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Research Report

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Research on the need for two care workers in a community setting

Final Report

Rosemary Kayess, kylie valentine, Denise Thompson, Ariella Meltzer, Karen R. Fisher

For Ageing, Disability and Home Care,

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Publications, SPRC,
Level 2, John Goodsell Building
University of New South Wales,
Sydney, NSW, 2052, Australia.

Telephone: +61 (2) 9385 7800
Fax: +61 (2) 9385 7838
Email: sprc@unsw.edu.au

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Research team

Social Policy Research Centre, UNSW

Rosemary Kayess, kylie valentine, Denise Thompson, Ariella Meltzer, Karen Fisher

People With Disability Australia

Damien Anderson, Emmie Hallett, Michael Bleasdale

Contact for follow up

Rosemary Kayess, Social Policy Research Centre, University of New South Wales, Sydney NSW 2052, Ph: (02) 9385 7800, r.kayess@unsw.edu.au

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Abbreviations

ACP	Attendant Care Program (NSW)
ACPDU	Attendant Care & Physical Disability Unit (NSW)
ADHC	Ageing, Disability and Home Care (NSW)
APTA	American Physical Therapy Association
DADHC	(NSW) Department of Ageing, Disability and Home Care (now ADHC)
HACC	Home and Community Care
HNP	High Needs Pool (NSW)
HSE	Health and Safety Executive (US)
OH&S	Occupational Health and Safety
OSHA	Occupational Safety and Health Administration (US)
PAC	Personal Attendant Care (Canada)
RCN	Royal College of Nursing
SPRC	Social Policy Research Centre
VHIA	Victorian Hospitals Industrial Association
VNBIPP	Victorian Nurses Back Injury Prevention Project

Executive Summary

Ageing, Disability and Home Care (ADHC), Department of Family and Community Services NSW, through its Attendant Care and Physical Disability Unit (ACPDU), commissioned the Social Policy Research Centre (SPRC), University of New South Wales (UNSW) to undertake a research project on the need for two care workers in a community setting.

ADHC wishes to explore approaches to two person services: to understand how services are currently operating, both within the Attendant Care Program (ACP) and the High Needs Pool (HNP), in a community setting, and in hospital and other like settings; to assess the reasons for and the risks of using two workers; to establish the possible use of equipment and technological solutions and their cost; and to develop appropriate training packages and guidelines.

The methodology was a review of literature and policies and consultations with interested stakeholders, the development of guidelines and a request form template, and a report. This report is a summary of the findings. The guidelines are a separate document with specific considerations for determining the need and alternatives to two care workers.

Literature review

The literature review was about when are two or more attendant care workers needed to work at the same task at the same time in a community setting. The usual context within which the use of two person care is mentioned involves managing lifting, moving and transferring clients, risk assessment and safe handling. This section summarises the literature, with the full references included in the body of the report.

There is very little mention of two person care in the community care literature, and nothing at all on two person care (or care by more than one person) as a separate issue. When the presence of more than one worker is mentioned, it is not distinguished from one person care. The review did not uncover any instances where care by more than one person was mandated across the board in specified circumstances.

Most of the literature about safe client-handling and risk of staff injuries refers to institutional care rather than to community settings. Some of the institutional care literature is applicable to support in the home. Some Swedish research investigates the ergonomic risks to attendant care workers.

This review found mentions of occasions where two care workers were used, although the sources did not give reasons for the practice. There were also a number of occasions when using two or more workers was explicitly recommended for client-handling tasks: for complex personal care; as a short-term solution while waiting for the appropriate equipment to arrive; for raising someone from the floor; sometimes when using a hoist; when the client is uncooperative; and in the case of bariatric clients.

There is some discrepancy among the findings of various studies about the extent to which team lifting can reduce musculoskeletal injuries among care workers. A number of studies have shown that that it does, but at least one study failed to find some reduction in employee injuries after the introduction of team lifting. Other research has also found that having two or more workers is no guarantee of avoiding injury. The guidelines for avoiding musculoskeletal injuries among care workers do not indicate that injuries only occur when staff work alone.

The current emphasis in the human services sector is on eliminating client lifting to the fullest extent possible, whether performed by one person or by more than one. The usual term for this is 'No Lifting', and it involves:

- encouraging clients to assist in their own transfers
- assessments of client-handling risk
- using mechanical lifting aids and other equipment
- modifying the work environment to accommodate the equipment and
- training all staff in the correct use of equipment and techniques for moving and transferring clients.

Stakeholder views

The second research method was interviews with interested stakeholders, including clients, family members, service providers, advocacy and service peaks and government representatives. Most stakeholders noted that the use of two care workers has become more common. This was attributed to people with disabilities increasingly living within the community resulting in an increased complexity of support needs of people living at home as well as an increased emphasis on workplace safety. The most frequent reasons for the use of two care workers were:

- Client age, weight, size, and physical function (capacity to assist with lifting and positioning)
- Client challenging behaviour
- Scoliosis, spasticity or other high support needs related to positioning.

The stakeholders described the primary benefits of two care workers as relating to worker and client safety. They thought that using two care workers reduces the risk of manual handling injuries and unsafe handling of clients, and provides a more secure working environment for workers, in which the risks to workers from clients' challenging behaviour, grievances and complaints, or unsafe environments are lessened. The perception of safety seems to be as important to workers and clients as actual risk. The interviews indicate they do not agree about whether the use of two care workers actually reduces the risk of injuries, compared to the use of one worker.

They identified assessment as an area in need of improvement. In terms of indicators for the use of two care workers, stakeholders identified the need for risk assessments to include:

- Client weight and height
- Ventilation needs during specific tasks
- People with high physical needs: for example, whether a client has to be moved or positioned while a task such as towelling or drying is being performed
- Equipment available and potential for the environment to be modified to bring in equipment
- Scoliosis of the spine
- Extent of spasms and contractures
- Situations that might present a risk of abuse to staff and clients
- Assessment of the home environment.

They also described a number of disadvantages of two care workers, aside from cost. The most significant of these is the impact on client privacy and home environment. Also relationship dynamics were described as tending to be more complex with a three person relationship than that between a client and single worker. The presence of two care workers may also be less safe than using one worker. Physical disparity between a worker and client can increase the risk of injury to client and/or worker, physical disparity *between* workers can also increase these risks. The increased complexity of organisational factors with two workers was also noted. Cost is a significant factor in terms of salaries and the indirect costs of two carers, associated with the organisational resources required to coordinate this arrangement.

Stakeholders identified possible alternatives to two care workers for each of the reasons to consider using two care workers (an exception was for some specific tasks for clients who use ventilators, where no alternative to two care workers was suggested). When the decision to use two care workers is based on physical considerations—the nature of the client's physical disability, and so the nature of the physical tasks undertaken by workers—the alternatives proposed were equipment, environmental modifications, and staff training. Challenging behaviour and worker safety also recurred as a reason for two workers, and fewer alternatives were suggested here, which may indicate that agencies and practitioners are not aware of the interventions and strategies that may be suitable in these circumstances.

Implications for principles and guidelines in practice

The policy and service factors that make it possible for people with high support needs to live at home are relatively new. Research on the specific configurations of support that enable people to live at home is also new. It is therefore not possible to point to robust empirical evidence for the use of alternatives to two care workers, but it is possible, based on the literature and stakeholder consultations, to suggest principles and processes to guide assessments. Approaching decision making with these principles can facilitate individualised assessment about specific problems

and solutions, and address both the actual and perceived benefits and risks of two care workers.

The principles to make decisions about alternatives to two care workers relate to:

- client and worker safety
- meeting the needs of clients and
- ensuring that both clients and workers feel secure.

Some of the alternatives to two care workers relate to training and equipment. Other alternatives relate to better systems of support for workers and clients, to address the anxieties about the use of single workers. Evidence on multidimensional strategies for safety and injury prevention include risk assessment, education and training, environmental modification and monitoring systems. Management processes such as team management structures to provide peer support for validation and learning can address isolation and confidence of workers. Such strategies are also opportunities to follow the principles of person centred planning, by building a team in which the client's specific needs are at the centre, and in which communication, training and support for staff are based on these needs.

Risk management is an important consideration for agencies, particularly in relation to the risk of client and worker injury. Addressing the responsibilities of agencies to minimise risk, and adapting the sometimes inflexible systems in which risk assessments are devised, can avoid a simplistic two care worker response to risk management.

The report summarises the principles and strategies for making decisions about needs and alternatives to two care workers. It lists principles behind decisions about the use of two care workers, as identified in the literature and stakeholder consultation. It also identifies strategies for addressing these principles, which may provide alternatives to the use of two care workers. These high-level strategies are also derived from the literature and consultation. They are a summary of principles and possible strategies, and are not intended as a resource manual or user guide for practitioners. The accompanying guidelines to this report serve that detailed function instead.

1 Introduction

The Attendant Care & Physical Disability Unit (ACPDU), Ageing, Disability and Home Care (ADHC), Department of Family and Community Services NSW commissioned the Social Policy Research Centre (SPRC) at the University of New South Wales to undertake a project initially entitled 'When are two care workers needed in a community setting?' This is the draft final report of the project, incorporating the literature review and data from stakeholder interviews. Guidelines for service providers are a separate document with specific considerations for determining the need and alternatives to two care workers.

ADHC wishes to explore approaches to two person services: to understand how services are currently operating, both within the Attendant Care Program (ACP) and the High Needs Pool (HNP), in a community setting, and in hospital and other like settings; to assess the reasons for and the risks of using two workers; to establish the possible use of equipment and technological solutions and their cost; and to develop appropriate training packages and guidelines.

1.1 Background

The ACPDU administers two high-level in-home support programs, the ACP and the HNP. Both these programs assist individuals to live independently in their own homes by providing a high level of personal care support. Support is defined as 'high level' when it is required for more than 15 hours per week. Both programs are capped at 35 hours per week, but since April 2009 ACP clients have been able to access recurrent funding for between 36 and 50 hours per week (Level 2) if they satisfy certain criteria.

The use of two care workers to perform a task in a community setting is an important issue because it can result either in a reduction of the amount of face-to-face service the client receives, or in a doubling of the cost of the service. Agencies are concerned about the safety of both clients and staff, and they are also concerned about workers' compensation claims, especially as the average age of the community care sector workforce tends to be higher than the workforce in general. Health and Community Services are one of ten industries that experience injury incidence rates higher than the New South Wales average with 5,638 incidents per year. It also ranks second behind manufacturing with high incidence rates for workplace injuries for women (Workcover NSW 2010) The incidence of over-exertion accidents and musculoskeletal disorders among female attendant care workers in Sweden was found to be higher than among nursery-school workers and employed women in general (Ono et al, 1995); and a Canadian study (Alamgir et al, 2007) found that attendant care workers had even higher rates of injury than nurses. Employers have to decide the nature of the risk to their workers and implement safe work practices as appropriate. Using two care workers, especially in relation to heavy manual loads, is seen as one mechanism to reduce the risk. However, although the responsibility lies with each employer, it also has implications for funding bodies of cost implications in a fixed budget context. It is also recognised that there is a higher demand for ongoing disability support than available resources can provide.

Using two care workers can have negative effects on managing support programs with capped resources. In-home support can become unviable for some people if the maximum allocation of hours per week is depleted by two care worker shifts and is therefore insufficient to meet the client's care needs. In addition, the effect of requests for additional hours to cover two care workers can be the opportunity cost to remaining resources available for other people requiring support. Consequently, it is important to be able to establish processes to identify alternatives to two care workers and to identify specific circumstances when additional hours for two care workers are required because no alternatives are available.

The use of two care workers in a community setting is an important issue for ADHC because of implications for safety clients and staff, risk management, workers compensation, cost, flexibility in service delivery while coordinating available care workers, preferences and impact on clients and families.

Moreover, the second five-year stage of the NSW government's 10-year plan to transform the disability services sector in NSW, *Stronger Together*, expands person-centred approaches across the sector. The aim is to ensure that people with a disability are at the forefront of the decision-making and choices that affect their lives, including choices about methods to meet their support needs, managing care worker responsibilities such as work conditions and safety for workers and the person receiving support. This means that there is a need for better information on the use of two care workers, and alternatives to two care workers, in order to allow clients the capacity to make informed choices about their support needs.

Standards of quality relevant to the research project include disability standards, occupational health and safety standards, worker conditions and other industrial relations standards.

