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## Development and Evaluation of Models for a Home Care Ceiling Lift Program in BC

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Home Care Ceiling Lift Program in BC**

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## Executive Summary

### INTRODUCTION

Worldwide, seniors are the fastest growing population group. Demand for the provision of health services to our aging population is increasing, and will continue to do so for many years to come. Community health workers (CHWs) work in the homes of clients (patients), assisting with activities of daily living. As their workplace is the client's home, the CHW is faced with unique health and safety challenges. Transferring and repositioning clients, which CHWs experience on a daily basis, produces considerable stress to the spine and the upper limbs. In the event that a client is unable to weight-bear or unexpectedly collapses, the CHW can experience an even greater risk of injury.

Mechanical lifting devices, such as ceiling lifts, which have been shown to reduce risk of injury to health care workers, are found more often in acute and long term care facilities than in clients' homes. Presently, most of the available lift devices are prohibitively expensive and often inappropriately designed for home use. Facilitating the use of similar devices in the homecare environment is complex and the barriers and opportunities to the use of mechanical lifts in homecare are not well understood. To address this challenge, researchers sought the input of the stakeholder community so as to develop a model homecare ceiling lift program for BC..

### METHODS

The research methodology was as follows:

#### **Issues Identification (Phase 1)**

This phase involved identifying the issues surrounding the use of ceiling lifts in the home care environment through a critical review of academic, scientific, clinical literature, and grey literature. Of particular interest was identifying existing models for implementing ceiling lifts in home care. For example, England fully funds ceiling lifts in homes of patients that need them. The US partially funds ceiling lifts and mechanical lifts for Medicare patients. These and other programs were researched.

#### **Issues Analysis (Phase 2)**

This phase involved conducting an issues analysis to determine which issues are *drivers* of a successful program and which issues are *outcomes* of a successful program. A technique called an Interrelationship Digraph (ID) was used to look for influential relationships between all of the issues

in order to obtain a sense of which issues are most likely driving or influencing the current state of the system, and which issues are more likely outcomes of the system. Once the issues were categorized into “drivers” and “outcomes” they were used along with other criteria (e.g. goals for a provincial home care ceiling lift program) to develop a possible home care ceiling lift model.

### **Model Development (Phase 3)**

To create the model, the Principle Investigator, Co-investigators and Research Team completed the following:

- 1) Program goals were developed to take into account the interests of all stakeholders including the Ministry of Health - Home and Community Care, community health workers, unions, home support agencies, clients, family members of clients, occupational therapists and case managers, as well as suppliers, installers and technical support personnel.
- 2) The issues, identified in Phase 2 as having significant influence over the access to and adoption of ceiling lifts in home care, were developed into criteria for the selection of a model for a home care ceiling lift program.
- 3) The issues, identified in Phase 2 as being outcomes of a successful home care ceiling lift program were considered the success measures for such a program.
- 4) Once the goals, criteria for selection, and success measures were established, the research team developed a model program that attempted to meet all stated goals, included the elements that met the criteria for selection and, once implemented, would have the ability to be evaluated against the success measures.

### **Model evaluation and feedback (Phase 4)**

Key stakeholders from the stakeholder groups were identified and contacted to ascertain their interest in evaluating the proposed model. If they agreed they were asked to sign an informed content form before participating in an interview to discuss the model developed.

## **RESULTS**

Analysis of the issues identified the drivers of the current system, and a need to:

- Identify and publicize available funding sources,
- Identify and publicize information on equipment options, with purchase and installation costs

- Educate clients, CHWs, agency and HA staff that CHW health and safety is as important as client care,
- Advocate the positive links between CHW safety & quality client care,
- Adequately resource agencies (& CHWs) to use ceiling lifts,
- Educate clients, CHWs, agency and HA staff that benefits offset transfer time,
- Provide agency and health authority staff with access to current information on the benefits of ceiling lifts in home care,
- Increase OT and clinicians' awareness of their OH&S responsibilities for CHWs under the Workers Compensation Act,
- Provide task specific training to OTs, clinicians, and CHWs,
- Provide agencies with access to information on the benefits of ceiling lifts and resources for implementation,
- Improve risk communication methods between clients, CHWs, OTs, agency and HA staff,
- Develop and implement standard criteria, guidelines, and policies for client assessment,
- Develop and implement standard practice guidelines that ensure clients receive assessments prior to receiving home support service,
- Provide agencies and health authorities with the information, tools and resources to efficiently implement an effective no-lift policy in home care,
- Develop and implement solutions to rural service delivery challenges (geographic), and
- Determine the need (demographic) for lifts throughout BC.

The following are examples of the issues determined to be outcomes that could be used to measure the effectiveness of the model once it is in place to:

- Improved perception of ceiling lift use in home care,
- Increased awareness of the options available for ceiling lift equipment in homes,
- Increased reporting of transfer related risks,
- Increased use of equipment loan programs,
- Increased awareness of the resources and options available to acquire equipment,
- Increased use of tools and resources to effectively implement a no-lift policy, and
- Increased use of standard criteria to recommending lift equipment for CHW safety.

The program would have to allow equal application of a “no-lift” policy for both smaller independent homecare agencies and health authority amalgamated agencies, provide access to lift equipment to everyone who needs a lift in BC, promote both CHW safety and client care, and outline options for provincial government support.

The following high level model, developed to meet the goals and address the drivers that were identified, has two main components described below:

- A central resource center, and
- Regional program champions.

### **Central Resource Centre**

The central resource centre, accessible to all British Columbians, would have a coordinator position as well as web and paper based information sources including:

- A funding source tool including a standardized application for lift funding
- Gap funding coordination
- A general information network that includes:
  - an equipment resource
  - regular updates on technology changes
  - current information on client handling injury risks
  - academic studies / best practice
- Template policies, contracts, report forms, and risk communication tools
- On-line education and training for OTs and CHWs
- Standardized training materials (for in-person training)
- Promotion of benefits of ceiling lift use in home care
- Links to other related resources

### **Regional Program Champions**

Regional Program Champions in each Health Authority (HA) would act as local resource people, and assist with:

- Lift supplier relationships for each HA that ensures equivalent costs for lift delivery, installation, maintenance and service in all parts of the region
- Standardized client contracts for lift use
- Funding for lifts of last resort
- In-person education and training of OTs, HSAs, CHWs

## Model Evaluation

Thirty-two stakeholders completed the interviews. Given that essentially all of the elements were identified as very important, it was necessary to prioritize the list. As such, the percentages associated with a “very important” ranking were sorted in descending order, providing a sense of priority for each element (see below). Question #13, ranked as fairly important by the majority, appeared on the bottom of the priority list regardless of whether the “fairly important” or “very important” percentage was used.

Table 1: Program Element Interview Results – Interview Participant Ranking

Question #	% ranked “Very Important”	Question
Q10	89	Provide agencies and health authorities with the information, tools and resources to efficiently implement an effective no-lift policy and ceiling lift program.
Q4	81	Develop and implement standard criteria, guidelines, and policies for client transfer / reposition assessment.
Q7	81	Improve methods to communicate risk between clients, CHWs, clinicians, agency and HA staff.
Q3	80	Adequately resource assessments (i.e. address limits in funding and human resources to complete assessments (and install equipment) before clients are transferred home).
Q5	80	Develop and implement standard practice guidelines that ensure clients receive assessments prior to receiving home support service.
Q1	78	Identify and publicize available funding sources to assist clients with purchasing and installation.
Q8	77	Educate clients, CHWs, agency and HA staff that CHW health and safety is as important as client care.
Q11	77	Provide task specific training to clinicians (e.g. assessing weight bearing status, assessing safety of transfers), and CHWs (e.g. using ceiling lift equipment).
Q2	62	Adequately resource agencies (& CHWs) to use ceiling lifts.
Q9	58	Increase awareness of Occupational Health & Safety responsibilities for CHWs under the Workers Compensation Act.
Q6	56	Identify and publicize current information on: equipment options, with purchase and installation costs, and the benefits of ceiling lifts in homes
Q12	44	Geographic delivery challenges.
Q14	44	Establish Regional Champions coordinate the program in various geographic regions:
Q13	38*	Establish a web-based provincial information resource center for centralized access to current information, tools, and resources.

\*38 % ranked this as fairly important; 34% ranked it as very important

## **DISCUSSION AND CONCLUSION**

A model was developed in this study, with extensive stakeholder input, allowing the identification of drivers for a program and indicators of its success. A prioritized list of program elements have now been identified that can be combined into a program and piloted for further evaluation. It is of interest to note that the top 3 priority program elements of education, standardization knowledge transfer, and communication, and their corresponding options, relate to the development of practical tools that can be easily disseminated to, and used directly by, front-line workers. Funding was deemed the fourth priority element. Specifically, stakeholders indicated that in addition to education, standardized knowledge transfer and communication regarding the various aspects of the program, the resource issues must be properly addressed (i.e. the program must take into consideration the funding and human resources needed to complete assessments and install equipment before clients are transferred home) as a priority. We conclude that a program, with the elements identified in this study, can be developed, including taking into account resource needs. What is now needed is the implementation and evaluation of such a program in practice.

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## CRITICAL REVIEW OF EXISTING LITERATURE

### *a) Introduction*

Worldwide, seniors are the fastest growing population group. One in ten persons is currently 60 years of age or older. It has been predicted that by 2050, one in five will be 60 or older and by 2150, one out of every three persons will be over 60 years of age (United Nations, 1999). Similar trends exist in Canada: the population of seniors was 3.5 million in 1996 and is predicted to be 6.9 million by 2021 (The Canadian Population is Aging, Public Health Agency for Canada, 2005). Seniors over 85 years of age are the fastest growing segment of the overall seniors' population and they are the ones with the greatest healthcare needs.

Most seniors enjoy independent living; only 7% of Canadians over 65 years live in institutions. Seniors living independently require varying levels of assistance in the home. Ten percent of those under 75 years require help with daily tasks, 20% of those 75 -79 need help and 40% of individuals over 80 years need assistance (Seniors Live Independently, Public Health Agency for Canada, 2005). Often it is family members who are able to provide this assistance but, as the senior's health deteriorates, community health workers are hired to help in homes.

### *b) Community Health Workers*

One approach to meeting the growing needs of our aging population has been an increased role of home health care. Community health workers (CHWs), also known as home care workers (HCWs), home support workers (CHWs), and personal support workers (PSWs) work in the homes of patients (hereafter referred to as clients) assisting with activities of daily living. They perform such duties as house cleaning, grocery shopping, laundry, meal preparation, washing and bathing clients as well as assisting with transfers and lifts to and from beds, chairs, baths and toilets.

