical effort required to perform a task

Harm – illness, injury or both, and includes physical and mental harm caused by work-related stress

Hazard – an activity, arrangement, circumstance, event, occurrence, phenomenon, process, situation or substance (whether arising or caused within or outside a place of work) that is an actual or potential cause or source of harm (Department of Labour, Keeping Work Safe, 2009)

Impact – a longer-term effect of a programme

Indicator – measure or variable used to track how well a programme is working. May refer to implementation indicators (e.g. audits) and outcome indicators

Infection control – reducing the risk of infection and preventing the spread of microorganisms in body tissues. For equipment, it often refers to requirements for cleaning and disinfecting equipment after specific types of use to avoid infection risks

Lateral transfer – a transfers involving moving a client from one location to an adjacent location at the same or similar level

Legislation – laws or Acts enacted by Government

LITEN-UP approach – a specific strategy for assessing risk when moving and handling people

Load – characteristics of the client being moved and handled, including size, weight, age, dependency, ability to cooperate and fall risk

Manual handling – any activity requiring effort by a person to lift, push, pull, carry or move, hold or restrain another person or an object

Mobile hoist – a floor-based hoist, with wheels or castors, that allows the movement of a dependent client from one location to another. The client is raised and lowered using an electric motor and one or more carers push the hoist between locations

Monitoring – collecting information to track how well a programme is operating

Moving and handling – one of the common terms used in healthcare and other settings to refer to tasks involving moving and transferring clients

OSH – occupational safety and health, the term commonly used in New Zealand to refer to workplace safety

Outcome – the effect of a programme on its intended target groups. Sometimes refers to short-term outcomes

Output – an activity or service provided that is part of a programme's implementation

Patient – a person who is receiving care or being looked after by another person

Policy – a formal statement about how an organisation or institution should operate in relation to the purposes or functions included in a policy

Policy development group – a group responsible for policy consultation, development and implementation

Policy development plan – a plan for the implementation of a policy, which includes people responsible for specific tasks and dates for completion of tasks

Policy implementation – turning a policy into a programme that influences ongoing practices

Policy rollout – where some units or wards implement policy initially, followed by other units several weeks or months later

Procurement system for equipment – system for assessing and purchasing, leasing and hiring equipment

Programme – a systematic intervention, service or change initiative within an organisation

Programme review – monitoring a programme during its implementation to ensure that it is working as intended

Stakeholder – a person or group who has an interest in programme implementation and outcomes

Risk – the possibility of something happening. In moving and handling, risk generally refers to the possibility of negative outcomes occurring. A low risk means a low likelihood of a negative outcome

Risk assessment – an assessment of the actual or potential hazards that is carried out prior to moving and handling people. Carried out in conjunction with controlling risks

Serious harm – the permanent loss of bodily function or the temporary severe loss of bodily function or musculoskeletal disease

Significant hazard – a cause, or potential cause, of serious harm or non-trivial harm whose effects on any person may depend on the extent or frequency of the person's exposure to the hazard

Sling – a fabric device used with electric hoists to lift and transfer a client from one location to another. The client being moved is placed in the sling and the sling is attached to a hoist that does the lifting

Standing hoist (also known as a 'sit to stand hoist' and 'lift') – a mobile electric hoist that moves on castors and is used to raise a client from a seated position and move them to another seated position. The client being moved requires some upper body strength, some weight-bearing capability and the ability to hold on with at least one hand

SWL – safe working load: the maximum load that equipment is designed to carry. May also be referred to as safe working limit

Task – a type of moving and handling activity that may be undertaken by a carer

Trainer – a person who provides direct training on moving and handling techniques

Transfer – the movement of a client from one place to another. Lateral transfers are those that involve primarily horizontal movements (e.g. from a bed to a stretcher). Vertical transfers are those that involve vertical movements and often horizontal movements as well (e.g. from a chair to a bed)

Transfer chair – a device that converts from a chair into a stretcher and vice versa

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