1.2 Project objectives

The project objectives were:

- to develop an understanding of the ACP and HNP and the issues that arise if a two person service policy is employed by service providers in a community setting
- to conduct a review of literature and policies regarding the employment of two person service in hospital and other like settings as well as in the community
- to consult with key stakeholders to identify and develop an understanding of the issues relating to the need for two workers in a community setting from various perspectives
- to research and review information about available equipment and technological solutions that may reduce the need for two workers, and the costs relating to the assessment, purchase and maintenance of any identified equipment and technological solutions
- to provide appropriate recommendations and develop a clear set of indicators around situations in a community setting where it is appropriate to use two workers and outline the associated reasons and risks

- to develop appropriate manual handling competencies and a training package for use by service providers when training care workers
- to develop a guide for service providers that contains information about use of two workers, and how to identify and communicate these risks when requesting additional hours
- to redevelop the ACP and HNP Request for Additional Hours form into a format that can be easily completed by service providers when requesting additional hours due to the need for two workers.

2 Method

2.1 Literature and policy review

We conducted a literature and policy review on

- reasons, risks and consequences of two care workers practices in community and other settings (safety, cost, responsiveness to client needs, worker satisfaction)
- alternatives to two care worker practices in community and other settings (training, assessment, equipment, technology and practices) and the costs.

2.2 Stakeholder consultation

In the second phase of the research, we consulted with a range of stakeholders (Table 2.1). ADHC made contact with clients, family members, service providers, advocacy and service peaks and government representatives. Contact details were provided to the research team after consent was given to participate. The project had UNSW ethics approval (HREC 11324).

Semi-structured phone interviews were conducted October 2011 to January 2012. Consultation topics included the reasons for using two care workers, principles to guide their use, alternative approaches, changes over time in the use of two care workers and assessment processes.

Table 2.1: Research sample

	Number of people
Clients	8
Family members/informal carers	2
Workers and managers (service providers)	4
Government	3
Advocacy and service peaks	3
Other (assessment, insurance)	4

The clients who participated in the consultation interviews had different experiences of care workers. Four had no experience of two care workers, and four had current or previous experience with two care workers. Of those with no experience, one client was living in group accommodation and reported on his flatmates' experience of two care workers, and three were in the Attendant Care Program.

The sample of clients also reflected diversity in terms of gender, metropolitan/regional locations and lifelong/acquired disabilities. The sample had less diversity in terms of age, with most clients in their 40s or 50s, although there was one family member of a teenager with a disability.

2.3 Steering committee

Another source of data was the project's steering committee, which was constituted to provide advice and feedback on the project's methodology and findings. The steering committee was made up of representatives of consumer, policy and service delivery organisations: Northwest Therapy, ADHC Manual Handling Unit, Brain Injury Association of NSW, Attendant Care Industry Association, Physical Disability Council of NSW, Spinal Cord Injuries Association, Just Better Care Community Services, Australian Home Care Service, Lifetime Care and Support Authority, MS Australia, Cerebral Palsy Alliance.

2.4 Limitations and caveats

The sample for the consultations was very small, and participated after nomination from ADHC. The views of participants cannot be generalised, as it is not possible to know how representative their experiences and opinions are.

In particular, there are limitations to the client sample in terms of age, as indicated above, and limitations in that most clients (except one) had a physical disability. Given the issue of challenging behaviour reflected in this report, not including other disability types is seen as a limitation.

Further, there are limitations to the care worker sample. Two care workers were interviewed in this sample. This number did not allow full reflection of a range of issues for and characteristics of care workers that may affect their perspective on the two care worker issue, such as their own size and strength, type of training, type of agency, experiences in service provision and philosophy of service or care. Future research could address these limitations.

3 Literature and policy review

3.1 Definitions

The expansion of the research to when are two or more attendant care workers needed to work at the same task at the same time in a community setting focused on identifying the occasions on which any increase in service hours is justified because there is no viable alternative.

The inclusion of the term 'two or more workers' is a response to the discussion in the literature about OH&S issues in the healthcare workforce that occurs in the context of institutional care – hospitals, aged care and long-term care facilities – where there are many members of staff present all the time. In that context, questions about whether tasks should be performed by one or more people make reference to more than two staff members.

Mention of the fact that the two (or more) employees are working 'at the same task' and 'at the same time' involves a further clarification. Simply referring to 'two (or more) workers' is not sufficiently precise. Clients are often served by more than one worker. For example, ADHC's guidelines for manual handling risk management in community care (DADHC, 2006: 18) notes that a client could have up to 10 staff working in their home, counting night shift, weekend staff and casual staff as well as the client's usual worker(s). However, these staff do not all work at the same time.

The attendant care worker is usually the sole worker providing assistance at any one time for the person with disability. For example, the fact that only one staff member is to be provided per service is emphasised in the assessment procedures of Personal Attendant Care Inc (PAC, 2009b), a charitable non-profit organisation in Ontario, Canada; and the wording of their health and safety regulations in relation to lifts and transfers (PAC, 2009a) makes it quite clear that services are being carried out by a single worker.

Working singly is recognised as one of the organisational aspects of the job that can increase the level of risk. In their *Health and Safety Guidelines for Home Care Workers*(UNISON, no date), Britain's largest public sector union commented that 'As lone workers, home care workers can be particularly vulnerable as they are isolated from other workers and cannot easily liaise with colleagues'. Again, the Queensland Government's *Code of Practice* for manual tasks involving the handling of people (Queensland Government, 2001) acknowledges that working singly means that a worker cannot call on another person for assistance or use team-handling. However, there is no suggestion that the risks should be managed by supplying two workers where the task has traditionally been done by one.

It may sometimes be necessary, of course, for two people to be available for the same task at the same time, and a number of examples are given in what follows. However, each of these examples involves a particular situation and there is no suggestion that the use of two workers should be made into a mandatory requirement across the board, e.g. whenever there is a hoist involved, without the need to consider each case on its merits.

The review found that the usual context within which the use of two person care was mentioned involved issues around the lifting, moving and transferring of clients, risk assessment and safe handling. There are situations other than client-handling which could also call for two or more workers to work together. For example, isolated or remote work might require using two workers rather than one (SA Government, 2009),[1] as might situations where workers are likely to encounter violent or aggressive behaviour. WorkSafe Victoria (2006: 39), for example, recommends that at least two employees be allocated to visit a home where there is a known history of aggressive or violent behaviour. Community mental-health workers in particular have been found to experience high levels of aggression in the course of their work (96% in one study) (Fry et al, 2002), although not necessarily in the form of physical violence. The researchers attributed this high level of aggressive incidents to the failure of workers to report the incidents (because staff regarded them as a normal part of the working day), and to inadequate staff-safety training for community mental-health settings. UNISON (no date) mentions a number of other situations where working alone can put workers in a vulnerable position: if they are perceived to be carrying money, drugs or valuable equipment; accidents or emergencies arising out of their work; inadequate provision of rest, hygiene or welfare facilities; violence from clients or members of the public; and manual-handling incidents.

The risk of allegations of abuse has also been suggested as a reason for having two care workers work together. One domiciliary care worker posted a question on a Yahoo Answers website[2] asking if he was required to use the communal showers with his client at a gym he attended with the client. The person who answered said 'no', because it might put him in a compromising position. This person then went on to say that, as a result of allegations against nurses in the aged care facility where this person was employed, nurses now worked in pairs, especially when they were working with someone of the opposite sex or with those people known to be likely to make false claims.

However, these other areas of concern received far less attention in the literature than the manual-handling of clients and OH&S concerns about musculoskeletal injury of care workers, predominantly of nurses in an institutional setting.

3.2 Community setting

This review uncovered very little mention of two person care in the community care literature, either in the 'grey' literature from government and other agencies or in the academic literature, and nothing on two person care (or care by more than one person) as a separate issue. When two person care is mentioned, it is not distinguished from one person care, although the reason for the presence of more than one worker can sometimes be deduced from the context. Part of the reason for this might be that community services in general are under-researched (Fleming and Taylor, 2006) – most of the research has been done in institutional settings. Little work has been done on the health of attendant care workers in comparison

[1] See also the HACC/ADHC work-safety advice on working alone or in isolation: http://www.haccohs.adhc.nsw.gov.au/common_risk_areas/working_alone_or_in_isolation

[2] http://uk.answers.yahoo.com/question/index?qid=20100722040331AAMgaxk.

with nursing staff in hospitals, even though work in private homes entails many of the same risks as institutional health care, as well as extra burdens because the work environment is uncontrolled and less standardised (Ono et al, 1995). (There is some Swedish research on ergonomic risks to home care workers – see section 2.4 below).

The review did not uncover any instances where two person care was mandated in specified circumstances across the board, for example, when hoists were being used. The Victorian NW Residential Support Services guidelines on manual assistance to people in residential care (2001), for example, do not even mention two person care. Instead, recommendations refer to the need for assessing each particular case as it presented. A manual-handling care plan for each person is the recommended procedure. These guidelines state that the plan should indicate the specific manual-assistance techniques the support worker should use for particular activities. They also specifically forbid the use of particular lifting techniques (except in an emergency), i.e. shoulder lift, cradle lift, top-and-tail lift, and lifting a resident up from the floor on one's own. But they do not specify any situations where two support workers should be used (Victorian NW Residential Support Services, 2001). Similarly, although the UK Department of Health's national minimum standards specify that 'two people fully trained in current safe handling techniques and the equipment to be used are … involved in the provision of care', this is only the case when the need has been identified from the manual-handling risk assessment(UK DoH, 2003).

3.3 Institutional setting

Most of the literature on safe client handling, and on the risks of injuries to staff, refers to institutional care – hospitals, aged care facilities – rather than to community settings, e.g. the O'Shea No Lift System (see below), O'Shea and Hennessey's Handbook for WorkSafe Victoria, *Transferring People Safely* (O'Shea and Hennessey, 2009), which was produced specifically for use by Victorian employers in health and aged care settings.[3]

Nonetheless, some of the institutional setting literature also applies to care in the home. As all healthcare workers who perform physically demanding client-handling tasks as part of their jobs, whether they be nurses or attendant care workers, are at high risk of developing musculoskeletal disorders (Waters and Rockefeller, 2010). WorkSafeBC in Canada (2006) also noted that much of the content of their client-handling guide for staff in long-term and acute care settings would apply to other workplaces where care workers manually handle clients, such as community care.

[3] See also: Matz, no date; Engkvist et al, 2000; Keating et al, 2002; Haiduven, 2003; Collins et al, 2004; Martin et al, 2004; WorkCover NSW, 2005; APTA, 2006; WorkSafe Victoria, 2007; Rockefeller, 2008; Jung and Bridge, 2009; Kutash, 2009; Kutash et al, 2009; OSHA, 2009; Saracino et al, 2009; Springer et al, 2009; http://www.health.vic.gov.au/nursing/promoting/back_injury (Vic Nurses Back Injury program).

3.4 Risks among attendant care workers

A number of Swedish studies have investigated the risks among attendant care workers, mainly ergonomic, that could lead to early retirement or permanent work disability. Brulin et al (1998, 2000) investigated several exposure factors for complaints in the shoulder/neck and low back areas among female attendant care personnel. They found that 'standing in forward-bent and twisted postures' was a risk factor for both upper back (shoulder and neck) pain and low back pain. In the case of upper back pain (but not lower back pain) the risk increased when people who used this stressful posture also reported that they had 'no possibility of influencing the planning of work'.

Torgén et al (1995) investigated physical work load, physical capacity, physical strain and self-rated health among elderly attendant care aides (aged between 45 and 65). The study found that attendant care work is characterised by long periods of standing and walking, and that postures potentially harmful for the low back and shoulders occurred frequently. The study also found that cleaning was the most strenuous task, that the aides very seldom did any lifting, and that they mostly worked alone.

Delve et al (2003) found that the most important risk factors in the work environments of attendant care workers (and among nurses and occupational therapists) were poor ergonomic/lifting conditions, time pressure, and lack of professional caring technique. This latter factor involved workers becoming too emotionally involved with the people they were caring for and hence failing to keep a professional distance. Aronsson et al (1998) also found that, in addition to the relatively well-known problems of the physical demands of the job, psychological aspects – in particular, the relationship between helper and client – played a major role in excluding people from the attendant care workforce.

Johansson (1995) compared the workloads and musculoskeletal symptoms of attendant care workers with those of a comparison group of municipal employees, and found higher rates among the attendant care workers. It was the combination of high physical workload with a poor psycho-social work environment which produced the greatest differences between the two groups in incidence of neck and shoulder symptoms (also Ono et al, 1995).