As their workplace is the client's home, the CHW is faced with unique ergonomic situations such as working alone, working with multiple clients who possess varying degrees of cognitive and physical abilities, and having workplaces that are not regulated with respect to occupational health and safety. While some homes are neat and spacious, others are untidy, cramped or cluttered. Some clients are friendly and co-operative, others may be violent or depressed (US Department of Labour, 2002). Lifting and transferring clients, which CHWs experience on a daily basis, produces considerable stress to the spine (Paris-Seeley et al. 2000). In the event that a client is unable to weight-bear or unexpectedly collapses, an even greater risk of lower back injury can be experienced by the CHW.

CHWs are sometimes required to travel substantial distances to a client's home (both in urban and rural settings), often with time constraints between visits. This has contributed to their job being one with elevated motor vehicle accidents, and therefore more time loss injuries (US Dept of Labour, 1997).

The CHW job requires minimal training and attracts primarily women (90%) in their middle years (mean age approximately 42 years) (OHSAH 2003a). Community health work is associated with low wages, few benefits, low status, high turnover rates, and limited opportunity for advancement (OHSAH, 2003a). Interestingly, these workers are also often caring for their own aging family members, and as they age themselves, are losing the physical strength required to care for frail individuals. The obesity epidemic in North America is compounding the problem of transferring and lifting clients. One study from a Veterans Administration Hospital stated that the range of weights being lifted and transferred was 91 – 387 pounds and averaged 169 pounds (Nelson et al. 2003a). Given that most CHWs are middle aged women with declining strength, lifting and transferring large bodies is a risky endeavor. In fact, over 40 years ago, an editorial was written stating that,

“The adult human form is an awkward burden to lift or carry. Weighing up to 200 pounds or more, it has no handles, it is not rigid, and is susceptible to severe damage if mishandled or dropped. When lying in bed, a patient is placed inconveniently for lifting, and the weight and placement of such a load would be tolerated by few industrial workers” (Anonymous, 1965).

***c) Back and Other Musculo-Skeletal Injuries Incurred by Healthcare Workers***

Musculo-Skeletal Injuries (MSIs) are the most common type of work-related injury to healthcare workers (OHSAH 2003b). Compensation statistics worldwide show that healthcare workers consistently have higher MSI rates than all other industries, and overexertion accidents during patient handling is the major cause of injury claims (OHSAH 2003b). Similar to other jobs in the healthcare industry, home health care is associated with an increased risk for back and other MSIs. Statistics indicate that those working in home health care experience two to three times the rate of MSI injuries compared to nurses working in hospital settings (OHSAH 2003b, US Bureau of Labor Statistics 1997). In British Columbia, the Workers Compensation Board reported that overexertion injuries due to patient handling represented 36% of CHWs claims. CHWs incurred 171,385 lost days from work; and 38% (or 65,122 days) were lost from overexertion due to handling persons between 1994-98. Claims totaled \$13,805,409, of which \$4,475,376 was awarded for overexertion injuries (British Columbia Workers Compensation Board, 2000). More recently, short term disability claims for community health support services increased from 537 claims in 2001 to 637 claims in 2005 (WorkSafe BC, 2005).

**d) *Lift Devices***

Lift devices are used to lift and transfer persons to or from wheelchairs, beds, toilets, and bathtubs. They support the individual's entire weight in a sling attached to a lift device that is suspended either on (i) a floor stand on wheels or, (ii) an overhead ceiling track. The person then can freely move from one place to another. Ceiling lift devices involve a permanently fixed ceiling track, usually attached to the ceilings in bed and bathrooms, as these rooms are where clients need lifting and transferring from bed to chair and chair to toilet or bath. The lift device and sling can be stored in a cupboard and brought out to be used when required. They require minimal physical effort to maneuver and are less cumbersome than a mechanical floor lift. Floor lifts require more time to use and may require considerable strength to move if their wheels are not in optimal condition. They can pose a risk for injury if a caregiver trips over or runs into them. They are also large and consume more space than a ceiling device. As a result, they are often stored in cupboards and not as readily available as the ceiling lift device (OHSAH 2003b).

**e) *Lift Device Policies***

Certain countries, notably England and Australia, recognize the inherent risk posed to health care workers who lift and transfer patients. As a result, these countries have implemented “no lift” policies and are subsidizing lift devices for those in need of them (Edlich et al. 2005). In Canada and the United States, however, progress is slower. In BC 2001, a Memorandum of Understanding was signed between the Healthcare Unions and Employer which stated,

“all parties agree to establish a goal of eliminating all unsafe manual lifts of patients/residents through the use of mechanical equipment, except where the use of mechanical lifting equipment would be of risk to the well-being of

the patients/residents. The employer shall make every reasonable effort to ensure the provision of sufficient trained staff and appropriate equipment to handle patients/residents safely at all times, and specifically to avoid the need to manually lift patients/residents when unsafe to do so. If the use of mechanical equipment would be a risk to the well being of the patients/residents, sufficient staff must be made available to lift patients/residents safely” (OHSAA 2003b).

Given this Memorandum of Understanding, and research supporting benefits of “no lift” policies and the use of lifting devices, British Columbia needs to put into practice ergonomics programs to include the implementation of lifting devices in order to ensure a safe and healthy workforce of CHWs.

**f) *Lift Devices, Injury and Cost Reductions***

Approaches taken to prevent MSIs among all healthcare workers have included ergonomics and biomechanics training, organizational changes, “no lift” policies, and the introduction of lifting and transferring devices. Studies have shown statistically significant benefits in terms of reduced compensation costs, reduced injury rates, decreased perceived exertion and increased client security and comfort by implementing “no lift” policies and installing lifting devices and training in their use (Zhuang et al.1999, Zhuang et al., 2000, Garg and Owen 1992a, Garg and Owen 1992b, Trinkoff et al. 2003, Collins et al 2004, Spiegel 2002, Nelson et al. 2003a and 2003b, Owen and Fragala, 1999, Paris-Seeley et al. 2003, Heacock et al. 2004, Pellino T et al., 2006).

Researchers at the Tampa Veterans Administration Medical Centre reported that after lifting devices were installed in six Veterans Administration hospitals, the number of reported injuries

decreased by 40%, the number of restricted workdays decreased by 91%, and the number of lost workdays decreased by 76%. The program broke even in its first year and it is anticipated that \$5 million dollars will be saved in the next nine years (Nelson et al. 2003b). It should be pointed out that the claims represent only direct costs (costs for medical care and the compensation paid to injured workers). Not considered include replacement of injured workers, additional training time by supervision and administration, loss of productivity and decreased morale; these costs can exceed the amount of direct costs (Fragala 1993). Another study showed reductions in worker's compensation claims and injury reports when a "best practices" musculoskeletal injury prevention program consisting of mechanical lifts and repositioning aids, a zero lift policy, and employee training in lift usage was implemented (Collins et al. 2004). The same study reported that an initial investment of \$158, 556 for lifting equipment and worker training was recovered in less than three years. Closer to home, 65 ceiling mounted lifts were installed in an extended care unit of a British Columbia Hospital. Staff were trained on how to use the lifts and a "no lift" policy was implemented. Compensation claims were assessed for the year before installation and one year after installation has been completed. After the intervention, rate of MSI due to lifting and transferring reduced by 58%, the cost of compensation claims for lifting and transferring injuries decreased by 69%, and the authors suggested that after the cost of the lift was considered, the savings in compensation would result in a payback period of two years (Spiegel et al. 2002). Surrey Memorial Hospital in British Columbia, Canada, reported that MSIs accounted for 63% of all work related injuries, 5,800 lost workdays and an estimated WCB cost of \$1.4 million CDN. The hospital purchased lifting devices and implemented an ergonomics program (risk/hazard assessment, staff training in biomechanics, injury prevention strategies, and standardized lift and transfer procedures), and a no manual lift policy. The intervention showed a direct claim cost reduction of 95% from \$16,300 CDN in 1992/3 to \$726 CDN in 1994 (Perrault, 1995). In Quebec, ceiling mounted lift

devices were installed in a 200-bed facility. Prior to the intervention, the facility experienced approximately 26 lost time injuries and 983 lost days per year as a result of patient handling activities. Two years after the intervention, there was an average of 6.5 injuries per year and 67 lost work-days (Villeneuve, 1998).

***g) Ceiling Lift Use in Home Care***

Although there is a growing body of research on the use and benefits of lift devices in the institutional setting, research in the home setting is limited. Recent studies on the use of ceiling lifts in the home (Paris et al. 2006, OHSAH 2005) recommend the need for further research into identifying and addressing the barriers to access and adoption to ceiling lifts in the home setting. Paris et al. 2006 found there to be significant difficulty of recruiting home care clients. However once participants were engaged to be in the study, their acceptance of the device was not of consequence. This pointed to a key question: Are there barriers in the “system”, or within stakeholder groups (besides the clients) that preclude the effective adoption of lifts? We believe this “macro health system” topic related to lifts merited further investigation.

**OBJECTIVES, RESEARCH DESIGN AND METHODOLOGY**

***a) Objectives***

The objectives of the study were to:

- 1) Identify and analyze key issues related to access to and adoption of ceiling lift use in home care, and
- 2) Develop and evaluate a model for the successful implementation of a ceiling lift program in home care in BC.

**b) Research Design**

The research design involved data collection from the following sources:

- 1) A review of the scientific, academic, clinical and grey<sup>1</sup> literature.
- 2) Use an interrelationship diagraph technique to analyze the issues<sup>2</sup>.
- 3) Model development and evaluation based on the results of the issues analysis.
- 4) Feedback from stakeholders at all levels required to implement a successful ceiling lift program in home care. Stakeholders include:
  - a. Ministry of Health
  - b. Corporate and Union OH&S specialists
  - c. Health Authority Home Support providers and contracted Home Support Agencies
  - d. Clinicians (including Occupational Therapists)
  - e. Case Managers
  - f. Community Health Workers
  - g. Home Care Clients
  - h. Equipment specialists

**c) Methodology**

The research methodology is as follows:

**i) Issues identification**

This phase involved the identification of the issues involved in the use of ceiling lifts in the home care environment. In addition to the issues already identified in the critical review of the

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<sup>1</sup> The grey literature search strategy to be used can be found at the following web-site from the National Information Centre on Health Services Research and Health Care Technology - <http://www.nlm.nih.gov/nichsr/ehra/chapter10.html#ref>

existing literature listed above other issues were identified from sources of grey literature and new sources of academic, scientific and clinical literature. Of particular interest were identifying existing models of and issues with ceiling lift usage in home care. For example England fully funds ceiling lifts in homes of patients that need them. The US partially funds ceiling lifts and mechanical lifts for Medicare patients. These and other programs were researched.