3.5 Policy for attendant care workers

The legislative context for occupational health and safety is the *Work Health and Safety Act* (2011), it provides that the health and safety duties of employers and businesses are the responsibility of the person conducting a business or undertaking. This requires that service providers must fulfil its health and safety duties to anyone who may be affected by its operations, including volunteers. Service providers have an absolute duty to take all reasonably practicable steps to ensure the health and safety of workers and other persons impacted by the business or undertaking. Reasonably practicable steps means those available ways of eliminating or minimising the risk of injury after having considered a number of relevant matters together, such as the likelihood and severity of the risk and the means to control it, weighed against the costs associated with eliminating or minimising the risk (WorkCover 2011).

Legislation has not been clear who is responsible for the condition of the premises when the private home becomes a workplace as in the case of attendant care. Most service providers hold clients responsible for maintaining safe premises, and include that in their service agreements as a condition for the provision of services. However, a better approach is for services providers, workers and clients to work in partnership to consider the risks and how to best address them, and a formal framework to guide collaboration is useful (DADHC, 2006).

In NSW (and elsewhere) the key features of a client-handling policy are:

- that workers are not to manually move a client's body weight, either wholly or in part, unaided
- that mechanical equipment must be used if a client has to be moved and
- that manual lifting is to be used only in extreme circumstances, either in emergencies or when all other methods have failed (DADHC, 2006).

The NSW government, through ADHC, has developed a manual handling policy for disability and community care supported by *Best Practice Guidelines* for manual-handling risk management (DADHC, 2006). There was a review of the manual-handling training programs of the Home Care Service of NSW, a statutory corporation and the largest provider of home-based care in NSW. In January 2005, ADHC introduced a program using occupational therapy manual-handling advisors to conduct expert risk assessments with a view to eliminating high-risk tasks from staff routines. The program targeted sites with high exposure to manual handling risk and a history of manual-handling incidents and injuries. Manual-handling injuries and the costs associated with them have been reduced since 1997/98(WorkCover NSW, 2006).

There is general agreement at the policy level that team lifting as a way of dealing with manual handling risks should be used only as a last resort. The NSW *Occupational Health and Safety Regulation 2001*, for example, emphasises the importance of achieving risk control by means other than team lifting, as far as is reasonably practicable. ADHC's 'DisabilitySafe' website[4] stresses the same point, suggesting a number of other ways of controlling manual handling risks, e.g. by modifying the work environment or the design of objects, by providing mechanical aids, by ensuring staff are adequately trained. (See also: WorkCover NSW, 2004; WorkCover NSW, 2006).

The Queensland Government's *Code of Practice* for manual handling tasks (Queensland Government, 2001) also says that team handling should only be used when there is no other solution. The authors go further to say that team handling itself involves a number of risks, namely:

- inexperience in team members
- unequal sharing of the load

[4] http://www.disabilitysafe.com.au/hazards-risks/manual-handling

- different capacities and physical dimensions of team members
- different degrees or timing of force exerted by different team members
- loss of coordination due to adjustments made to fit in with other team members
- heavier loads on team members at the lower end of steps or slopes
- unexpected load increases or changes in balance due to one team member losing their grip and
- 'social loafing', whereby some team members carry the bulk of the load because others are using minimal effort.

On the whole these studies did not suggest that employing two people instead of a single worker might be a solution to the problem of musculoskeletal injuries or other health problems among attendant care workers. However, Delve et al (2003) did tentatively suggest 'co-working' in clients' homes, as partial compensation when there were no lifting aids and/or there was a bad working environment.

3.6 When two or more care workers are used

This review found a number of instances where two care workers were used. Unfortunately, the sources did not give reasons for the practice. One example is Care UK,[5] a large for-profit health and social care provider of attendant care services for a range of people including those with physical disabilities, as well as operating nursing and residential homes for older people. In partnership with local authorities, they provide an 'outcome-based dual assist service' which involves a team of two care workers. The various descriptions of the service on the Care UK website do not give reasons for using two care workers instead of one. However, the examples given of the kinds of outcomes for service users – personal care, meal preparation, shopping, social inclusion and community integration – do not suggest that the use of a hoist or manual handling more generally is a reason for using two workers.

The second example is in an institutional setting. The Victorian Hospitals Industrial Association's advice on overhead tracking (i.e. ceiling hoists) for safe people-handling in hospitals (VHIA, 2003) mentions 'two carers for mobile hoists' (in contrast to needing only one carer to undertake transfers using overhead tracking). The Association's advice does not make further comment on this, perhaps indicating that the distinction between one person care for ceiling hoists and two person care for a mobile hoist is too obvious to need clarification.

3.7 When are two or more care workers advised to be used[6]

There are, however, a number of occasions when the use of two or more workers is explicitly recommended for client handling tasks. The Queensland Government's

[5] http://www.careuk.com/content/outcome_based_dual
[6] See also: SA Government, 2009; Lampert, 2011.

Workplace Health and Safety website,[7] for example, suggests a number of ways to control the hazards involved in handling people: using mechanical aids, assistive devices and repositioning aids; moving the person out of a cramped environment; conducting assessments; and planning beforehand how to go about handling someone. But the advice also includes providing a sufficient number of workers if there are difficulties.

ADHC's HNP Guidelines for HACC services (DADHC, 2005) also states that two person transfers may be necessary for the well being of the carer or care recipient

The South Australian government's *Occupational Health, Safety and Welfare Guidelines for Community Workers* (SA Government, 2009) advises using two care workers:

- when using hoists or slide sheets or carrying heavy supplies, with one worker nominated as the leader;
- when access to support or help is limited;
- when working at night in a high-risk situation; and
- when the client engages in aggressive or otherwise inappropriate behaviour.

Suggested alternatives to two person care in these guidelines are the use of mobile phones and a nominated time for contacting the office to ensure access to backup if necessary and to monitor safety of the worker.

WorkCover NSW's *Safety Pack* for community services (2004: 82) recommends allocating two workers for the first home visit and for subsequent visits as required, as one example of substituting a lesser risk for a greater one (i.e. two employees rather than a single employee working alone), and scheduling high-risk tasks during business hours with another worker present. However, this is in the context of a known history of aggressive or violent behaviour on the part of the client, not a manual-handling context.

ADHC's *Best Practice Guidelines* for managing manual-handling risks (DADHC, 2006: 18) state that staff must not be expected to remain at risk if there are any delays to implementing risk controls. For that reason, the Guidelines suggest providing additional staff, and using a buddy system for staff training, as interim measures for minimising risks until long-term controls can be implemented.

US researchers investigating safe client handling for rehabilitation professionals (Waters and Rockefeller, 2010) also emphasised the importance of providing adequate assistance for carers when equipment is not available or is being delayed. They pointed out that this can involve additional staff helping with the client-handling task, especially if the task was therapeutic. They also pointed out, however, that relying on multiple care workers was not always feasible because of space restrictions. As well, it was often an inadequate solution to the risk to carers, and the aim is to use equipment instead whenever possible.

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[7] http://www.deir.qld.gov.au/workplace/subjects/manualhandling/people/index.htm

The Queensland Government's *Code of Practice* for the handling of people (Queensland Government, 2001) also refers to using more than one worker in the short term while waiting for a better solution. For example, when a device is not immediately available, team-handling with training might be used until the mechanical device is acquired. As well, the Code referred to two or more workers in other contexts:

- during a sling lift from the floor with one worker operating the sling while the other worker communicates with and reassures the person and assists where necessary

- in the case of individual characteristics of the worker in a team handling situation – younger, older, pregnant, with an existing back injury and

- raising a person from the floor in an aged care residential facility.

The US Occupational Safety and Health Administration's *Guidelines for Nursing Homes* (OSHA, 2009) says that the number of carers required depends in part on the size and weight of the person being moved(as well as which equipment is needed). The Guidelines describe a number of occasions when more than one carer is needed:

- when clients cannot help to reposition themselves in a Geri or Cardiac chair (a friction-reducing device is also needed)

- when using a ceiling hoist (although the Guidelines also note that some residents can use this kind of device without assistance)

- in the case of lateral transfers or repositioning – how many carers depends on the characteristics of the person being moved, e.g. weight, ability to cooperate and

- in some circumstances when using gait or transfer belts with handles.

The UK Royal College of Nursing's guide to manual handling assessments (RCN, 2003) included examples of occasions where using two or more workers could be necessary. Providing extra staff might be one way of managing the risk involved in the attendant care of someone in a low (divan) bed or in a double bed (using extra staff was the eighth of nine suggested risk control measures); and the guide's checklist for controlling the risk included the questions: Can the load be team-handled instead of by one person? Can the task be shared/rotated between staff?

In their descriptions of a number of common client-transfer tasks, researchers at the US Patient Safety Center of Inquiry (Menzel et al, 2009) specified whether the task required one or two caregivers. Transfers using both ceiling and floor-based hoists needed only one caregiver unless the client was uncooperative or had no upper body strength. In that case, two were needed, the second to stand behind the destination (wheelchair, commode) to assist in guiding the client into position. Transfers using a lateral transfer board can be done by one caregiver, but up to three could be needed depending on such factors as the client's weight, their ability to assist, and whether they had complicated clinical conditions. The factor requiring

two (or more) carers that was most frequently mentioned was the client's uncooperativeness; other factors were weight (i.e. >200 pounds), the inability to assist, and complicated clinical conditions.

Care of bariatric clients

One type of situation which is most likely to require two or more workers is the care of bariatric clients in institutional settings.[8] Moving clients who are large, (bariatric clients often classified as those more than 30% over Body Mass Index [BMI] with a medical problem) whether by weight or height, poses even higher risks than moving people of average height and weight. The South Australian government's Guidelines for community workers (SA Government, 2009) advises making sure that there enough workers to move bariatric clients. The Disability Safe website[9] emphasises the importance of including clients' sizes as part of the assessment procedure and of ensuring that the equipment available matches the tasks which need to be done. They also recommend consulting the suppliers of equipment specifically for bariatric clients when developing manual handling plans for such clients.

Once again, the focus of most of the literature is on institutional settings (e.g. Weinel, 2008), although much of what is discussed is relevant to the management of bariatric clients in their own homes. Muir and Archer-Heese (2009), for example, point out that even raising a client's limb for a dressing change can be dangerous. The weight of a leg of a 350-pound client, they say, would be 62 pounds, well over the recommended maximum of 35 pounds. In this case, staff should use a mechanical lift device and a limb sling. They recommend a ceiling lift as the best choice, both for bariatric transfers and repositioning someone in bed, and for reducing space requirements. They point out that the key to effective and safe bariatric-client handling is thorough preparation prior to admission (or in the case of attendant care, as part of the assessment process). Following the safe bariatric patient-handling toolkit produced by the US Department of Veterans' Affairs,[10] they list a number of essential components of a safe program, namely:

- operational procedure and policy
- patient assessment tools
- communication tools
- patient handling algorithms and guidelines
- space and environment considerations
- equipment needs

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[8] Bariatrics is the science of providing healthcare for those who have extreme obesity (Muir and Archer-Heese, 2009).

[9] http://www.disabilitysafe.com.au/hazards-risks/manual-handling

[10] http://www.visn8.va.gov/visn8/patientsafetycenter/safePtHandling/toolkitBariatrics.asp

- staff training and education and
- evaluation.

These authors do not discuss the need for two or more care workers in this context, apart from mentioning that using an older floor lift requires two staff to move it safely in transferring a bariatric client from bed to chair, and a third staff member to monitor the client (Muir and Archer-Heese, 2009).

The founder and president of American Bariatric Consultants,[11]Kevin Huffman (Carlson, 2008), is also conscious of the fact that arrangements need to be made to care for bariatric clients in their own homes. He advises occupational therapists to try and ensure that their bariatric clients who are being discharged from hospital have access to the same types of equipment at home that they used in the hospital. Clients should be asked to describe their homes and the equipment they already have, e.g. what their sleeping arrangements are and whether they have a bariatric-rated bed and a bedside commode, the distance from the bedroom to the bathroom, whether the toilet is wall-mounted, whether there are shower chairs, grab bars and hand rails. Huffman emphasises the importance of allowing people to retain their dignity and of providing them with the equipment to allow them to exercise as much independence as possible. Moreover, as a result of lack of movement and moisture build-up, bedsores are a common problem for bariatric clients, particularly in the heels, elbows, and lower back. Specially designed bariatric mattresses with alternating air pressures are necessary to avoid the need to manually move people. Huffman says that Medicare reimbursement (in the US context) should be available for purchasing this kind of mattress before someone develops bedsores, rather than only when the client already has skin breakdown.

3.8 Team lifting to decrease nurse back injuries in institutions

There are a number of studies which have shown that team lifting in an institutional setting can reduce musculoskeletal injuries among care workers (Nelson and Baptiste, 2004. See also: Maier, no date; Barnes, 2007; Campo et al, 2008; Kutash et al, 2009). Team lifting refers to requirements that two or more workers lift a person together whenever a client needs to be moved or transferred. The research for these studies was not carried out in community care settings, but in institutional care settings such as hospitals, long-term care facilities and aged care residential facilities, where workers refers to any staff responsible for lifting clients, including nursing, medical and other support staff.