## ii) Issues analysis

This phase involved conducting an issues analysis to determine which issues are *drivers* of a successful program and which issues are *outcomes* of a successful program.

A technique called an Interrelationship Digraph (ID) was used to look for influential relationships between all of the issues in order to obtain a sense of which issues were most likely driving or influencing the current state of the system, and which issues are more likely outcomes of the system (as opposed to influencing the system). Each issue was compared with each other and the question was asked as to which issue has a greater influence over the other. In this way, literally hundreds of questions were asked about the possible influences between critical issues in a system. If there was a low or no influence, or an influence could not be determined from available information, no relationship between the issues was noted. Issues that had the greatest number of relationships were considered to be the most critical for further action or study. Once the issues were categorized in to “drivers” and “outcomes” they were used along with other criteria (e.g. goals for a provincial home care ceiling lift model) to rank a possible home care ceiling lift model.

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<sup>2</sup> The interrelationship digraph technique used is described in the following publication Quality: From Customer Needs to Customer Satisfaction. London: McGraw Hill Book Company, Europe. (Bergman & Klefsjo 1994).

### iii) Model development

Model development consisted of the following steps that were conducted by the Research Team.

- 1) Develop the goals of a ceiling lift program for home care in BC.

The goals of the program took into account all stakeholders including the Ministry of Health - Home and Community Care, community health workers, home support agencies, clients, family members of clients, occupational therapists, and suppliers, installers and technical support personnel.

- 2) Develop criteria for the selection of a model for a ceiling lift program for home care in BC based on the drivers identified in step 2.

Issues that were identified as having significant influence over the access to and adoption of ceiling lifts in home care were developed into criteria for the selection of a model for a home care ceiling lift program.

- 3) Develop success measures of a model for a ceiling lift program for home care in BC based on the outcomes identified in step 2.

Issues that were identified as being outcomes of a successful home care ceiling lift program were considered the success measures for such a program. For example was expected that MSI reduction will be an outcome of a home care ceiling lift program therefore it will be used as a measure of success of the program.

- 4) Develop a model for the successful implementation of a ceiling lift program for home care in BC.

Once the goals, criteria for selection and success measures of a model for a home care ceiling lift program were established, the research team developed a model that attempts to meet all stated

goals, has the elements that meet the criteria for selection and, once implemented, has the ability to be evaluated against the success measures.

iv) Model evaluation and feedback

Interviews were conducted with key stakeholders to obtain feedback on the proposed model. Key stakeholders from the stakeholder groups were identified for telephone interviews. They were then contacted to ascertain their interest in evaluating the proposed model. If they agreed they were asked to sign an informed content form. Once signed, they were interviewed. The interview questions are available in Appendix II.

## RESULTS

*a) Issue Identification and Analysis*

The following is a summary of the issues that were identified in Phase 1. We have grouped them into drivers and outcomes as described in the methodology section above. Please see Appendix I for the full description of the issues that were identified. Table 1 places the drivers and associated outcomes in a single table and correlates the drivers and outcomes to the model selection criteria and model evaluation measures that were used to draft the initial program.

Table 1: Drivers, Outcomes, Model Selection Criteria and Evaluation Measures

Issue Groups	Drivers	Model Selection Criteria	Outcomes	Model Evaluation Measures
Knowledge Transfer / Communication	Perceived lack of funding sources	A listing of all funding sources in BC is available	Caregiver involvement - positive perceptions about lifts	Caregivers, clients and agencies are aware of positive health aspects of lifts for both clients and caregivers  Everyone in HCC team has an understanding of lift equipment cost, availability, funding sources and low renovation requirements available in BC
	Low management knowledge of intervention benefits	All agency managers are made aware of lift intervention benefits	Negative association with lift devices - CHW, providers, client	
	Perception that equipment cost high - caregivers, agencies, HAs	A listing of lift equipment (with purchase costs) available in BC accessible to everyone in HCC team	Perception of lack of space in home for a lift	
	HCC team and client communication fragmented	HCC team-client communication protocol for lift assessment and access developed		
	Lack of consistent assessment guidelines/policies	Lift assessment protocol developed and disseminated		
	OTs/clinicians unaware of role as legal supervisor for CHW safety	OT information source developed outlining role in CHW safety		
Cultural	Perception of higher value placed on client care vs. CHW safety by client, agencies	CHW safety has equal value to client care.	CHW willingness to accept risk of injury	CHW less willing to be injured from manual lifting
	Perception that transfer time too long - CHWs	CHWs are allowed adequate time to perform lifts with mechanical assistance (incl. sling requirements)		

Issue Groups	Drivers	Model Selection Criteria	Outcomes	Model Evaluation Measures
Funding	Funding sustainability for caregivers and lifts not clear  Assessment costs may not be fully covered	Multi-year funding available for implementing a provincial program  All assessment costs covered.	Equipment loan programs limited  Limited options for care plans when there is a lack of equipment	Access to equipment (incl. loans) available to anyone in province who needs a lift
Management	Opposition to no-lift policy by agency management  Management, administrator support low for mechanical interventions	Management aware of liabilities for not implementing no-lift (e.g., higher WCB premiums)  Management made aware of institutional and home-based benefits	Incomplete application/adherence to no-lift policy  Lack of contract/terms of service between caregiver and client  CHW lack of authority to address risks of manual lifting	No-lift policy fully implemented across BC  Standard contracts used that outline client requirements and caregiver responsibilities  CHW have authority to request mechanical assistance
Operational	Lack of professional caregiver training  Not all clients receiving initial/timely assessments	Training programs for benefits, equipment acquisition, manual lifting risks, and professional responsibilities developed and made available in all areas of BC for OTs, PTs, CHWs, and informal caregivers.  Provincial wait-time standard adopted for assessments.	Therapy goals for client not always separate from care needs – PT/OT  OTs role in obtaining lifts not formalized/standardized  OTs role in obtaining lifts not formalized/standardized	Exercise/rehab and CHW requirements not a barrier to lift adoption or use  OT responsibilities well defined and understood by HCC team.
Geography	Rural service delivery challenges (geographic)	Lift equipment available in all areas of BC. If formal caregivers unavailable, compensation/support program for informal care provided.	Difficulty in recruiting caregivers	Caregivers and equipment available in all areas of BC.
Demographic	Actual need for a lift (demographic)	Demographic need for lifts in BC quantified.	Client perception of the need for a lift	Barriers to lift adoption by clients reduced.

## ***b) Model Development***

The following goals and objectives for the Home Care Ceiling Lift Program by BC are as follows:

- i) To support client care and worker safety
- ii) To allow equal access for all British Columbian's
- iii) To provide a common process for obtaining a ceiling lift
- iv) To provide an opportunity for clients to make choices/decisions (of equipment they want installed) and to provide feedback/input
- v) To establish province wide access to information regarding lifts
- vi) To develop a ceiling lift program that is sustainable

Model elements were derived for each driver that was identified in the analysis conducted in Phases 1 & 2. The elements were categorized into broad topic areas, and presented to stakeholders as discussed below.

### i) Funding

#1: Identify and publicize available funding sources to assist clients with purchasing and installation.

#2: Adequately resource agencies/programs (& CHWs) to use ceiling lifts.

#3: Adequately resource assessments (i.e. address limits in funding and human resources to complete assessments (and install equipment) before clients are transferred home).

### ii) Standardization

#4: Develop and implement standard criteria, guidelines, and policies for client transfer / reposition assessment.

#5: Develop and implement standard practice guidelines that ensure clients receive assessments prior to receiving home support service.

### iii) Knowledge Transfer and Communication

#6: Identify and publicize current information on:

- equipment options, with purchase and installation costs,
- the benefits of ceiling lifts in homes

#7: Improve methods to communicate risk between clients, CHWs, clinicians, agency/program and HA staff.

### iv) Education

#8: Educate clients, CHWs, agency/program and HA staff that CHW health and safety is as important as client care.

#9: Increase awareness of those who have responsibilities under the Workers Compensation Act for the Occupational Health & Safety of CHWs.

#10: Provide agencies/programs and health authorities with the information, tools and resources to efficiently implement an effective no-lift policy and ceiling lift program.

### v) Training

#11: Provide task specific training to clinicians (e.g. assessing weight bearing status, assessing safety of transfers), and CHWs (e.g. using ceiling lift equipment).

### vi) Demographic and Geographic Considerations

#12: Geographic delivery challenges.

### vii) Implementation

#13: Establish a web-based provincial information resource center for centralized access to current information, tools, and resources.

#14: Establish Regional Champions coordinate the ceiling lift program in various geographic regions:

Participants were asked to provide feedback on a series of ideas to address each element, and given opportunity to provide their own ideas. The options are shown in the interview questionnaire found in Appendix II.

**c) Model Evaluation**

The model evaluation interview is in Appendix II. The following describes the results of the evaluation.

i) Number of years in HCC

Twenty one participants reported the number of years of experience they had in home and community care (HCC). This ranged from 2 to 36, with a mean of 16.

ii) Interview categories

Thirty two people completed the interviews. Each was categorized according to their role in HCC, and answered interview questions specific to that role, as per the table below.

**Table 2: Interview Category**

<b>Interview Participant Group</b>	<b>Frequency</b>	<b>Percent</b>
Agency manager	4	12.5
Supervisor	4	12.5
CHW	5	15.6
Client	2	6.3
Case manager	2	6.3
Clinician	9	28.1
Corporate or Union OH&S specialist	5	15.6
Technician	1	3.1
Total	32	100.0

iii) Interview questions asked in each interview category

Fourteen program elements were identified for participants to evaluate. Researchers identified which elements would be relevant to each interview category to ensure participants were asked to evaluate only the elements that applied to them (or were most relevant to them). Clients, for example, were asked to evaluate funding elements, but not the questions regarding the tools and resources for implementing a program at an agency

iv) Affiliate or Amalgamate

The Occupational Health and Safety Agency for Healthcare in BC (OHSAH) defines an affiliate agency as a private or publicly funded healthcare employer with unionized staff (as per the Association of Unions), excluding the six large Health Authorities. Amalgamate HCC programs are funded through the health authorities, and are generally based out of a health authority facility or health unit. In this study, HCC providers (ex. agency/program managers, supervisors) were classified as affiliate or amalgamate based on the definitions above. Clinicians were excluded from the classification as they often provided assessment services to both types of service provision models. The “Affiliate or Amalgamate table identifies the number of affiliates and amalgamates that participated in the interviews.