A review of reports evaluating the use of lifting teams in health care facilities (Haiduven, 2003) found general approval for the lifting team as one approach to decreasing back injuries among nurses. The reports reviewed identified a number of benefits of the lifting teams, namely: reductions in absenteeism, workers' compensation claims and injuries to lifting personnel; the satisfaction of clients, staff, and team members; and the fact that the lifting team was able to do the majority of high-risk lifts and transfers during the shifts when they were operating. There were also a number of disadvantages. Lifting teams might not be appropriate

[11] http://www.americanbariatricconsultants.com/

for all settings; they require infrastructure and equipment to support their use; and staffing needs careful consideration. However, most of these issues related to an institutional setting rather than community care.

A systematic review of research reports on intervention strategies to reduce the risk factors associated with client-handling activities (Hignett, 2003) found some evidence in five of the studies reviewed that the lifting team approach can be effective. However, the research on team lifting was only available from the US at the time of the review, and the authors commented that it would be interesting to see if the results could be replicated in other countries. Moreover, the single factor of team lifting was not as successful in reducing the risk factors related to client handling as multi-factor interventions based on a risk-assessment programs. And again, the studies were confined to institutional care.

Authors from the Association of Safe Patient Handling Professionals in the US (Nelson and Baptiste, 2004) discussed a number of reports of clinical trials of client lift teams which had found them to be effective in decreasing absenteeism and compensable injury costs, again in the context of institutional care. The authors defined a lifting team as 'two physically fit people, competent in lifting techniques, who work together to perform high-risk client transfers' (citing Meittunen et al, 1999). The team is made up of nursing staff with no prior history of a musculoskeletal injury, who are well-trained in the use of mechanical lifting devices. But although the studies found that the risk factors for back injury were reduced or eliminated by introducing team lifting, they also found that there were problems. One of these was shortage of staff; another was that some high-risk tasks such as repositioning a client in bed, or toileting or dressing a client were not addressed by lift-team intervention. However, the authors of the review commented that, with adequate infrastructure – proper equipment, programmatic support, adequate training, clear policy and procedures, good communication, and a culture of safety – lift teams had been shown to be a successful evidence-based practice for safe client handling.

A more recent study in the US (Kutash, 2009; Kutash et al, 2009) investigated the relationship between the use of the lift team, and the recruitment and retention of experienced registered nurses (aged over 45), as well as the impact of the lift team on injury rates among nurses due to client handling and on lost or modified workdays, and the cost-benefit ratio using the team. One of the reasons for undertaking the research was concern about the increasing age and approaching retirement of the nursing workforce, and what would be the best strategies for retaining experienced nurses as long as possible. The study found that using the lifting team did significantly reduce modified and lost workdays, as well as hospital costs due to client-handling-related injuries. The study also found that the younger nurses were as positive about lift teams as the experienced nurses, and hence that the teams were important in the recruitment and retention of nurses regardless of age. The authors commented that, although the initial costs are high, they are recovered within a reasonable length of time and that the financial benefit to the institution increased steadily over time.

A US study surveyed 1163 nurses about the availability of preventive devices and training in relation to neck, shoulder, and back musculoskeletal disorders (Trinkoff et al, 2003). The nurses were asked what was their preferred technique for

transferring a client from a bed to a chair, given a choice between solo lift, two person lift, lifting team, mechanical lift and other. Musculoskeletal problems were identified as pain, numbness, tingling, aching, stiffness, or burning in the neck, shoulder and back. The study found that all the preventive devices – lifting teams, mechanical lifting devices, adjustable beds, and sliding/transfer boards – were significantly related to musculoskeletal disorders of the back, although lower levels of disorders were associated with lifting teams and lifting devices than with the other means of client transfer. Transfer boards/sliding sheets and adjustable beds were associated with significantly higher levels of back disorders. In the case of neck disorders, only the lifting devices made any significant difference in lowering the risk of injury. The transfer method most popular with the hospital nurses was the two person lift, although it was less popular with nurses in nursing homes and home health agencies, who preferred mechanical lifts. Those who had been trained in the use of lifting devices were twice as likely as the rest of the sample to prefer using these devices, an outcome which the authors referred to as 'encouraging'.

Other US studies have also found that the use of lift teams leads to cost savings due to reductions in lost work time and in claims for compensation. One study (Charney et al, 1991) found, for example, that injury rates dropped from 39 per 1000 to 2.4 per 1000 in one year at a US hospital after the introduction of lift teams, thus saving $65,000 on the day shift; another study (Charney, 1997) found that accidents resulting in lost time dropped from 16 to one in another large hospital, thus saving $144,000 in the year following the introduction of teams.

In contrast to all the studies showing that the introduction of team lifting reduced injuries and musculoskeletal disorders among nursing staff, another US study (Springer et al, 2009) failed to find same reduction in employee injuries described by previous authors. The authors of this study explained the discrepancy in terms of the length of time over which the comparisons were made. They compared the level of injuries incurred one year after the lifting team was introduced, with the level four years before. They said that a comparison of the results of their study the year after the introduction with the year immediately before, would have shown a decline in injuries similar to the other studies. It was after more in-depth analysis spanning four years that the researchers discovered no significant difference in employee injuries related to the lift team.

Other research has also found that having two (or more) workers rather than one is no guarantee of avoiding injury. WorkCover NSW (2004), for example, has found that people are more likely to be injured in team-lifting situations than when they are working alone, despite the fact that team lifting has historically been considered an appropriate risk control measure. WorkCover NSW therefore recommends that, if team lifting or handling is required, it not be the only risk-control strategy employed. Similarly, the suggested method of risk assessment in the Queensland government's *Code of Practice* (2001: 66) states: 'Generally, the greater the number of workers performing an action, the greater the number of workers exposed to a risk and the more likely it is that an incident will occur'.

WorkSafe Victoria's guide for managers and staff to help them reduce the risks associated with client transfers (2009: 7) assesses the use of two carers to turn or reposition a person in bed as a high-risk, even dangerous, practice only marginally less risky than using one carer. (The latter is rated 'G', the highest level of risk,

while the two carer procedure is rated ‘F’). The other manual lifting tasks assessed in the guide as high risk are not identified by the number of people performing them. It might be assumed, then, that they are likely to cause injury, and hence are not recommended, however many carers perform them. In other words, the criterion of risk reduction in any task is not the number of people who perform it, but the availability of mechanical aids (slide sheets in the case of turning or re-positioning in bed). The guide did refer to a number of procedures requiring more than one person to perform:

- moving a client up and down the bed using two slide sheets when the client is unable to assist
- rolling the client if they are unable to assist
- turning the client
- moving the client from bed to chair, from chair to bed, from chair to chair or toilet, even with an overhead hoist and the client able to assist
- transferring the client’s legs onto the bed and
- moving the client off the floor, even with an electric sling hoist.

But even with two people, lifting the client at all, whether with a draw or incontinence sheet, with lifting slats or simply using their shoulders, is assessed as high risk and likely to cause injury.

A US study (Marras et al, 1999) evaluated the risk of low-back disorder among carers in a long-term care facility, as a result of performing several client transfers and the repositioning of the client in bed using both one person and two people. The transfers were between bed and wheelchair (fixed and removable arms), and between commode chair and hospital chair, and the client was a 50 kg co-operative female who could not bear her own weight but who had the use of her upper body. Overall, these client-handling tasks were found to be extremely hazardous, whether they were performed with one person or two. The greatest risk was associated with the one person transfers whatever the task, and the lowest risk was associated with the two person draw sheet repositioning technique. But the latter still had fairly high spinal loads and risk for low-back disorder. Hence, even the safest of the tasks evaluated had significant risk, even though the client was relatively light and co-operative. The authors concluded that, in order to have an impact on preventing low-back disorder, it was necessary to provide mechanical lift assist devices.

There is no indication in the recommendations for avoiding musculoskeletal injuries among nursing and occupational therapy staff that these occur only when staff members are working alone. For example, the American Physical Therapy Association Task Force recommendations on client handling (APTA, 2006) do not make a distinction between handling activities undertaken by a single nurse and those undertaken by teams. Those recommendations are:

- Implement the OSHA *Ergonomics for the Prevention of Musculoskeletal Disorders: Guidelines for Nursing Homes*

- Build and support a culture of safety in rehabilitation settings that protects staff as well as clients
- Improve communication channels between nurses and physical therapists to facilitate safe patient handling and movement tasks
- Develop policies and procedures for the therapeutic use of patient handling equipment
- Develop competency-based assessments that demonstrate proficiency for use of all patient handling equipment used on the respective patient care unit, including return demonstration and
- Encourage research that supports the improvement of patient and staff safety while maximizing patient rehabilitation potential(APTA, 2006).

The Association voiced concern about the increasing number and severity of musculoskeletal injuries associated with client-handling tasks over the past few decades, especially among nursing personnel. But there is no suggestion among the recommendations that increasing the number of care workers will address the problem of staff injuries (APTA, 2006).

Examples in the literature of accidents and injuries resulting from client handling do not locate the cause in the fact that only one person was doing the transfer. Two examples, both taken from the ADHC *ACP Direct Funding Model Guidelines* (ADHC, 2011: 24-5), illustrate this point. In the first example, two attendant carers complained of sore backs after completing transfers between bed and wheelchair, and wheelchair and commode. In this case the carers were working together in the same location and yet they still strained their backs. The problem was the way the space was arranged – the bed was the wrong height and access to it was restricted by equipment. The solution involved buying a new bed, removing the equipment, and instituting a revised manual-handling procedure.

In the second example, a client fell from the hoist. Only one staff member was present when the accident occurred but that was not the problem. Rather, the accident happened, partly because the staff member had no previous experience in using a hoist and no training in manual handling or use of the hoist, but largely because of the condition of the equipment – the sling was old and frayed around the sling loops and one of the straps came undone. The presence of two (or more) staff members would not have prevented the accident as long as the condition of the sling was not rectified.

3.9 No lifting: alternatives to manual handling

The current emphasis in the human services sector is on eliminating client lifting to the fullest extent possible, whether performed by one person or by more than one. The usual term for this is ‘No Lifting’, although there is some debate about whether or not this is the most appropriate terminology. ADHC, for example, (DADHC, 2006) noted that, while the ‘No Lifting’ terminology was useful when safe manual-handling systems were being introduced, it did tend to be misinterpreted. Alternative terms are: minimal lifting, safe lifting, safer lifting, safe client handling.

However, although manual handling involves more than lifting – it involves pushing, pulling, lowering, holding, carrying and restraining as well as lifting (WorkCover NSW, 2006) –'No Lifting' still appears to be the preferred terminology.

The Victorian Department of Health (2004), for example, uses the term 'No Lifting' and describes it as the elimination of the manual lifting of clients in all but exceptional or life-threatening situations. Such an approach involves encouraging clients to assist in their own transfers, making assessments of client-handling risk, using mechanical lifting aids and other equipment for moving and transferring clients, modifying the work environment to accommodate safe client-handling equipment, and training all staff in the correct use of equipment and techniques for moving and transferring clients.

One version of a 'No Lifting' procedure is the O'Shea No Lift System. It was designed by an Australian nurse, Louise O'Shea, in 1996, specifically for use in institutions, i.e. hospitals, aged care settings. It has two components: documentation supporting the system; and training and consultancy services to implement and maintain the system within the facility. It aims to reduce injuries to clients as well as staff, and to maximise client independence. It introduces safe client-transfer procedures such as:

- working close to the client's body
- minimising forward and lateral movements and twisting
- push/pull rather than lifting
- using the bed mechanics
- using the client's own body movement and
- using weight-transfer techniques.

According to a US website,[12] this approach was unique at the time because it took into account the often conflicting interests of the many constituencies common in most health care environments. The website also said that Australia was one of the countries at the forefront of attempts to introduce client-handling standards, and that 90 per cent of the Victorian state government hospitals used the O'Shea System.

The Victorian Nurses Back Injury Prevention Project (VNBIPP) is another program based on 'No Lifting' principles. It was established in 1998 to address the high prevalence of back injuries among nurses. It funded Victorian public health care facilities to implement back injury prevention programs based on 'No Lifting' principles. Eliminating and minimising manual handling was achieved by providing aids and equipment, by educating nurses to be aware that the health and safety of staff were as important as the health and safety of clients, and by encouraging

[12] http://www.nolift.com/nolift.htm

nurses to be proactive in identifying hazards and reducing risks of injury in the workplace (Keating et al, 2002).