**Table 3: Affiliate or Amalgamate**

Affiliate or Amalgamate	Frequency	Percent
Unclassified	17	53.1
Affiliate	6	18.8
Amalgamate	9	28.1
Total	32	100.0

The Affiliate or Amalgamate \* Interview Cross-tabulation table classifies the number of participants based on their interview category and their agency/program type.

**Table 4: Affiliate or Amalgamate Interview Cross-tabulation**

	Interview	Total
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	agency manager	supervisor	CHW	case manager	
Affiliate	3 (75%)	1 (25%)	1 (20%)	1 (50%)	6
Amalgamate	1 (25%)	3 (75%)	4 (80%)	1 (50%)	9
Total	4	4	5	2	15

v) Region

Participants that provided HCC services were classified according to the health authority they worked for. Those participants that provide provincial OH&S services, the technicians, and clients were excluded from this classification (“unclassified”).

**Table 5: Region**

Health Region	Frequency	Percent
Fraser Valley	4	12.5
Interior BC	2	6.3
Northern BC	7	21.9
Vancouver Coastal Region	5	15.6
Vancouver Island	8	25.0
Unclassified	6	18.8
Total	32	100.0

vi) Question rating - frequency and percentages

Frequencies and percentages were calculated based on the participant responses for the specific questions they were asked to answer. Those not provided a particular question were excluded from the analysis for that question.

All of the questions were ranked as very important, except the question regarding the establishment of a web-based provincial information resource center for centralized access to current information, tools, and resources. The majority ranked this element as fairly important.

Given that essentially all of the elements were identified as very important, it was necessary to prioritize the list. As such, the percentages associated with a “very important” ranking were sorted in descending order, providing a sense of priority for each element (see below). Question #13, ranked as fairly important by the majority, appeared on the bottom of the priority list regardless of whether the “fairly important” or “very important” percentage was used.

**Table 6: Program Element Interview Results – Interview Participant Ranking**

Question #	% ranked “Very Important”	Question
Q10	89	Provide agencies and health authorities with the information, tools and resources to efficiently implement an effective no-lift policy and ceiling lift program.
Q4	81	Develop and implement standard criteria, guidelines, and policies for client transfer / reposition assessment.
Q7	81	Improve methods to communicate risk between clients, CHWs, clinicians, agency and HA staff.
Q3	80	Adequately resource assessments (i.e. address limits in funding and human resources to complete assessments (and install equipment) before clients are transferred home).
Q5	80	Develop and implement standard practice guidelines that ensure clients receive assessments prior to receiving home support service.
Q1	78	Identify and publicize available funding sources to assist clients with purchasing and installation.
Q8	77	Educate clients, CHWs, agency and HA staff that CHW health and safety is as important as client care.
Q11	77	Provide task specific training to clinicians (e.g. assessing weight bearing status, assessing safety of transfers), and CHWs (e.g. using ceiling lift equipment).
Q2	62	Adequately resource agencies (& CHWs) to use ceiling lifts.
Q9	58	Increase awareness of Occupational Health & Safety responsibilities for CHWs under the Workers Compensation Act.
Q6	56	Identify and publicize current information on: equipment options, with purchase and installation costs, and the benefits of ceiling lifts in homes
Q12	44	Geographic delivery challenges.
Q14	44	Establish Regional Champions coordinate the program in various geographic regions:
Q13	38*	Establish a web-based provincial information resource center for centralized access to current information, tools, and resources.

\*34 % ranked this as fairly important; 38% ranked it as very important

vii) Options to Address Program Elements

Participants were asked to pick the options that they preferred to address each program element.

Table 7 lists the results for each option.

**Table 7: Options to Address Program Elements – Interview Participant Ranking**

Program Element	Option to address element	% selected option
<b>Funding</b>	Q1: Establish interim loan programs	73%
	Q1: Provide a single questionnaire for clinicians to gather the information required for all applications in one visit with client/family (note: training provided on use)	64%
	Q1: Provide a web-based funding source list and flow chart for use, with application information and forms. (ex: what sources to try first, what could apply for each client)	55%
	Q1: Market the resource website to clients/family, CHWs, case managers, clinicians, & agency/program staff. (notes: information packages, brochures, presentations, workshops, newsletters...)	50%
	Q1: Provide information on negotiated package deals	36%
<b>Funding</b>	Q2: Provide guidelines / criteria to determine assignment times that reflect actual time required to transfer with equipment (whole process) (Note: assessment guidelines would require client observation)	76%
	Q2: Promote inclusion of “Time to complete transfer” in hazard ID / reporting process for CHWs and agencies/programs to facilitate reassessment of assignment times if issues are identified	65%
	Q2: Change ministry service delivery guidelines to include appropriate time allotted for ceiling lift equipment use (evidence based)	53%
<b>Standardization</b>	Q4: Provide a list of clear, common criteria (between HA and agency/program) for when a ceiling lift is required and what conditions trigger a reassessment	83%
	Q4: Provide a “red flags” list to CHWs to identify changes in a client, and link to reporting health and safety hazards / risks (forms and education)	79%
	Q4: Provide standard guidelines, policies, and protocols for assessment to clinicians, case managers, and agency/program staff, that is based on observation, has a CHW health and safety focus, and includes time for the task as noted above	75%
	Q4: Provide client education and information packages on when a ceiling lift is required, benefits, client contracts, & limits on service if equipment is refused	75%
	Q4: Provide client contract templates	46%
<b>Standardization</b>	Q5: Provide policies / agreements between HAs and agencies/programs that specify clients are not transferred until risk assessment for CHWs is done, and equipment is either in place or on order, with interim measures implemented	74%
	Q5: Provide template policies with criteria for denial of service until risk assessments for CHWs is complete	68%
	Q5: Provide education on OHS regulation & statutory	58%

Program Element	Option to address element	% selected option
	requirements on risk assessment	
	Q5: Provide criteria / guidelines for interim measures with defined time limits	53%
	Q5: Establish provincial “wait time” limits for adjudication of funding applications	53%
<b>Knowledge Transfer and Communication</b>	Q6: Provide information / education on ceiling lift equipment benefits with messaging targeted to each audience (ex: clients, CHWs, supervisors, agency/program staff, clinicians, case managers etc)	80%
	Q6: Coordinate a web-based information source	60%
<b>Knowledge Transfer and Communication</b>	Q7: Provide a single standardized form (risk/control) to communicate assessment information (risks) and controls (equipment) required in clear, plain language	90%
	Q7: Develop strategies to make risk/control form available and accessible to schedulers, CHWs, agency/program staff	60%
	Q7: Provide a “red flags” list as common criteria that triggers a reassessment to clinicians, case managers, Agency staff, CHWs	60%
	Q7: Provide a standardized form to communicate hazard information from CHW or agency	60%
	Q7: Provide education/training for schedulers on why information is important and strategies to use (via phone, input into web, add to CHW mail file)	45%
<b>Education</b>	Q8: Provide education:	78%
	Q8: Ensure the templates, guidelines, education, information, and resources provided through the ceiling lift program advocate the positive links between CHW safety & quality client care, and support their implementation	72%
	Q8: Change Ministry service delivery requirements - include worker safety in the service delivery mandate	61%
	Q8: Promote use of CHWs & JOHSCs in identification of risks and influencing changes in client care plan	56%
<b>Education</b>	Q10: Provide program tools and the resources identified above to support agencies/programs, CHWs, clinicians, & case managers	100%
	Q10: Provide education on program tools and resources to assist with implementation (including “benefits education”)	67%
	Q10: Provide technical support for implementation	50%
	Q10: Provide information on cost-benefit of ceiling lift equipment (perception and operational)	50%
<b>Training</b>	Q11: Provide training for CHWs in ceiling lift equipment use to increase confidence and efficiency (for both the CHW and the client)	100%
	Q11: Provide training for clinicians	91%

## Discussion

The purpose of this project was to develop and evaluate a model of a home care ceiling lift program for British Columbia. The project resulted in a prioritized list of program elements and options for the development of a Provincial home care ceiling lift program.

Thirty-two stakeholders from all Health Authorities (see Table 2 for a detailed listing) were interviewed to evaluate and prioritize the elements of the program. Table 6 provides a prioritized list of all program elements and Table 7 shows a prioritized list of options. The program options identified in Table 7 have been developed as the basis for a pilot program for implementation of a home care ceiling lift program for British Columbia. Following is a discussion of the top four program elements and the corresponding options that stakeholders identified as being the most effective ways of implementing the program. The other program elements can also be implemented depending on how much funding can be allocated to the program.

a) Critical Program Elements

**Education** was ranked as the most important program element. Specifically stakeholders ranked the element to provide agencies and health with the information, tools and resources to efficiently implement an effective no-lift policy and ceiling lift program as most important. In a pilot program the following option would be developed and implemented to address the educational program element:

- Provide education with targeted messaging on benefits of ceiling lift equipment for CHWs, JOHSC, all agency/program staff, case managers, clinicians, and clients.

**Standardization** was ranked as the second most important program element. Specifically stakeholders ranked the element to develop and implement standard criteria, guidelines, and policies for client transfer/repositioning assessment as a priority. Four of the five options given to address standardization were ranked as a preferred option by more than 75% of stakeholders interviewed. In a pilot program the following options would be developed and implemented to address the standardization program elements:

- Provide a list of clear, common criteria (between HA and agency/program) for when a ceiling lift is required and what conditions trigger a reassessment.
- Provide a “red flags” list to CHWs to identify changes in a client, and link to reporting health and safety hazards / risks (forms and education).

- Provide standard guidelines, policies, and protocols for assessment to clinicians, case managers, and agency/program staff that are based on observation, has a CHW health and safety focus, and includes time for the task as noted above.
- Provide client education and information packages on when a ceiling lift is required, benefits, client contracts, & limits on service if equipment is refused.