The Victorian Department of Health noted[13]that a crucial component of the VNBIPP was the encouragement of cultural change throughout the industry and of ownership of the program by nurses. Its aims were:

- to assist health care facilities to implement back-injury prevention programs based on no lifting principles and policies
- to facilitate long-term cultural change in health care organisations and among staff by encouraging new attitudes as a way of eliminating practices that have traditionally led to a high risk of injury amongst nurses and
- to assist health care organisations to implement procedures for risk identification, assessment and control of client-handling injuries among nurses.

In fact, the VNBIPP did lead to significant changes. Key findings from the second evaluation report (Martin et al, 2004) showed:

- 24 per cent reduction in the rate of standard back-injury claims by nurses in public health service agencies in Victoria
- 41 per cent reduction in working days lost due to standard back-injury claims and
- 23 per cent reduction in the mean working days lost per claim.

As well, the nurses surveyed during the evaluation reported strong support and ownership of the programs that had been introduced, increasing readiness to report injuries earlier, and higher levels of responsibility for their own safety in the workplace.

The traditional approach to safer client-handling, i.e. teaching nurses safe manual-handling techniques, has been found not to reduce the risk of client-handling injuries (Martin et al, 2004). A systematic review of studies reporting intervention strategies to reduce the risk factors associated with client-handling found strong evidence that interventions based on technique-training alone have no effect either on working practices or on injury rates (Hignett, 2003). The author said that the evidence indicated that the most effective interventions involved many factors, including:

- risk assessment
- equipment provision, evaluation, design and maintenance
- education and training
- redesign of the work environment, organisation and practices

[13] http://www.health.vic.gov.au/nursing/promoting/back_injury

- team-building and group problem-solving
- review of policies and procedures
- discussion with clients
- injury-monitoring systems
- hazard registers
- staff physical-fitness training and
- medical examinations.

But it was risk assessment that provided the framework needed for interventions to be embedded in an organisation's structure and culture.

WorkCover NSW (2006) refers to a 'minimal lifting approach' (rather than 'No Lifting').This approach involves:

- providing adequate levels of appropriately skilled staff
- educating and training staff in all aspects of safe handling
- consulting with staff on risk assessment and the development of control strategies, not just on the selection of equipment
- providing appropriate mechanical lifting aids and testing them
- ensuring the equipment is used, through supervision and post-training support
- prohibiting manual lifting (including team lifting) except in emergencies
- assessing clients to determine their specific manual handling needs and standardising the method of handling
- encouraging client mobility and independence
- reviewing work systems and practices to identify risks, eliminate unnecessary manual handling and improve work practices and
- designing facilities to support safe systems of work and safe handling of clients and equipment.

Hoists

Most of the literature on the use of hoists for moving and transferring people deals with ceiling hoists rather than floor hoists, and on institutional settings rather than community care. Nonetheless, as the Victorian Hospitals Industrial Association (VHIA, 2003) has noted, overhead tracking systems are suitable for use in

community settings and private homes, as well as in acute hospitals and aged care facilities.

It would appear that there has been increased interest in ceiling hoists as part of the safe handling approach to decreasing the physical exertion of carers (Jung and Bridge, 2009). WorkSafe Victoria (2009) prefers ceiling hoists ('overhead track systems') for moving clients, noting that ceiling hoists require staff to exert significantly less force than mobile, floor-based hoists. The overhead hoists are more efficient, take less time to transfer a person, and they are more acceptable to clients. In the UK, Hall (2002) pointed out that an overhead hoist usually just required the worker to operate a handset and guide the carry-bar into place, rather than having to support the weight of either the client or the carry-bar. (Only one worker was mentioned in this context). WorkSafe Victoria (2009) recommended that ceiling hoists be installed in all new and renovated health and aged care facilities where people needed to be transferred, but private homes were not mentioned.

Writing in the context of an evaluation of the use of ceiling hoists in a newly built spinal cord injury unit at a veterans' hospital in Florida, Weinel (2008) noted that ceiling-mounted lifts were a viable alternative to floor-based lifts. The lifts use tracks mounted on overhead beams sturdy enough to support someone's weight. They have battery-powered lifting motors which raise and lower the clients and move them along the tracks, which can be either single or H-shaped so as the cover a wider area. Some of the motor units are portable so that they can be relocated from one track to another in another room. The client is suspended from the motor unit in a sling and there is a variety of sling designs and fabrics available. The advantage of a ceiling lift where frequent lifts and transfers are necessary is that it is always accessible. The nursing staff in this facility preferred a two-function (up-down) control rather than the multi-function powered tracking. They felt that the powered tracking motor was too slow and they favoured a hands-on approach, especially as they could move the person in the sling along the track with very little effort. Clients reported feeling secure during transfer and being less jostled than with the floor lift.

The author (Weinel, 2008) said that studies comparing floor lifts with ceiling lifts had found that there were fewer musculoskeletal injuries among staff with use of the ceiling lift. Other studies had found that ceiling lifts required half the effort of floor lifts, and that lifting and transferring with a ceiling lift produced less trunk and shoulder muscle activity than with a floor lift.

The Victorian Hospitals Industrial Association (VHIA, 2003) listed the key components of what they called 'overhead tracking' for an institutional setting as: a ceiling track; an electric motor; a suspended sling or frame; and handset control. The authors said that there were a number of different forms of tracking, namely:

- straight or curved, and in various lengths
- with turntable junctions for changes in direction
- a traverse or H-shaped system which allows for movements both up/down and across

- fixed to, suspended from or recessed into the ceiling and
- stand alone/semi-permanent tracking (portable).

The authors (VHIA, 2003) also said that the systems are available in various weight capacities up to 360kg.

The advantages of overhead tracking were:

- reduced manual handling risk for carers:
    - requires minimal physical exertion
    - less physically demanding than manoeuvring mobile hoists
    - avoids the difficulties of textured or uneven floor surfaces
    - more accessible than mobile hoists.
- increased productivity:
    - saves time in finding and going to get the equipment
    - generally only one carer is required
- reduced transfer space:
    - less bulky and more manoeuvrable than mobile hoists, especially in a small space
    - more room for other equipment or furniture
    - reduced need for storage space
- compatibility with other equipment:
    - eliminates problems with mobile hoists not fitting under beds or not lifting people up high enough and
- improved quality of care:
    - clients feel more confident and comfortable (VHIA, 2003).

There were also a number of disadvantages to overhead tracking, which the VHIA listed as:

- restricted room layout:
    - the room layout needs to be set around the tracking and the furniture cannot be moved once the tracking is in place
- mobile hoist still required as backup:

    - e.g. if someone has a fall in an area not served by the overhead tracking

- structural ceiling supports required:

    - installation of tracking into an existing facility or housing may involve additional costs for structural support (VHIA, 2003).

A review of 23 articles reporting studies (mostly from Canada, the US and the UK) on the effectiveness of ceiling hoists (Jung and Bridge, 2009), investigated what those studies found out about their benefits compared with other handling methods. The focus of most of the research was the use of ceiling hoists in formal health care settings such as hospitals, rather than in private homes in community settings, although the research showed that they were not widely used in healthcare facilities either. The review found that, for a number of reasons some staff are reluctant to use mechanical lifting systems, e.g. a long tradition of manual handling practice, colleagues who did not operate them properly, uncertainty about how to use the systems, lack of confidence in using them. Even so, there was strong evidence that ceiling hoists significantly decreased musculoskeletal injuries and physical stress for staff within those institutional settings. When compared with mobile hoists and manual handling, ceiling hoists were the preferred option for both the staff and the clients, although the majority of the studies focused on the reduction of the injuries and physical stress for the carers rather the care-recipients.

The review (Jung and Bridge, 2009) found that, on the whole, the studies did not take into account a range of different models of ceiling hoists, e.g. completely fixed or with a portable lifting unit, single or multiple track, straight or multi-directional tracks. Neither did they take into account a range of auxiliary devices, e.g. different types of slings. The authors recommended this as an area for future research, given that different types of hoists would vary in their effects on the handling of people with disabilities.

The review (Jung and Bridge, 2009) also found that there were disadvantages to using ceiling hoists. Apart from staff reluctance to use them, they had limitations in the areas they could cover, and they still required some manual handling in preparing for transfers. They did not eliminate the need to handle the person in order for the sling to be inserted and removed. Hence, mechanical lifts cannot eliminate all the risks involved in transferring people.

A document from the US Department of Veterans Affairs giving directions for the design, installation and storage of client-handling equipment (Matz, no date) discusses both ceiling-mounted sling lifts and floor-based lifts (as well as sit-to-stand lifts for people who can manoeuvre themselves with minimal assistance).In the discussion of ceiling-mounted sling lifts one of two pictures illustrating the use of the lifts shows one person operating it, while the other shows two people. But there is no discussion of whether two people might be preferred over a single person in the use of the hoists, and if so, why.

The UK Health and Safety Executive information sheet for attendant care providers (UK HSE, 2011) also discusses both ceiling-mounted and floor hoists. The authors note that the use of hoists has become an integral part of delivering services because it can reduce musculoskeletal risks, although at the same time they also

point out that significant numbers of incidents are reported each year where people have been injured while being moved with hoisting equipment. It lists a number of things that can go wrong, namely:

- the wrong size sling – discomfort if it is too small and the risk of the person slipping out if it is too large
- the wrong type of hoist or sling for the particular person or the specific task – inadequate support and increased risk of falling
- incompatibility of the hoist and sling – insecure attachment between the two
- failure of equipment due to poor maintenance, lack of inspection, inappropriate laundering, or inadequate repair or modification
- leaving someone unattended in a hoist
- hoist overturning on a difficult surface and
- not using the safety harness/attachment (UK HSE, 2011).

The information sheet provides a checklist for safe handling practice of 24 items – e.g. 'Review the person's condition prior to each transfer to ensure continued suitability' – together with additional guidance separately for mobile hoists, ceiling track/overhead systems, standing hoists, slings and bath hoists. It also provides a checklist for equipment safety checks prior to each use.

As already mentioned, there is little literature on the use of ceiling hoists in private homes. The authors of the above-mentioned review (Jung and Bridge, 2009) said that ceiling hoists were given low priority in community care strategies, even though it was an important home modification issue. They surmised that ceiling hoists were so rarely considered for people being cared for at home, because the systems were initially introduced in response to the high incidence of back injuries among nurses. But private homes pose different considerations to safe and effective handling from formal care settings, e.g. more emphasis being put on aesthetics than safety. They said that the home care setting would also benefit from the 'no-lifting' policy, especially given that the loss of an informal carer through injury would be critical. They recommended implementing educational initiatives about the use of ceiling hoists in the private care setting, in conjunction with regulatory measures. They also called for financial assistance for home users, given the fact that the initial expense of ceiling hoists, which can require major permanent structural alterations, together with the on-going maintenance costs, can be major barriers to buying and installing them. The authors also recommended setting up assessment procedures for devising appropriate administrative solutions to common problems. Standardised assessment protocols assist in the process of assessing the physical needs and health status of clients in order to help them decide whether they need assistive technology, and if they do, which technology provides the best potential, taking their needs and capabilities into account.

There was one project which included the issue of installing ceiling hoists in private homes, although the report of the findings (Saville-Smith et al, 2007) did not have a

great deal to say about them. The installation of a ceiling hoist was mentioned only on two occasions. It was one among a wide range of house modifications mentioned by focus group participants; and one participant reported that the owners of the house he occupied, the public housing authority Housing New Zealand, had refused to allow a ceiling hoist to be installed, even though he had been assessed as needing it because the house was not suitable for a wheelchair. The research was commissioned by the Centre for Housing Research, Aotearoa New Zealand and carried out by the Auckland Disability Resource Centre. The report (Saville-Smith et al, 2007) mentioned ceiling hoists in the context of a wider concern with ways of optimising housing access for people with moderate to severe physical and sensory disabilities affecting their mobility. The research focused on: the current housing experiences of people with physical disabilities; the capacity of the housing market to respond to the demand for 'lifetime homes'; and the opportunities to establish a housing stock that was 'future-proofed' for those with moderate to severe physical disabilities. The chief finding of the research was that the housing needs of people with disabilities were not being met by New Zealand's current housing stock.