**Knowledge Transfer and Communication** was ranked as the third most important program element. Specifically stakeholders ranked the element to improve methods to communicate risk between clients, CHWs, clinicians, agency and HA staff as a priority. In a pilot program the following option would be developed and implemented to address to knowledge transfer and communication program element:

- Provide a single standardized form (risk/control) to communicate assessment information (risks) and controls (equipment) required in clear plain language.

It is of interest to note that the **top 3 priority elements of education, standardization knowledge transfer and communication**, and their corresponding options are about the development of **practical tools** that can be easily disseminated to and **used by the front line workers** directly.

**Funding** is the fourth priority element. Specifically stakeholders ranked the element to adequately resource assessments (i.e. address limits in funding and human resources to complete assessments and install equipment before clients are transferred home) as a priority.

Clinicians were repeatedly identified as the person responsible for securing funding for a client. Clinicians themselves commented that the funding sources were available and known among the professional groups. They indicated that a good portion of their clinical assessment time was spent in finding and completing funding applications, leaving less time to complete assessments or re-assessments.

Equipment cost is often offered as the main barrier to clients having ceiling lifts in their homes. It was identified in the literature as a challenge to be overcome; however, previous studies have demonstrated slow adoption of lift equipment that was offered free of charge. In addition, clients were not identified as a group that would independently find or apply for funding, or have the skill set to effectively navigate or advocate through the application processes.

#### b) Existing Program Elements

Interview participants indicated that some processes and procedures were in place in different health authorities to address individual components of a ceiling lift or ergonomics program. Participants identified unique tools and guidelines for identifying and assessing situations where ceiling lifts were required, however they were not comprehensive or standardized for the province. Each recognized these as an important step in the process, in addition to effective communication, as suggested by the top 5 elements of the program being related to standardized tools, guidelines, processes, and communication strategies. It is suggested that the tools already developed in some health authorities be assessed for potential use as templates for a provincial program.

#### c) Operational Considerations in Implementation of a Program

A number of system complexities were identified during the study, shown for example by the number of interviewee categories and the challenges found in establishing who played a key role in the process. In addition, roles were not unique. Responsibilities for various steps in the process were depended on the service delivery model or how a client was referred to home support. For example, in some situations a single individual was responsible for case management, and another was responsible for rehabilitation assessments. In other situations, one person was responsible for both.

Funding more clinicians to complete assessments would address barriers such as time delays in having assessments performed, as well as delays in completing the application process. Finding ways to improve the efficiency of the funding acquisition process would also address this issue, freeing up precious clinician time to complete assessments.

Publicizing funding sources was ranked in the top 10. Comments indicated that this element or option would be best directed at clinicians, rather than clients, for the reasons indicated above. Concerns were raised as to how the site would be kept current, and whether it would be effective for clinicians. While each clinician had a set of funding sources he/she used regularly, it appeared that each had sources unique to the other. A simple, easy to use website could provide new clinicians with resources not readily known it could also provide a forum for sharing forum between clinicians. Long term, a website could also be used to increase application efficiency through ready to use template forms, and online applications, as well as a centralized resource for used equipment sales or equipment recycling.

In conclusion, overhead lifts have previously been shown to be cost-effective in reducing injuries to healthcare workers, yet despite the growing importance of homecare, these devices have not been widely used. This study identified the key elements of a program that would meet stakeholder needs, as well as indicators of a successful program. Such a program should now be implemented and rigorously evaluated.

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## Appendix I – Issues Identification

The following report identifies the issues associated with ceiling lifts in the home environment. To better delineate these issues, the report has been divided into three distinct sections. The first section presents findings on the psychological aspects of assistive device use or non-use. It should be noted that because the psychological aspects surrounding mechanical lifts (and in particular ceiling lifts) are a relatively new topic in the research realm, little research was found that directly investigated this area. Consequently, the issues identified under this topic area focus more on general assistive devices. It is felt that the issues presented in this section are applicable to mechanical lifting devices. The second section of the report presents issues as it pertains to Community Health Workers (CHW), Occupational Therapists (OTs), Home Support Agencies, Health Authorities (HA) and Ergonomics. The third section presents issues relating to existing models for delivery of ceiling lifts.

Sections one and two are formatted to first present the area of research (i.e. psychological issues, agency, OT, CHW issues, etc); the key issue is then highlighted (e.g. Needs Factors), followed by a summary of the literature under that topic area. Section three is formatted differently in that it first presents the issue summary followed by a discussion of these issues; finally, a presentation of “benchmark models” is highlighted. References complete each section.

### *Psychological Issues:*

*The following section has been organized to present the psychological issues of four key stakeholder groups: The client, the informal caregiver, the healthcare professional and management. There are findings presented herein that do not necessarily fall under “psychological issues” but are applicable to the particular stakeholder group and are thus identified.*

### The Client (i.e. senior)

**Area of research:** Psychology

**Key issue #1:** Need Factors

**Issue summary:**

- According to the literature, one of the most important factors to assure device usage (or non-usage) is the *perceived need* for a device(s). Thus, those patients who believe their disability is not severe enough, or they simply do not believe they need a device will be less likely to use the device(s). (Mann et al, 2002; Kane et al, 2001; Naik and Gill, 2005; McCreddie and Tinker, 2005; Gitlin et al, 1993 (cited in Kraskowsky and Finlayson, 2001); Tomita et al, 2004; Hartke et al., 1998; Paris et al, 200?).
- Intention to use the device is also a key predictor of device usage/non-usage. Researchers have found that the expectation to use a device(s) (e.g. while hospitalized) was a predictor of actual home usage (Gitlin et al, 1996; Roelands et al., 2002).

- The likelihood of device useage increases with age and disability levels (particularly chronic versus acute conditions) (Naik et al, 2005; McCreadie and Tinker, 2005; Tomita et al, 2004; Agree et al, 2004; Hartke et al., 1998; Edwards and Jones, 1998, Sonn, 1996, Finlayson and Havixbeck, 1992 (all three cited in Kraskowsky and Finlayson, 2001).

**Area of research:** Psychology

**Key issue #2:** Demographic Variables

**Issue summary:**

- Increased age, living alone, lower income and education are found to be significantly associated with device useage (Hartke et al., 1998; Edwards and Jones, 1998 and Sonn, 1996 (both cited in Kraskowsky and Finlayson, 2001).

**Area of research:** Psychology

**Key issue #3:** The Device(s)

**Issue summary:**

- The most commonly identified reasons for non-use of assistive devices include:
  - unsuitability of the aid (Mann et al, 2002; Finlayson and Havixbeck, 1992, Gitlin et al, 1993, and Parker and Thorslund, 1991 (all three cited in Kraskowsky and Finlayson, 2001).
  - rejection of the aid due to such factors such as too cumbersome, too time consuming, unwanted attention to the client (Mann et al, 2002; Finlayson and Havixbeck, 1992, Gitlin et al, 1993, and Sonn, 1996 (all three cited in Kraskowsky and Finlayson, 2001).
  - ease of use (Edwards et al., 2003; Harootyan, 1995);
  - device-environment fit (i.e. how well does the device fit/work in the design of the home and policies of landlords) (McCreadie and Tinker, 2005; Edwards, et al., 2003; Silverstein et al., 2006; Finlayson and Havixbeck, 1992, Gitlin et al, 1993, and Stowe et al., 1982 (all three cited in Kraskowsky and Finlayson, 2001);).
- Availability and cost of the device (i.e. is it easy to locate and affordable?) is linked with useage (McCreadie and Tinker, 2005; Harootyan, 1995; Silverstein et al., 2006).
- Clients' perceived indignity, discomfort and lack of safety have been cited as a barrier to using mechanical lifts (Paris et al, 200?).

### **The Informal Caregiver**

**Area of research:** Psychology

**Key issue #4:** Perceptions of the caregiver

**Issue summary:**

- Perceived need of a device(s) and early involvement in choosing the device(s) by the caregiver has been found to be positively associated with device useage in the client (Chen et al, 2000; Kane et al, 2001).

## **The Health Professional: Nurses, Home support workers**

**Area of research:** Psychology

**Key issue #4:** Perceptions of healthcare providers about mechanical lifts

**Issue summary:**

- A key barrier identified in the non-use of mechanical lifts is the perception held by healthcare staff (e.g. nurses) that patients have an aversion to the equipment. According to the literature, a key reason for not using mechanical lifts is because staff feel the patients do not prefer it, they feel unsafe and/or uncomfortable (Nelson et al., 2003; Bogue, 2001; Owen, 2000; Garg et al., 1992; Nelson and Baptiste, 2004; McGuire et al., 1996).
- Another key barrier cited by numerous researchers is the belief by healthcare staff that using mechanical lifts is too time consuming (McGuire and Deware, 1993 (cited in Moody et al., 1996); Moody et al., 1996; Li et al, 2004; Silverstein et al., 2006; Rush, 2004; Daynard et al., 2001 (cited in Pellino et al., 2006); Garg et al., 1991; Engst et al., 2005; Owen, 2000; Bogue, 2001; Nelson, et al., 2003).
- Mechanical lifts were perceived to be unstable or unsafe to use for some (Owen, 2000; Bogue, 2001; Nelson and Baptiste, 2004).
- Lack of perceived need or suitability by the professional has also been identified as a key barrier (Li et al, 2004; McGuire et al., 1996; Evanoff et al., 2003 (cited in Pellino et al., 2006); McGuire and Dewar, 1993 (cited in Moody et al., 1996)

**Area of research:** Health Professionals

**Key issue #5:** Other barriers to mechanical lifts

**Issue summary:**

- Lack of training in using mechanical lifts has been found by Cowan and Turner-Smith, 1999 (cited in Rush, A, 2004); Moody et al, 1996; Evanoff et al, 2003; Nelson and Baptiste, 2004; Bogue, 2001 as a key barrier to useage
- Lack of spatial requirements to use the lift was found by Nelson and Baptiste, 2004; Hignett and Evans, 2006; Moody et al., 1996; Bogue, 2001.

## **Management**

**Area of research:** Management

**Key issue #6:** Policy Issues

**Issue summary:**

- Lack of universal understanding of what a “No Lift” policy means was found by Silverstein et al., 2006, thus making it difficult to implement.
- Lack of consistent or standardized No lift policies across regions (Silverstein et al., 2006).
- Lack of voluntary measures taken by the US healthcare industry to reduce patient handling by use of mechanical equipment (Edlich et al., 2005).
- Outdated patient handling techniques (e.g. manual handling and lifting techniques) still being taught to nursing students (Silverstein et al., 2006).
- No lift policies have been found to have failed in the US due to hospitals overlooking technological components such as lifting devices (Edlich et al., 2004; Nelson et al., 2003) and

opponents fighting standards that implement ergonomic control (i.e. lifting devices) because it would remove the human touch from nursing care (Trossman, 2000).