As already noted, the issue of the need for two (or more) care workers in an attendant care setting is not discussed at any length in the literature. However, there are a few fleeting mentions. The VHIA (2003) said that using a ceiling hoist does generally mean that only one carer is required to undertake a transfer, in comparison with a mobile hoist which usually requires two carers. The Queensland government's 2001 *Code of Practice* for manual tasks involving the handling of people (Queensland Government, 2001: 79, Table 4) specifically states that certain actions – repositioning of a resident who has fallen while they are still on the floor, lifting a resident from the floor, positioning the resident in a sitting position – still require two workers, even though a hoist is being used. However, it would seem that the hoist is a mobile one (not a ceiling hoist) – part of the procedure described includes the accessibility and storage of the hoist. Similarly, the US OSHA's 2009 *Guidelines* (OSHA, 2009: 19) state that more than one caregiver may be needed in a residential setting when using a portable lift device to lift or transfer someone who is totally dependent.

The authors of the above-mentioned review (Jung and Bridge, 2009) concluded that there was evidence to suggest that ceiling hoists could safely lift and transfer people with the least additional help. They cited one study (Holliday et al, 1994) which showed that a transfer could be performed independently by one nurse using a ceiling hoist, although assistance was sometimes needed for the lift, whereas using a mobile hoist for a transfer averaged one and a half staff. Even so, it was clear that two staff were not always needed to transfer someone using a mobile hoist either. Other studies (Hall, 2002; Steed and Tracey, 2001) have found that ceiling hoists can allow people with reasonable levels of upper body mobility to fit the sling themselves and prepare themselves for transfer, and even to operate the device themselves with the aid of portable hand controls. This allows them increased participation in daily activities, as well as decreased dependency on care-givers, both of which can bring improved self-esteem and quality of life.

3.10 Assessment

The importance of assessment is stressed throughout the literature. As the authors of the first evaluation of the VNBIPP (Keating et al, 2002) said, assessment of client-handling requirements is a prerequisite for identifying and reducing the risks associated with client handling.

There are a number of sources which specify what should be included in any process of assessment for client-handling risks. The report of the second VNBIPP evaluation (Martin et al, 2004) stressed the importance of identifying the needs and abilities of clients when assessing requirements for lifting and repositioning tasks.

WorkCover NSW (2006) points out that risk assessments in the health industry are more complex than in other workplaces. In most work environments the only assessment needed relates to inanimate objects, which do not change their size, shape or weight from one occasion to another. However, people are not rigid or stable, they are not always the same shape every time they are handled, and consideration must also be given to attributes such as physical ability, mental status and cognition, medical condition and communication issues. WorkCover NSW (2006) lists four main areas of risk assessment required for handling people:

- the manual-handling task
- the patient-handling risk
- the workplace including the home and
- the equipment.

People also need to be moved in many different ways:

- moving up and down and repositioning in bed
- moving in and out of bed or trolley
- getting into and out of a chair
- moving to and from toilet or commode chair and
- walking.

The risk involved in each of these tasks needs to be assessed, and the assessment repeated at regular intervals, depending on changes in the person's condition. The assessment should be undertaken by the people who are doing the work or at least in consultation with them.

The South Australian government's guidelines (SA government, 2009) listed the following factors to be considered when identifying manual task hazards for community workers:

- actions, postures and movements e.g. bending, twisting, over-stretching

- workplace conditions, e.g. cramped work space, low work surface, uneven or slippery floor surfaces, poor lighting, extremes of hot or cold
- weights and forces (worker should not lift more than 16-20kg)
- characteristics of the load, e.g. unstable or unpredictable, difficult to slide, push, pull or turn
- location of load and distances moved, e.g. storage above shoulder or below knee or load carried a long distance
- frequent and prolonged movements e.g. repetitive tasks, prolonged exertion
- job organisation, e.g. heavy workload, too many clients in one day, lack of staff, unrealistic deadlines, bottlenecks of work and
- individual factors, e.g. worker skills and training, worker hampered by illness, disability or restrictive clothing.

The US OSHA (2009) lists for inclusion in the client assessment:

- the level of assistance required
- the person's size and weight
- the person's ability and willingness to understand and cooperate and
- any medical conditions that may influence the choice of methods for lifting or repositioning.

In the UK, UNISON (no date) advises employers to consider the following in assessing manual-handling risks to home care workers:

- floor surfaces, e.g. uneven, slippery, include steps
- storage arrangements
- the size and layout of the client's home
- the type and size of equipment, and the materials and substances used
- the suitability of overalls, uniforms and other work clothing supplied
- the type of training provided and
- factors specific to the individual worker, e.g. pregnancy, disability, illness.

The *Manual Handling Assessments* guide for hospitals and the community produced by Royal College of Nursing in the UK (RCN, 2003) identified three levels of risk assessment, largely for hospitals but with some relevance to care in the community. The first of these, the client-based level, was the main type of assessment for care in the community. The guide said it should include an

evaluation of the environment and of the handling aids required, as well as a client care-plan containing clear information on the client's movement abilities and needs, instructions on handling techniques and aids, and the number of nurses to be used for various moves.

The second level of assessment listed by the guide was an assessment of the hospital department or ward. This does not translate directly into attendant care because every client's home is different, unlike the standardised layouts of hospital wards. Nonetheless, there is still a range of information that can be gathered at this level, from space in the bathroom and the availability of handling aids to the training of staff. The guide includes an example of a form designed to collect information for such an assessment.

The third level of assessment, the top level, referred to senior management considering the requirements of the organisation as a whole, e.g. decisions on budgets, training, uniforms. For hospitals, much of the necessary information is collected as a matter of course, but for care in the community, a survey might need to be done to evaluate general needs.

The guide (RCN, 2003) noted that attendant care providers could minimise the amount of local assessment required for the second level of assessment by producing generic assessments wherever possible. These could also serve as guides for attendant care workers to use in assessing particular manoeuvres in people's homes. Possible areas for generic assessments are:

- transfers from and to bed, chair, commode, toilet
- working with clients who have a history of falls
- bathing
- the condition of floors (hoists on carpets, slippery bathroom floors)
- difficulties in using hoists, e.g. carpets, restricted space
- transfers into and out of car
- babies in high-sided cots and
- handling supplies (packages/boxes) at health centres.

In the UK, the Department of Health's *National Minimum Standards* for domiciliary care (i.e. attendant care) (UK DoH, 2003) states that a detailed assessment of the risks associated with the delivery of the service must be carried out by the service provider for each new home. The registered person[14] ensures that the assessment is undertaken, by a trained and qualified person, before the attendant care worker

[14] 'All agencies providing personal domiciliary care services, irrespective of size will be required to have a person as registered as the "Fit Person" who has overall responsibility for the service. This person may be the owner or the most senior manager of the service' (UK DoH, 2003: 5).

commences work, and that it is updated annually or more frequently if necessary. A plan for managing the risks is drawn up in consultation with the service user and their family or representatives. It is included in the overall service-user plan and kept in the home of the service user for staff to refer to. Assessment of the risks associated with manual handling must be undertaken separately. The only mention of a need for two person care occurs in this context of assessment: 'Two people fully trained in current safe handling techniques and the equipment to be used are always involved in the provision of care when the need is identified from the manual handling risk assessment'(UK DoH, 2003: 24, Standard 12.8).

There are many manual-handling risk assessment tools in the literature.[15] But none of the examples of risk-assessment procedures examined in the course of this review identified working singly as a risk factor for staff injuries in attendant care. Examples of suggested risk-control strategies include: home modifications; the use of equipment; documentation of manual-handling procedures; and the training of staff in the use of such procedures (WorkCover NSW, 2006).

Eliminating or controlling risk is crucial to these assessments, but decisions about how this should be done are made on the basis of the circumstances of each individual case. There is no suggestion that employing two (or more) workers will necessarily reduce staff injuries. In fact, multiplying the number of people involved in any procedure also multiplies the risk (Queensland government, 2001). Decisions need to be made about how many people are to be used for certain tasks, but that cannot be decided for every case beforehand. As ADHC (DADHC, 2006) has pointed out, manual-handling risk assessments must be conducted on an individual basis because the characteristics of each client and their environment are unique.

Nonetheless, despite the uniqueness of each individual case, there are standardised instruments available and these can be adapted for differing circumstances. For example, the WorkSafe Victoria (2009) publication contains a number of such tools: the Patient Risk Assessment worksheet; the Patient Transfer guide; forms for recording handling and moving procedures (including the number of people required); and detailed task descriptions and class risk assessments for each of the tasks assessed in the Patient Transfer guide. Several protocols for risk assessments have been developed by the US Department of Health and Human Services, and part of the second evaluation of the VNBIPP involved the development of a standardised instrument for assessing competency in No Lifting practices, as a reference point for the industry as a whole. As the authors of the evaluation report pointed out, standardised procedures are necessary to ensure the uniformity of care practices (Martin et al, 2004).

3.11 Best practices for client handling

There is now general agreement that interventions based on training in physical lifting and moving techniques have little impact on working practices or injury rates,

[15] See: WorkCover NSW, 2006; WorkSafeBC, 2006a; OSHA, 2009; O'Shea and Hennessey, 2009; SA government, 2009; and the list of resources across Australian states and territories in DADHC, 2006: 28.

if the training is not reinforced with other strategies.[16] As researchers at the US Patient Safety Center of Inquiry (Nelson and Baptiste, 2004) found, strategies to prevent or minimise injuries associated with patient handling have often been based on tradition and personal experience rather than on evidence. They found that approaches such as classes in body mechanics, training in safe-lifting techniques, and using back belts when moving people, were ineffective in reducing injuries, and yet they were the most common patient-handling approaches used in the US at the time.

The Patient Care Ergonomics Resource Guide developed at the Patient Safety Center of Inquiry (Fragala et al, 2001) gave a number of reasons why training in physical techniques alone is not effective:

- the research it is based on is not generalisable to nursing practice
- it is difficult for nurses to convert what is learned in a classroom into patient care
- there is no agreement among experts on what constitutes proper body mechanics and
- manual patient handling tasks are intrinsically unsafe because they are beyond the capabilities of most people.

Thus, a growing body of evidence shows that what used to be the most commonly used strategies are ineffective. What is needed are newer interventions that have been shown to be effective in reducing musculoskeletal pain and injuries in care providers. To this end, the US Department of Veterans Affairs Patient Safety Center of Inquiry in Tampa, Florida[17] (Director Audrey L. Nelson) has been working on the problem for a number of years. Researchers at the Center evaluate patient-safety research findings and translate them into standard practices. This involves designing and testing clinical tools (e.g. algorithms, protocols, policy templates, resource guides, patient and staff education materials), which are pilot tested and then exported to the US National Center for Patient Safety for implementation nationwide. Researchers at this Center have disseminated the results of this research widely.[18]

These researchers have identified a body of research knowledge that provides strong evidence that a comprehensive program can significantly reduce the risk of musculoskeletal injures in healthcare settings. There were three elements common to all these successful programs, namely, mechanical equipment to assist carers with people-lifting tasks, training in the use of the equipment, and a written policy around safe client handling (Nelson et al, 2007).

Nelson and Baptiste (2004) have organised potential solutions to the problem of carer injuries into three ergonomic types – engineering-based, administrative and behavioural. They refer to the potential solutions:

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[16] Hignett, 2003; Victorian DoH, 2004; WorkCover NSW, 2004; Jung and Bridge, 2009.
[17] http://www.visn8.va.gov/patientsafetycenter/
[18] e.g. Fragala et al, 2001; Nelson et al, 2003; Nelson and Baptiste, 2004; Nelson, ed., 2006; Nelson, 2008; Nelson et al, 2007, 2008, 2009; Menzel et al, 2009; Nelson et al, eds, 2009.

- client-handling equipment and devices
- policy initiatives, the three primary examples being ‘no lift’ policies, ergonomic assessments of client care areas, and the use of client lift teams
- training of staff in the safe use of patient handling equipment, to the use of peer leaders, and to clinical tools such as patient-assessment protocols and algorithms.

An algorithm is a sequence of logical steps to be taken to achieve a given task, consisting of a finite list of precisely defined successive ‘if ... then’ decision points displayed in a flow chart. For example, in the case of the task of transferring someone to or from bed, chair, toilet or car, the algorithm would start with the question, ‘Can client assist?’ If the answer is ‘yes’, no carer assistance is required apart from standing by for safety as needed. If the answer is ‘no’, either wholly or in part, the next decision point relates to the client’s weight. If the client weighs more than 200 pounds the specified action is to use a friction reducing device plus three carers; if less, the action is only to use a friction reducing device. (For more detail about algorithms, see: Fragala et al, 2001; Nelson et al, 2003; Nelson, ed., 2006; and for a list of examples see Appendix 1).