**Area of research:** Management

**Key issue #7:** Management support

**Issue summary:**

- Researchers have found that employees were more likely to see the benefits of equipment use than the administrators themselves (Silverstein et al., 2006)
- Lack of management support of mechanical lift interventions was found by Daynard et al., 2001 (cited in Pellino et al., 2006).
- Lack of knowledge of how much back pain and injury in healthcare providers actually cost the institution was found by McGuire et al., 1997 thus influencing the financial provision (or lack there of) towards mechanical aids.

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## *Agency, Clinical (e.g. OT) and Ergonomic Issues*

**Area of research:** agency / OT / HA

**Key issue #1: geography**

**Issue summary:**

- Both the IHA Project and the NSW Project identified key challenges for rural areas including: increased product costs, more time / travel distances / expense for OTs, HCC teams, contractors, and equipment providers, the lack staff or OTs in some areas, and the cost for private OTs (Bridge and Martindale 2002; Brims 2006).
- Findings in other literature concluded that living in a non-metropolitan area impeded the use of equipment as part of the care arrangement (Agree, Freedman et al. 2004), that those living in urban areas are more receptive to new technologies (Zimmer and Chappell 1999), and that those in rural areas have access to a smaller number and narrower range of in-home services (Grabbe, Demi et al. 1995)

**Area of research:** agency / HA

**Key issue #2: limits of equipment loan programs**

**Issue summary:**

- The IHA ACCESS Project report commented that loan programs require resources to purchase equipment, and also identified barriers with other equipment loan programs such as: equipment that was not well inventoried and poor record keeping about maintenance or liability contracts, as well as storage and coordination issues (Brims 2006).
- Budget issues were identified for equipment loan services, as well as inability to rent lift devices (Hempel 1993; Silverstein, Howard et al. 2006)

**Area of research:** agency / HA

**Key Issue #3: inability to enforce regulation (home = workplace)**

**Issue summary:**

- As reported by IHA, health authorities in BC are not in a position to insist that a client purchase recommended equipment. The authority provides the care givers (as determined through ministry assessment of health needs and finances), but not the equipment to give care. In BC, clients are fully responsible for equipment and supply costs unless 3<sup>rd</sup> party funding is available (Brims 2006).
- In IHA, new risk assessment tools discouraged the use of two CHWs to assist a totally dependant client as a safe or acceptable solution (Brims 2006).
- The challenges of imposing regulation in a person's private home is also noted in (Dellve, Lagerstrom et al. 2003; OHSAH 2005; Silverstein, Howard et al. 2006)

**Area of research:** CHW

**Key Issue #4: lack of authority**

**Issue summary:**

- The IHA ACCESS project determined that CHWs lack the authority to address risks and make or recommend timely changes, and that they sensed a reluctance amongst clinical staff and managers to modify care plans even when risks were identified (Brims 2006).

**Area of research:** CHW / OT / Agency

**Key Issue #5: communication between HCC team**

**Issue summary:**

- The HCC environment poses significant challenges to communicate risks to everyone on a client's home care team. Several studies identified issues such as:
  - assessment information from skilled assessors being provided to agencies through case managers or social workers (Silverstein, Howard et al. 2006)
  - the lack of avenues for CHWs to access client risk and health information (no written, no email access, inaccuracies through voice mail) and report changes in client conditions, or share information with other CHWs who work with the same client (Baron and Habes 2004; Brims 2006)
  - assessments written in a discipline's language (ie: OT jargon) making them difficult to follow or to observe condition changes that require reassessment (Brims 2006).

**Area of research:** CHW / Agency

**Key Issue #6: lack of specific contract / terms of service with clients**

**Issue summary:**

- Several studies recommended written agreements or contracts with clients – outlining boundaries agreed to and clearly specifying tasks and procedures, to help when requests for unauthorized or unsafe services are made to CHWs (Hempel 1993; Baron and Habes 2004; Knibbe and Knibbe 2005; Brims 2006).
- Other literature recommends clarifying with clients and families that staff are required to follow agency transfer policies (Sitzman and Bloswick 2002) and that (Cohen 1998) policies clarify that patients do not have the right to cause injury by refusing to use equipment (hoists).

**Area of research:** OT

**Key Issue #7: challenge to separate therapy goals from care needs**

**Issue summary:**

- In the IHA ACCESS Project, ethical issues were identified for OTs and PTs in the community who were challenged to separate personal care activities from therapy goals when transfers were complex (Brims 2006). It was suggested that OTs and PTs need to assess the true physical benefit to clients.
- Clinicians and CHWs were challenged to maintain as much independence as possible for clients, even if high risk, making a recommendation for mechanical transfer equipment difficult to negotiate (Brims 2006).

**Area of research:** Agency / OT

**Key Issue #8: perception of client centered care over CHW safety**

**Issue summary:**

- The IHA ACCESS Project identified a perception that “client – centered” care meant that client wishes were primary over CHW safety; a perception driven by demand from “informed patients”, families, and government performance measures (Brims 2006).
- CHWs participating in the ACCESS Project identified supervisor / clinician reluctance to modify care plans, leaving them a choice between a high risk task or the risk of losing client hours (Harter 2003, CEDCO 2002 referenced in (Brims 2006).

- Similar perceptions were identified in the NIOSH study where one participating agency indicated that they are expected to provide assistance by contract or their referral service (Silverstein, Howard et al. 2006).

**Area of research:** Agency / OT

**Key Issue #9: limited options when there is a lack of equipment**

**Issue summary:**

- The IHA ACCESS Report suggested that modifying care plans was a more acceptable option with HCC staff and clients vs. complete service withdrawal (Brims 2006).
- Of the administrators faced with lack of equipment in homes, some suggested limiting service while others stated that safe alternatives could be applied, or equipment needs could be strongly suggested – but beyond that they were unable to do anything. Successes included supervisors empowered to limit care if equipment conditions not met (Silverstein, Howard et al. 2006).

**Area of research:** OT / Clinician

**Key Issue #10: unaware of role as legal supervisor**

**Issue summary:**

- The IHA Access project (Brims 2006) identified differing knowledge and attitudes amongst clinicians who did not:
  - understand their role as a legal supervisor (WC Act) - directing CHWs in the safe performance of their duties through care plan recommendations
  - feel assessment forms contributed to staff safety, and didn't believe the forms were part of their responsibility
  - fully understand the employers need to identify and communicate risks to staff entering homes.
- OTs participating in the NSW study indicated that consideration of home care workers needs as part of OH&S requirements was a novel concept – and that equipment recommendations were for specifically for clients (Bridge and Martindale 2002).

**Area of research:** CHW / Agency / OT

**Key Issue #11: willingness to accept risk**

**Issue summary:**

- In the IHA ACCESS Project, CHWs revealed a willingness to place themselves at risk to meet care plan expectations and time constraints. A lack of background education appeared to produce CHWs who were not consistently assertive with clinicians or clients about safety concerns (Brims 2006).
- In the BCIT Lift Study (Paris, Yassi et al. 2006), only one in five CHWs would explain to clients that use of a lift device “was safer for the CHW”.
- The majority of CHWs participating in NIOSH focus groups were not aware of their rights under workers compensation (Baron and Habes 2004).
- Other literature suggests a shift in the traditional willingness (of HC nurses) to go into homes and do what ever is required despite the risk to themselves, and that there is support to refuse unsafe lifting, and withdraw service if clients refuse equipment (Hempel 1993; Cohen 1998).

**Area of research:** CHW / Agency / OT

**Key Issue #12:** lack of awareness/knowledge of equipment and how to acquire

**Issue summary:**

CHWs

- In the NIOSH study, few CHWs had used mechanical lift devices, and the majority was unaware of even basic devices (Baron and Habes 2004).
- Both the NIOSH and Washington state study recommended educating CHWs on equipment uses and how to access services for clients with ergonomic challenges (and clients: funding options, resource lists); also suggesting that CHWs can be a source of information to clients on assist devices (Baron and Habes 2004) (Sitzman and Bloswick 2002).

OT / Clinicians / Health professionals

- Fraser Health identified the challenge of ensuring OTs know about the resources and equipment available to home care clients (personal communication Deanna Harrison, December 2006).
- According to the literature, promoting assistive technology is a recommended strategy (Woodward, Ableson et al. 2001) to improve working conditions for care givers in the home care sector, and to support a client's choice to remain at home (Brims 2006).
- Lack of familiarity with equipment is demonstrated in the literature to be a cause of not recommending or using mechanical or assistive devices (Moody 1996, referenced in (Brims 2006).
- Several studies commented that some clinicians and healthcare professionals may have little practical experience with new mechanical or assistive devices and may not keep up with the latest equipment available – relying on the familiar or traditional (rather than newer devices that are more practical for home use) (van Kuyk-Minis 1998; Bridge and Martindale 2002; Silverstein, Howard et al. 2006; Brims 2006).

**Area of research:** CHW

**Key Issue #13:** lack of training to understand of risks / pre transfer assessment

**Issue summary:**

- Literature suggests training CHWs to understand the limits of their jobs, to understand the risks involved, to assess clients before each transfer (less reliance on assessments alone), to think about their safety first, and to know alternatives such as equipment (Hempel 1993; Jarrell 1997; Cohen 1998; Paris-Seeley and Raschke 2002; Sitzman and Bloswick 2002; Baron and Habes 2004; Silverstein, Howard et al. 2006).
- A review of the CHW program curriculum revealed a lack of instruction / guidelines for assessing a client's ability to weight bear and provided few tools to assess the client at the time of transfer (Brims 2006).

**Area of research:** CHW / Agency / OT

**Key Issue #14:** lack of training on device use

**Issue summary:**

- Studies in long term care identified a lack of staff knowledge/experience/training as a barrier to using floor lift equipment (Owen 1988; Evanoff, Wolf et al. 2003; Owen and Staehler 2003; Brims 2006) (Garg et al 1992a referenced in(Brims 2006)).