A trial of a ‘best practices’ musculoskeletal injury-prevention program in six nursing homes over six years (Collins et al, 2004) found that the program had had a number of positive results. The program involved the introduction of mechanical lifts and repositioning aids, a zero-lift policy, and employee training in lift usage. After the program, the rate, severity and cost of injuries associated with lifting and moving residents, lost and restricted work days, and repeated staff injuries, were all significantly reduced in all the nursing homes, for staff in all age groups and lengths and types of tenure. Assaults and violent acts by residents towards staff also declined. The reduction in workers’ compensation claims recovered the initial capital outlay in slightly under three years.

A systematic review of studies investigating intervention strategies to reduce the risks associated with patient handling activities (Hignett, 2003) identified the seven most commonly used strategies:

- equipment provision
- education and training in, for example, risk assessment, use of equipment and client assessment
- the introduction of risk assessment
- the introduction of safe-handling policies and procedures
- the introduction of a client assessment system
- redesigning of the work environment and
- changes in work organisation and practices.

The author suggested that these could form the basis of a generic intervention program with additional local priorities identified through a risk assessment.

3.12 Equipment and technology

In most instances the potential for alternatives to the use of two care workers is equipment or a piece of technology. The use of equipment and technology to support the work of attendant care workers has recently been explored in work undertaken by ADHC: *The Role of Assistive Technology in Supporting People with Disabilities and Complex Care Needs: A Literature Review*. The findings of that research, whilst not directed at identifying alternatives to the use of two attendant care workers, identifies equipment that may be useful in some instances, such as powered wheelchairs, computer assistance, home modifications, smart homes, microswitches and telecare.

The use of equipment or technology may not be suitable in all circumstances. A piece of equipment that is designed to assist in turning an individual whilst in bed may provide a solution for some situations but may not be appropriate for others. For example, if the need for a second worker is identified to respond to frequent turning of a client for pressure relief, a turning bed may be an appropriate alternative solution. On the other hand, if the requirement is to turn a patient significantly enough for dressing and pressure care management, not all turning beds may be appropriate for this situation.

The identification of appropriate equipment that may resolve the need for the use of two attendant care workers is very much context specific, no piece of equipment or assistive technology can be seen as the solution--i.e. not every lifting issue requires a ceiling hoist--nor can it be appropriate for all situations. It is important that each situation is individually assessed to ensure that the introduction of equipment resolves the issue and does not introduce secondary problems.

Some situation may require specialised equipment specifically built or modified to meet an individual need such as seating systems for positioning. Such seating systems can be specifically individualised to meet complex positioning assistance for example, people with scoliosis or who experience significant spasticity.

The use of equipment and/or assistive technology as an alternative to using two attendant care workers can, depending on the equipment, incur a considerable capital cost. Along with the capital expense, the ongoing maintenance cost needs to be considered against the ongoing cost of using two care workers.

Alternatively the use of equipment and technology to support the work of attendant care workers may not require significant capital outlays on complex pieces of equipment. For instance, for obtaining stability when rolling and positioning clients, simple wedges of foam and/or handrails on a bed, may address specific situations. Also ensuring ease of mobility for portable floor hoists may be achieved through the use of plastic carpet matting as opposed to more expensive alternatives of ceiling hoists and removal of carpet and replacement with hard flooring.

EnableNSW provides appropriate assistive technology devices and specialised support services to assist eligible residents of NSW with a permanent or long-term

disability to live and participate in their family and community. The program policy is directed at increasing the independence of the client, and, or reducing risk of illness or injury to either the client or attendant care worker.

The EnableNSW Aids and Equipment program is means tested and operates on a consumer copayment system: a contribution of a fixed $100 per year for pension recipients, low income adults and children under 16 years or for those in a higher income band 20% of the cost. EnableNSW set no upper limits on the cost of individual assistive technology equipment but the item must be the most basic that meets the person's need.

Equipment can be available for loan through the EnableNSW equipment loan pool for trial. The program is managed locally through Local Health Networks with services available local area health services. The assessment and trial can also be facilitated through suppliers making available on loan or through rental pieces of equipment prior to purchase. The ongoing maintenance of equipment is generally available through the supplier and required either on a 6 monthly or 12 monthly basis. Some equipment may come with a warranty that covers maintenance costs for an initial period, say 3 or 5 yrs. Others may require service calls which would include a service call charge and any parts or labour. These cost outlays are very dependent upon the particular piece of equipment and the supplier. Equipment that is sourced through EnableNSW Aids and Equipment program maintenance is covered by the scheme.

Cost implications of equipment include the assessment/trial, purchase and ongoing maintenance of capital equipment costs (Table 3.1).

Table 3.1: Cost implications for the trial, purchase and maintenance of equipment

Purchase Cost	Example	Trial	Maintenance
Low cost <$1000	Foam Slide sheets Plastic matting Bed rails	N/A	N/A
Medium cost <$10000	Floor hoists Adjustable beds Tilting shower chairs Home modifications	NSW Enable equipment pool Supplier loan or rental	6 or 12 monthly
High cost >$10000	Ceiling hoist* Turning bed Home modifications	Supplier loan or rental	6 or 12 monthly

*Ceiling hoists are available through EnableNSW although current policy does not cover the cost of installation (PD2011_27)

3.13 Conclusion

This literature review investigated the question: When are two or more attendant care workers needed to work at the same task at the same time? Traditionally,

community care work involves a single worker working alone to assist the person with disability, and hence increasing the number of workers present requires some justification.

The review found that the usual context within which the use of two person care was mentioned involved issues around the lifting, moving and transferring of clients in institutional settings. However, there was very little discussion of two person care in the community care literature, and nothing about care by more than one person as a separate issue. Neither were there any instances where two person care was mandated in specified circumstances across the board, e.g. using a hoist.

Most of the literature on safe client-handling, and on the risks of injuries to staff, refers to institutional care – hospitals, aged care facilities – rather than to community settings, although some of the considerations apply to support in the home.

This review found a number of instances where two care workers were used, although the sources did not give reasons for the practice. There were also a number of occasions when two person care was explicitly recommended, e.g. for complex personal care (bariatric patients), as a short-term solution until long-term controls were implemented, when a client was uncooperative, and with bariatric clients.

A number of studies have found that team lifting can reduce musculoskeletal injuries among staff in institutional settings, but one study failed to find any reduction in employee injuries as a result of team lifting. Other research has also found that having two or more workers rather than one is no guarantee of avoiding injury. There is no indication in any of the recommendations for avoiding musculoskeletal injuries among care staff that these occur only when staff members are working alone.

Although using a hoist to move or transfer someone did not always avoid the need for two or more care workers, it did seem as though ceiling hoists were less likely to need more than one worker than floor-based hoists. However, their use in private homes is restricted by the expense and by the need for structural alterations.

Decisions are made about the number of workers needed at the initial assessment and relate to each client's particular circumstances. Once again, there is little mention in the extensive policy and research literature on risk assessment of the need for two or more workers as a way of minimising risk.

The current emphasis in the human services sector is on eliminating client lifting to the fullest extent possible, whether performed by one person or by more than one. The usual term for this is No Lifting or minimal lifting. It involves encouraging clients to assist in their own transfers, making assessments of client-handling risk, using mechanical lifting aids and other equipment for moving and transferring clients, modifying the work environment to accommodate safe client-handling equipment, and training all staff in the correct use of equipment and techniques for moving and transferring clients.

4 Stakeholder consultation

This section summarises the views of the stakeholders about the research questions. The final section draws on these findings to discuss implications for practice guidelines.

4.1 Assessment process

Stakeholders made a number of suggestions to ensure best practice in assessments.

- Assessments should be individualised, rather than based on categories. Some stakeholders made the point that assessment should reflect the trends towards individualised funding and preferences. Most stakeholders were emphatic that blanket rules or policies are inappropriate.
- Assessments should be holistic taking account of the home environment, equipment available and potentially available, observations of handling techniques and the tasks required, and the preferences and views of clients and workers.
- Assessments should be conducted at regular intervals, to identify and respond to changes in client need (physical functions may improve or deteriorate) and ensure that equipment has not been superseded.
- If the assessment identifies no alternatives to two care workers, clear management processes for documenting, implementing and reviewing the need should be applied.

4.2 Changes over time in use of two care workers

The experience of two stakeholders is that two care workers are used less commonly than in the past, because with their shift to a more individualised approach, the routine allocation two care workers has declined. However, the experience of seven stakeholders is that the use of two care workers has become more common. They attributed this to a number of factors. The first is the increasing complexity of support needs for people living at home, as a result of the shift from institutions and efforts to increase the choices available to people with disabilities. Second, OHS legislation and greater recognition of the importance of workplace safety was seen to translate into an increase in the use of two care workers as a risk management strategy on the part of agencies. Although there is no known link between the use of two care workers and a reduction in injuries, a number of stakeholders referred to insurance premiums and workers' compensation as a reason why two care workers may be recommended. This suggests that two care workers may be used more frequently now as a risk management strategy, but in the absence of strong data about actual risks and how they can be mitigated against.

4.3 Reasons and principles for using two care workers

The reasons given for needing two care workers were consistent among the all the stakeholders (clients both with and without experience of two care workers; attendant and home care workers; OTs and government agency representatives). The most frequent reasons were:

- Client age, weight, size, and physical function (capacity to assist with lifting and positioning)
- Client challenging behaviour
- Scoliosis, spasticity or other high support needs related to positioning.

They described worker and client safety as paramount and using two care workers was a strategy to ensure this. It was also clear in some interviews, however, that the perception of safety seems to be as important to workers and clients as actual risk. For example, some stakeholders stated that the risk of manual handling injuries is increased when a single worker is used, whereas others indicated that there is no clear evidence on this—that is, the interviews indicate that there is not a clear understanding among stakeholders of whether the use of two care workers reduces the risk of injuries, compared to the use of one worker. In addition to the perception of worker safety, the perception of client safety is also important. Several participants mentioned the increased sense of safety clients feel with two workers, particularly those who are accustomed to hospital or other institutional settings, where team lifting is common.

In terms of indicators for two care workers, the assessments conducted by OTs are useful to report in some detail as these are the basis for current assessments. The risk assessments described in these interviews include:

- Client weight and height
- Ventilation needs during specific tasks
- People with high physical needs: for example, whether a client has to be moved or positioned while a task such as towelling or drying is being performed
- Equipment available and potential for the environment to be modified to bring in equipment
- Scoliosis of the spine
- Extent of spasms and contractures
- Situations that might present a risk of abuse to staff and clients
- Assessment of the home environment, including capacity to be modified and factors that prevent the safe use of equipment (e.g. uneven floors unsuitable for trolleys).

4.4 Benefits and disadvantages of two care workers

As described above, the stakeholders described the primary benefits of two care workers as relating to worker and client safety. They thought that using two care workers reduces the risk of manual handling injuries and unsafe handling of clients,

and provides a more secure working environment for workers, in which the risks to workers from clients' challenging behaviour, grievances and complaints, or unsafe environments are lessened.

A number of disadvantages, aside from cost, were also described. The most significant of these is the impact on client privacy and home environment. Teams of workers in homes can have the effect of making the home environment more like an institutional environment, in terms of interpersonal relationships and organisational factors.

One benefit of two care workers, from the perspective of the workers, is companionship. However, this may translate into care workers interacting with each other rather than with the client. One client with experience of both two care workers and a single worker expressed a preference for the latter, because of this reason:

> It just was a second person in your home for that period of time and then two workers together tended to – nothing against the workers, they're quite well communicating people – but they did tend to get into their own sort of little group … and chat about stuff and work … I just felt sort of uncomfortable about it, because... it just sort of seems a bit rude

A government official made a similar point, about the possibilities for good relationships between workers and clients when single workers rather than teams are in place:

> The whole idea of having two people in your home and working with you is a fairly heavy intervention. It's almost easier, I think, to have a one-to-one relationship and to feel a bit more involved if there's only one carer, whereas when you have two it kind of shifts the balance

Relationship dynamics were described as tending to be more complex with a three person relationship than that between a client and single worker. This can happen if, for example, the client regards one worker as more capable than the other. Power relationships tend towards being more unequal with teams of workers than single workers, with an agency that conducts assessments describing this as 'intimidating' for clients and putting 'the carer-consumer balance out'.

The presence of two care workers may also be less safe than using one worker. While physical disparity between a worker and client can increase the risk of injury to client and/or worker, physical disparity *between* workers can also increase these risks: it is difficult, for example, for one short worker and one tall worker to safely lift a client if the height difference is significant. Stakeholders emphasised the importance of matching care workers to clients across the range of worker characteristics, including physical size, gender, ethnic background and age. They acknowledged the constraints on matching clients and workers in the context of the current workforce, but mandating the use of two care workers cannot relieve these constraints and may even add to them.