**Area of Research:** Agency / OT / HA

**Key Issue #15: lacking initial (or timely initial) client assessments**

**Issue summary:**

- According to the literature, while effective home assessments (with training) were an important factor in the adoption of devices (Agree, Freedman et al. 2004) there was a there was a lack of comprehensive and unilateral assessments (Bridge and Martindale 2002) or an assumption that if equipment was required it would already be present (Silverstein, Howard et al. 2006).
- In addition, ill-planned discharges or lack of assessment meant that clients were sent home without services, equipment, supplies or information on what's needed (Hempel 1993; Cohen 1998; Weaver, Perloff et al. 1998).
- Various studies recommended that assessments be completed by prior to provision of service (Waters; Knibbe and Knibbe 2005), that periodic reassessments be completed (Jarrell 1997; Sitzman and Bloswick 2002), and that nursing managers and therapists emphasize evaluating the need for assistive devices, and the environment, relative to worker safety (Owen and Staehler 2003).

**Area of research:** agency / OT

**Key Issue #16: lack of client participation in assessments**

**Issue summary:**

- The IHA ACCESS report noted that assessment of clients abilities was completed through file review or discussion with client or family, rather than demonstration, resulting in lack of needed equipment, time for tasks, or inadequate assessment of risks (Brims 2006).
- Literature reported home assessments being completed with out patients being present (Patterson et al 2001referenced in (Barras 2005).

**Area of research:** agency / OT

**Key Issue #17: lack of knowledge to complete assessments**

**Issue summary:**

- Both the IHA and NIOSH projects found that the staff assigned to assess a client's equipment needs or transfer abilities felt they did not have training or a strong background to do so (Baron and Habes 2004; Brims 2006).
- A Belgium study suggested supportive interventions such as education and clinical practice guidelines focus on skills for nurses to implement assistive devices they've assessed, and would provide consistency between assessors (Roelands, Van Oost et al. 2006).

**Area of research:** agency / OT

**Key Issue 18#: lack of consistency in who does assessments**

**Issue summary:**

- Literature identifies a range of professionals who can complete assessments for equipment, each with a different focus and with a different understanding of the others needs: social

workers (Cohen 1998), skilled staff such as OTs, PTs, nurses, (Bridge and Martindale 2002; Lilja, Bergh et al. 2003; Silverstein, Howard et al. 2006), building contractors (Bridge and Martindale 2002), and equipment providers (Baron and Habes 2004).

- In the literature review, (Barras 2005) identified a core set of people present during an assessment, with variations depending on location, hospital size, and whether the community or home completed the assessment.

**Area of research:** CHW / Agency / OT

**Key Issue #19: lack of clear or consistent assessment guidelines or policies**

**Issue summary:**

- The IHA ACCESS Project identified no consistent philosophy of how much information or what format was needed for CHWs, in addition to an absence of standard forms or guidelines. Chart review showed that a range of mobility assessment tools were used to assess clients, but that they were not used in their entirety (Brims 2006).
- (Barras 2005) also found no consistent assessment tool identified across the papers reviewed.
- Studies recommend the use of standardized indication criteria necessitating equipment, and to ensure handling practices are clear, standard, and current, including service withdrawal procedures (Sitzman and Bloswick 2002; Knibbe and Knibbe 2005) and no-lift policies (to reduce fears of arbitrary decision making) (Milburn 2005).

**Area of research:** agency

**Key Issue #20: assessment costs**

**Issue summary:**

- Focus groups in New South Wales commented on the impact of having to purchase private OTs for assessments, an unanticipated budget item (Bridge and Martindale 2002).
- (Weaver, Perloff et al. 1998) stated that the agency in their study completed assessments for complex cases and absorbs the associated cost.

**Area of research:** CHW / agency

**Key Issue #21: equipment costs**

**Issue summary:**

- IHA identified varied political views on client's covering equipment costs – leading to clinician reluctance in approaching clients to acquire recommended equipment, or pursuing the option if clients report being unable to afford it (Brims 2006).
- In other studies, CHWs and agency staff recognized device expense as a barrier to implementation (whether low income clients, or clients refusing to purchase equipment or even be means tested) (Baron and Habes 2004; Heacock, Paris-Seeley et al. 2004; Paris, Yassi et al. 2006).

**Area of research:** ergonomics / OT

**Key issue #22: lack of equipment for rent or trial**

**Issue summary:**

- (Hempel 1993; Silverstein, Howard et al. 2006) identified an inability to rent lift devices in the absence of short term loans.

- The IHA ACCESS Project assembled repositioning and sling trial kits for clients to test products before purchase. The kits increased efficiency for rural or remote clients / OTs to find the best option prior to purchase (also reducing costs for client) (Brims 2006).

**Area of research:** clinician / OT / agency / CHW

**Key Issue #23: lack of team approach when negotiating with clients**

**Issue summary:**

- Clinicians in the IHA ACCESS Project reported feeling solely responsible for persuading clients to acquire funding rather than using the HCC team to further negotiate with a client. If clinicians are unable to negotiate agreement on a care plan modification for HCC staff safety, discussion with the manager and other team members is important (Brims 2006).
- The report also recommended using CHWs in negotiation with clients to promote consistency and demonstrate the importance of the CHW-client relationship.

**Area of research:** Agency

**Key Issue #24: delays in equipment delivery/installation**

**Issue summary:**

- Literature identified challenges with long delivery times (Hempel 1993) (Silverstein, Howard et al. 2006) and waitlists (Age Concern report referenced in (Cohen 1998) for assessments or due budget constraints (Baron and Habes 2004).
- (Milburn 2005) recommended employment of OTs to provide prompt follow-up on provision of safety aides and equipment before commencement of services.

**Area of research:** agency

**Key Issue #25: perception of operational impact**

**Issue summary:**

- In the NIOSH study, some agency administrators were not entirely convinced that lift use would decrease injuries (Silverstein, Howard et al. 2006) and also believed that devices would require two people to use; also identified with floor lifts in long term care (Owen 1988).

**Area of research:** ergonomics

**Key Issue #26: homes not designed for equipment installation / rentals**

**Issue summary:**

- Researchers found respondents had a limited ability to modify their homes (including lift installation) due to disability, cost, or rental prohibitions. Also noted was the lack of national or provincial housing standards for home care (McKeever, Scott et al. 2006).
- The IHA ACCESS Project and the NIOSH study indicated that many homes were unsuitable for ceiling lifts due to structural limitations (Silverstein, Howard et al. 2006; Brims 2006).
- Successful implementation of recommendations (ex. assistive device by OT) is dependent on the feasibility of environmental modification (Oliver, Chiu et al. 2003).

**Area of research:** ergonomics

**Key Issue #27: equipment not designed for home use**

**Issue summary:**

- Heacock et al. stated that commercial lift devices designed for institutional use were often inappropriate for home use (Heacock, Paris-Seeley et al. 2004; Paris, Yassi et al. 2006).
- Hempel and Cohen interviewed staff who indicated that equipment is not designed for home use (Hempel 1993; Cohen 1998).

**Area of research:** ergonomics / CHW / agency / OT

**Key Issue #28: perception of device limitations**

**Issue summary:**

According to the literature, barriers to using patient handling devices (floor lifts in LTC more than ceiling) includes:

- poor maintenance and cleaning (identified in literature from (Nelson, Lloyd et al. 2003))
- hoists weight limits (Owen 1988; Nelson 2001)
- space issues for storage and use (Owen 1988; Evanoff, Wolf et al. 2003; Silverstein, Howard et al. 2006) (Garg et. al 1992, referenced in (Brims 2006))

**Area of research:** Agency / CHW / OT

**Key issue #29: low perception of risk / perceived lack of need for lifts**

**Issue summary:**

- Caregivers believed they were unlikely or very unlikely to incur long-term illness or injury as a result of performing their work (Silverstein, Howard et al. 2006).
- The IHA ACCESS Report stated that despite the high rating of perceived effort and injury causation, the CHW care actions are often perceived by clinicians or managers as lower-skill tasks or routine actions that can be delegated without instruction (Brims 2006).
- Nurses and Nursing aides in LTC identified a perceived lack of need for lifts as a reason for non use (Evanoff, Wolf et al. 2003) and (Silverstein, Howard et al. 2006) indicated that there may also be a perceived lack of usefulness of “luxury” items such as sit-stand lifts (not seen as medically necessary).

**Area of research:** CHW / ergonomics

**Key Issue #30: perception devices difficult to use**

**Issue summary:**

- Caregivers indicated devices may be somewhat hard to use (Silverstein, Howard et al. 2006), and there is a perception that hoists are cumbersome or physically demanding to use (Parsons, Galinsky et al. 2006).
- Literature referenced in (Evanoff, Wolf et al. 2003) stated that studies in LTC also identified the perceived physical effort to use some aids as a barrier to use (Garg et. al 1992, referenced in (Brims 2006)).

**Area of research:** agency / CHW

**Key Issue #31: perception of client preferences/impact**

**Issue summary:**

- Literature identified CHW and agency perception of client preferences (aversion, reluctance, fear, refusal) (Owen 1988; Hempel 1993; Yassi, Cooper et al. 2001; Nelson and Baptiste 2004) or that the devices (floor lifts in LTC) would be uncomfortable or increase client pain (Evanoff, Wolf et al. 2003) as barriers to use.

- According to the IHA ACCESS Report, literature supports promotion of transfer techniques based on preference, not evidence (references in (Brims 2006)).

**Area of research:** agency / CHW

**Key Issue #32:** time constraints / time to use

**Issue summary:**

- Literature indicates use of lift devices (floor/ceiling/"hoists") depended on time pressures. Perception from CHWs and agencies (in LTC and home care) is that lift equipment takes more time to use, and that avoiding use, even for demanding and unhelpful clients, would save time. (Owen 1988; Brulin, Winkvist et al. 2000; Evanoff, Wolf et al. 2003; Nelson, Lloyd et al. 2003; Heacock, Paris-Seeley et al. 2004; Nelson and Baptiste 2004; Silverstein, Howard et al. 2006; Paris, Yassi et al. 2006; Parsons, Galinsky et al. 2006) (Garg et. al 1992, referenced in (Brims 2006))
- Heacock et al. found that while the additional time required for transferring was statistically significant, the actual amount of time was insignificant, especially in the home care context of a few transfers per visit compared to consequence of MSI (Heacock, Paris-Seeley et al. 2004)

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## ***Existing Ceiling Lift Models***

### ***Issue Summary***

Five main issue themes emerged around existing models for delivery of ceiling lifts (or similar assistive technology):

1. Existence of funding sources,
2. Caregiver and client knowledge of funding sources and available technologies,
3. Differences/challenges in informal caregiver's ability to provide care,
4. Level of responsibility of a client's OT or other professional caregiver' to prescribe assistive technology, and
5. Difficulty in recruitment of home-based caregivers, particularly in rural areas.