The complexity of interpersonal relationships is mirrored in the complexity of organisational factors with two workers. This relates to staff recruitment, rosters and leave. Seven stakeholders from peak bodies, government and service provision agencies talked about the difficulties of organising two workers rather than one, and the difficulties that arise when one worker is sick or arrives late, or when workers do not get on and cannot work well together. While cost is obviously a significant factor in terms of salaries, the consultations suggest that the indirect costs of two carers, associated with the organisational resources required to coordinate this arrangement, are also significant.

4.5 Alternatives to two care workers

There were no alternatives to the use of two attendant carers proposed for clients who use ventilators. A meeting of the reference group noted that the literature describes glossopharyngeal breathing, or 'frog breathing' as a technique used by some people who are otherwise fully ventilator dependent (Maltais, 2011). In circumstances where a client does not want or require two attendant care workers except as a safety measure around ventilation, and has been trained in this technique, two attendant care workers may not be needed. However, the consultations and literature suggest that this circumstance is rare.

The stakeholder consultations identified possible alternatives to two attendant care workers for all clients, with the exception of those who use ventiltors. When the decision to use two care workers is based on physical considerations—the nature of the client's physical disability, and so the nature of the physical tasks undertaken by workers—the alternatives proposed were equipment, environmental modifications, and staff training. Challenging behaviour and worker safety also recurred as a reason for two workers, and fewer alternatives were suggested here, which may indicate that agencies and practitioners are not aware of the interventions and strategies that may be suitable in these circumstances.

Equipment

Equipment (e.g. hoists, slide sheets, electric beds, and shower/commode chairs) was nominated most frequently as assisting in lifting and moving tasks, and which can remove the need for two care workers in some circumstances.

An occupational therapist commented that the instruction manuals for hoists often refer to two care workers, which agencies then follow as a matter of course:

> To be perfectly honest, I think it's to do with the hoist manufacturers. All instruction manuals that come out with hoists indicate that two people are required and so I think some service providers are taking that as black and white and just following that policy and others are prepared to risk manage the situation and one put in one if one's needed.

The literature review highlighted that the instructions are probably written this way assuming an institutional context.

Reassessment of equipment at intervals was also recommended. For example, clients who received an injury twenty years ago may be using outdated equipment. Just as reassessment of clients was recommended to adjust the kind and level of care worker support needed, so too reassessment of the assistive technology and equipment being used was recommended.

EnableNSW, responsible for providing appropriate equipment, aids and appliances to people with disabilities in NSW, has a loan pool for trialling equipment, as do hospitals. This facilitates testing of equipment in the client's home, which is important to resolve the appropriateness of equipment and its use with one or two workers. This is consistent with EnableNSW's approach of considering the purchase of more expensive equipment if it increases the independence of the client or reduces risk of illness or injury to either the client or attendant care worker which may in turn reduce the need for a second attendant care worker. EnableNSW does not cap the cost of aids and equipment but provides required equipment based on assessed need. Other considerations however also include the costs that are not usually covered by EnableNSW, such as installation of a ceiling hoist; and the feasibility of whether specialised equipment is actually available, such as equipment that needs to be specifically designed for the person due to their complex needs.

Environmental modification

Changing the environment in different ways, such as removing carpet, and installing alarms and assistive technology, were described as removing the need for two care workers in some circumstances. Although the costs of this are sometimes significant, a government official noted that the long-term costs of a second worker are often higher.

Assessment of the environment involves an assessment of whether or not new equipment can be installed: ceiling hoists, for example, cannot be installed in every home. However, a few stakeholders also made the point that small spaces may also not be safe for two workers. If a bathroom is too small for a commode shower, it may also be too small for two workers to be safe.

Training

Training of staff in use of equipment, and in alternatives to the use of two care workers, was described as important. For example, a client who has one care worker said that inexperienced carers were not always capable of lifting her safely, but if the care worker was experienced, and had sufficient skills, then an extra worker was not needed. Representatives from an agency that completes assessments for the provision of equipment similarly described training as important, alongside client size and other characteristics, in deciding whether one worker or two is needed.

> You can do a hoist transfer very safely with someone with quite high needs by yourself, but it depends on the right environment, the consumer, the training level of the staff, and the weight and height of the actual [person]. So it comes down to a risk assessment that

> includes all of those parameters, including the skill level of the staff involved, and the training and those sorts of things as well. There isn't a blanket, 'You need two people to use a hoist', no, no.

Representatives of government agencies also emphasised the utility of training about effective use of equipment such as hoists, so that one worker is sufficient in at least some circumstances.

Training does not relate only to use of equipment, but also to the physical training of care workers, for example education in lifting techniques, warm-up exercises and stretching. It also relates to training in specific contexts, particularly manual handling of clients in domestic rather than institutional environments. Workers familiar with hospital settings, or who received training that assumed their workplaces would be group homes or hospitals, need specific, problem-solving based training in home environments. This may involve the assessment of the home's potential for modification, including furniture, floor coverings and load-bearing capacity of walls and ceilings. It may also involve trialling the use of different kinds of equipment. Support and training is necessary in order for workers to make these specific, responsive assessments to individual clients and environments.

Challenging behaviour

Challenging behaviour is defined as behaviour of 'such intensity, frequency or duration that the physical safety of the person or others is placed in serious jeopardy or behaviour which is likely to seriously limit or deny access to the use of ordinary community facilities' (Emerson, 1995). Half the respondents raised client challenging behaviour , as one of the reasons for two care workers (10/23 interviews), although the research literature about this is sparse. This suggests a gap in the research literature, perhaps because challenging behaviour is becoming more concerning to workers and agencies, and research has yet to catch up with this. In circumstances where the worker is at risk of being subject to the effects of a client's challenging behaviour, intervention programs for the client were suggested by one stakeholder. The research literature indicates that interventions based on functional assessments of challenging behaviour and positive behaviour support are not well known by services and practitioners (Whittington and Burns, 2005), which may be one reason why there were far fewer suggested alternatives to two care workers for clients with challenging behaviours.

5 Implications for principles and guidelines in practice

The policy and service factors that make it possible for people with high support needs to live at home are relatively new. Research on the specific configurations of support that enable people to live at home is also new. It is therefore not possible to point to robust empirical evidence for the use of alternatives to two care workers, but it is possible, based on the literature and stakeholder consultations, to suggest principles and processes to guide assessments. Approaching decision making with these principles can facilitate individualised assessment about specific problems and solutions, and address both the actual and perceived benefits and risks of two care workers.

Stakeholders agreed about principles for considering alternative strategies. The principles to make decisions about alternatives to two care workers relate to:

- client and worker safety
- meeting the needs of clients and
- ensuring that both clients and workers feel secure.

They identified circumstances in which there are no alternatives to two care workers, but they disagreed about what these circumstances are. However, there was consensus that these principles should guide any decisions around alternatives to two attendant care workers.

The fact that clients, workers and management are concerned about safety, yet more than one care worker is not always the safest, is also central to the assessment process. In the case of worker safety, for example, two care workers may give workers a sense of safety and security, even though there is little evidence that two care workers is any safer than one. This indicates a need to address the perceived safety in the workplace, and to develop strategies to ensure workers not only are safe, but also feel safe. Similarly, clients' anxiety around having one worker may stem from habituation to an institutional environment, or to an experience of abuse in the past, or cultural norms around being alone with another person. This indicates a need to not only ensure that the client is safe, but to ensure that their anxieties are holistically and comprehensively addressed.

Some of the alternatives to two care workers relate to training and equipment, as described above. Workers experienced in institutional settings may benefit especially from training in home environments, training in teams, and periods of time observing and working with others. These strategies should also set up systems of peer support and validation, which should in turn serve the purposes of support and validation currently only available through team working.

Other alternatives relate to better systems of support for workers and clients, to address the anxieties about the use of single workers rather than teams. The concerns expressed by workers, for example, relate to informal support, validation of their decisions, and a sense of safety. The benefits of two care workers to safety may be perceived rather than real. Evidence on multidimensional strategies for safety and injury prevention include risk assessment, education and training, environmental modification and monitoring systems. Management processes such

as team management structures to provide peer support for validation and learning can address isolation and confidence of workers. Such strategies are also opportunities to follow the principles of person centred planning, by building a team in which the client's specific needs are at the centre, and in which communication, training and support for staff are based on these needs.

The concerns expressed by clients relate in some cases to safety, especially at times of transition, such as moving from an institutional environment, where teams of workers are common, to a home environment. Identifying and responding to client anxiety around the use of single workers is also a positive step. In other cases, cultural and social concerns may be responsible for client anxiety: for example, a strong preference by some clients for female or male care worker, or the fear that some clients have of being alone with a single worker. Again, the responses to these concerns can be guided by the principles of solving specific problems and responding to individual needs: for example, traumatic responses to previous abuse require more nuanced responses than resorting to two care workers.

Risk management is an important consideration for agencies, particularly in relation to the risk of client and worker injury. Addressing the responsibilities of agencies to minimise risk, and adapting the sometimes inflexible systems in which risk assessments are devised, can avoid a simplistic two care worker response to risk management.

Table 5.1 summarises the principles and strategies discussed in this section of the report. It lists the principles behind decisions about the use of two care workers, as identified in the literature and stakeholder consultation. It also identifies strategies to consider the feasibility of for addressing these principles, which may provide alternatives to the use of two care workers. These high-level strategies are also derived from the literature and consultation. Whether the alternative strategies are relevant or feasible to a particular person's circumstances, needs to be determined in each case. The table is a summary of principles and possible strategies only, and is not intended as a resource manual or user guide for practitioners. The guidelines are published separately.

Table 5.1: Principles and alternative strategies instead of two care workers for consideration of the feasibility in the particular circumstances of the person

Reason for two care workers	Principle behind the reason	Alternative strategies for consideration of the feasibility to address the reason and principle in the particular circumstances of the person
Client size, weight, disability	Client safety	Assessment process: tasks required, level of client physical functioning, home environment, skills/techniques/equipment needed
		Home modification to install equipment
		Trial use of equipment (via loan pool, assistance from equipment agency representative)
		Installation of high quality equipment e.g. hoists, shower commodes, trolleys
		Training in the use of equipment
		In situ training in home environments
	Worker safety	Physical matching of client and worker
		Two workers as an interim measure to determine worker characteristics (strength, flexibility, height) needed
	Quality of work	Peer support networks
		Opportunities for feedback and validation
		Regular monitoring and retraining opportunities
Challenging behaviour	Worker safety	Staff training to ensure a consistent approach
		Functional assessment (what functions does the behaviour serve for the client? What is being communicated by the behaviour?)
		Positive behaviour support interventions
		Behaviour management plan
		Worker support plans and safety protocols
Client preferences	Meeting the needs of clients	Assessment process: identify why two care workers are desired (history of abuse, anxiety about being alone with one person, habituation to hospital environment) to identify other appropriate safeguards
		Supported transition process to one worker
Informal carer preference	Meeting the needs of clients	Assessment process: identify why two care workers are desired (e.g. respite for the informal carer) to identify the most appropriate support
		Consultation, providing family members with education and peer support opportunities
Ventilation	Client safety	Clinical assessment process: potential for alternative voluntary respiration methods('frog breathing' or neck breathing) for short periods
		Installation of alarms

Reason for two care workers	Principle behind the reason	Alternative strategies for consideration of the feasibility to address the reason and principle in the particular circumstances of the person
Scoliosis, spasticity, positioning needs	Worker safety, client safety	Assessment process: equipment/techniques required e.g. shower chairs, tilting wheelchairs, thoracic support e.g. special seating with lateral pads
		Staff training

Appendix 1 Examples of assistance algorithms

An algorithm is a procedure consisting of a sequence of logical steps to determine a given task. An example is from Nelson and colleagues (Nelson et al., 2003) who developed algorithms for the following high-risk tasks.

- Transfer To and From: Bed to Chair, Chair to Toilet, Chair to Chair, or Car to Chair
- Lateral Transfer To and From: Bed to Stretcher, Trolley
- Transfer To and From: Chair to Stretcher, Chair to Chair, or Chair to Exam Table
- Reposition in Bed: Side to Side, Up in Bed
- Reposition in Chair: Wheelchair or Dependency Chair
- Transfer a Patient Up from the Floor
- Bariatric Transfer To and From: Bed to Chair, Chair to Toilet, or Chair to Chair
- Bariatric Lateral Transfer To and From: Bed to Stretcher or Trolley
- Bariatric Reposition in Bed: Side to Side, Up in Bed
- Bariatric Reposition in Chair: Wheelchair, Chair, or Dependency Chair
- Patient Handling Tasks Requiring Sustained Holding of a Limb/Access
- Bariatric Transporting (Stretcher, Wheelchair, Walker)

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