An additional issue regarding program sustainability was also noted.

In general, obtaining a ceiling lift in BC progresses along the following series of questions:

1. Is someone able to determine the need for ceiling lift, professionally or informally,
2. Is there money available for a obtaining and installing ceiling lift,
3. If there is funding, does the client, informal caregiver or OT know about it,
4. Is the client, OT or other caregivers fully aware of all funding and technology options, and
5. Are appropriate caregivers, formal and informal, available to assist the client in utilizing the technology?

Based on the current system in BC, and a review of international models, one major overarching issue for BC is the lack of an integrated/comprehensive information source for assistance with understanding the range of devices and financial assistance available. The major difference between the current BC system, and successful Canadian and International models, is the lack of a comprehensive information and support centre for assistive devices.

### **Key Issue #1: Potential Funding Sources for Ceiling Lifts**

- 1.1 12 potential categories (up to 18 sources) for funding ceiling lifts
- 1.2 Large range of domestic and international benchmarks for funding, from fully self/family funded to fully paid
- 1.3 Complex funding application processes
- 1.4 No provincial-level coordination in assistance to obtain funding

### **Key Issue #2: Client and Caregiver Knowledge of available funding and technologies**

- 2.1 Incomplete knowledge with clients of funding sources
- 2.2 Incomplete knowledge with clients and caregivers for technological options
- 2.3 Incomplete knowledge with caregivers (incl. OTs) of all funding sources

### **Key Issue #3: Recruitment of Caregivers**

- 3.1 Challenging to recruit and retain home-based caregivers, particularly in rural areas.

- 3.2 Suggested supporting the development stronger community groups to help link up clients and potential caregivers and for support.
- 3.3 High staff turnover effecting perceived quality of care.

#### **Key Issue #4: OTs Role in Obtaining Ceiling Lifts**

4.1 In BC, OTs both prescribe the need for a ceiling lift and are involved in obtaining lift equipment; role is not formalized or optimized to assist clients in obtaining funding

#### **Key Issue #5: Informal Caregiver's Ability to Provide Care**

- 5.1 Informal caregiver's often uninformed about and/or confused when navigating formal programs and services available to them.
- 5.2 Assistance may only be sought by informal caregivers after a crisis –point reached.
- 5.3 Caregiver time and/or skill requirements particularly high for technology-dependent children and for certain disease groups (e.g., ALS).

#### **Key Issue #6: Program Sustainability**

- Any new program will have to meet BC Ministry of Health and/or BC Ministry of Employment and Income assistance sustainability requirements

#### ***Issue Discussion***

#### **Key Issue #1: Obtaining Funding for Ceiling Lifts**

##### Issue Summary:

##### A) Funding Models in British Columbia

Funding for ceiling lifts is available in British Columbia; however there is no coordination between funders and no coordinated provincial effort to assist people with disabilities in obtaining funding for ceiling lift equipment. At least 12 potential organizations or categories of funding in British Columbia have been identified for ceiling lifts (Interior Health Authority, 2005). The ACCESS program currently being conducted by Interior Health is the first inter-health authority coordinated effort to list funding sources to provide clinical and occupational health workers with assistance in obtaining funding (Interior Health Authority, 2005). The Sources of Funding manual developed by Interior Health could very easily be used as a template for a provincial-level (or National) funding information resource. Depending on the condition necessitating the need for a lift, and charitable donations available at the time, 6 to 7 disability societies may be able to assist with partial funding of lift technology (PEADC 2004).

Equipment loan programs for ceiling lifts are also available (ALS BC 2007; Canadian Red Cross 2007).

Knowledge of all potential funding sources and types of equipment low among clients and caregivers (CMCH 2006).

##### Issue Summary:

- At least 12 to 18 funding sources exist in BC, including disease specific and charitable organizations.
- Information about and access to funding sources are uncoordinated on a provincial level.
- Equipment loan programs are available (i.e., vs. funding loans for equipment).

- A template exists for developing a provincial level source of funding manual.

## B) International Funding Models

There are at least 13 types of funding sources for home modification with assistive equipment, which includes ceiling lifts, being used internationally:

- 1) Equipment loan programs (e.g., North Carolina Assistive Technology Consortium)
- 2) Qualified Funding loan programs (i.e., low cost loans for low incomes) (Wallace, et.al., 2000)
- 3) Capped direct funding (e.g., US Medicare; Freedman, et.al. 2005))
- 4) Government employment program funding (Carlson and Ehrlich 2006)
- 5) Ministries or Departments of Health (Stead, 2002)
- 6) Health Authorities (Stead 2002)
- 7) Workers Compensation/Rehab (Carlson and Ehrlich 2006)
- 8) Veterans Administrations (Carlson and Ehrlich 2006)
- 9) Government funded insurance (Makigami and Pynoos, 2002)
- 10) Extended Private Health Insurance (Carlson and Ehrlich 2006)
- 11) Disability Societies
- 12) Service Clubs
- 13) Personal/family out-of-pocket funding (including assistance trusts).

### Issue Summary:

- At least 14 methods or models of funding are being used to fund assistive technology like ceiling lifts internationally.
- Funding efforts range from coordinated assistance (e.g., Netherlands; Algera, et.al 2003) to uncoordinated (e.g., United Kingdom; Stead 2002).

## Key Issue #2: Client and Caregiver Knowledge of available funding and technologies

### U.S.

- Client lack of information about technologies available on the market (Freedman, et. al. 2005)
- Client perceived lack of funding sources (Freedman, et.al. 2005)
- Health care provider lack of knowledge and experience with implementing and managing assistive technology interventions (Freedman, et.al. 2005)

## Key Issue #3: Recruitment of Caregivers

Rural assistive service delivery challenging; issues included (Ireland (McCann, et.al. 2005):

- Difficulty in locating and recruiting professional caregivers
  - Lack of choice in caregivers
  - Travel time for caregivers
  - Greater resources required in rural areas for equivalent urban service delivery
- High staff turnover in home care a problem for quality of care (Wiles 2003); e.g., hard to form relationships with large number of caregivers per week (Wiles 2003; CMHC 2006).

### Issue Summary

- Challenging to recruit and retain home-based caregivers, particularly in rural areas.
- Suggested supporting the development stronger community groups to help link up clients and potential caregivers and for support.

- High staff turnover effecting perceived quality of care.

#### **Key Issue #4: OTs Role in Obtaining Ceiling Lifts**

In BC, OTs play a critical role in both prescribing assistive technology like ceiling lifts and also assisting clients in obtaining the technology. Netherlands model described below shows that need assessment and delivery of an assistive technology or service can be separated.

Netherlands (Algera, et.al. 2003)

- Interesting case study: Netherlands changed from a system where the assessment of need and actual care giving have been separated. Prior to 198 the same person that assessed the clients needs was also the person delivering the care.
- Assessment now conducted by an independent municipal agencies rather than individual caregivers.
- The idea of separating the functions is to ensure that “the availability of home care should not interfere with the outcome of the actual needs assessment” (p.233). Also, comprehensive needs assessments are made, rather than from the point of view of a single type of caregiver.
- Assessment reports are sent to a clients insurance company, and the most appropriate delivery provider is contracted.
- Follow-up study confirms that independent comprehensive needs assessment is possible under this kind of system.

#### **Key Issue #5: Informal Caregiver’s Ability to Provide Care**

Ageing at home usually requires some participation by informal caregivers (e.g., spousal, family or friends). Involvement of informal caregivers may be part of care for as high as 80-90% for seniors living at home (Wiles 2003).

- Informal caregivers often uninformed about and/or confused when navigating formal programs and services available to them
- Assistance may only come after a crisis –point reached
- Reluctance to ask for help and underestimation of the level of help required by informal caregivers common
- Lower levels of training in care techniques among informal caregivers
- Inflexible or qualified (e.g., based on income or disability type) funding options limits availability of help for informal caregivers.

Time demands on informal caregivers for technology-dependent children may be particularly high (Heaton, et.al. 2005).

Other disease-related groups may have similar time and/or skill requirements for informal caregivers (e.g., ALS) (CMHC 2006).

#### **Key Issue #6: Program Sustainability**

Any new program will have to meet BC Ministry of Health and/or BC Ministry of Employment and Income assistance sustainability requirements. Goals and model development work from the Provincial Equipment and Assistive Devices Committee (PEADC) should also be part of any proposed model development.

## **Benchmark Models**

A number of benchmark programs are described below, including:

- The Alberta Aids to Daily Living Program,
- Saskatchewan Abilities Council,
- Régie de l'assurance maladie du Québec,
- US Medicare and Medicaid Services,
- Japanese National Long-term Care Insurance System,
- European Assistive Technology Information Network, and
- The Swedish Handicap Institute.

While not a comprehensive list of all programs, the description does provide the range of possible types of programs providing information on obtaining and/or directly providing ceiling lifts for home-based care.

### **1) Canadian Models**

A partial list of Provincial and Territorial assistive technology programs has been developed by Industry Canada (Industry Canada 2007). This list does not include specific examples of extended health, private insurance, workers compensation or service group/charitable options for obtaining assistive technology, which are options available across Canada. Each province and territory has its own program eligibility rules and types of assistive devices covered. Services range from providing information on assistive technology to assistance with locating technology supplies and assisting with funding. Funding for ceiling lifts is not universally provided across Canada.

Provincial programs of note that cover patient lifts include:

1. Alberta Aids to Daily Living (<http://www.seniors.gov.ab.ca/AADL/index.asp>)
  - The AADL Program manual is available on-line and provides a list of eligible equipment and approved vendors.
  - Ceiling track lifts are approved devices.
  - Cost-sharing may apply (e.g., clients may pay out-of-pocket for product upgrades).
  - Equipment recycling program in place.
  - Client must need the device for more than 6 months.

To qualify for coverage for a ceiling lift, the client needs to provide the following:

- How this lift will replace 2 pieces of AADL equipment,
- Client has a quote for whole track package, and
- Client has funding in place for track and installation.

AADL will provide 2 slings per 4-year period as needed, and 1 set of batteries each year as needed.

2. Saskatchewan Abilities Council (<http://www.abilitiescouncil.sk.ca>)
  - Similar program to the Alberta model
  - Funded through Saskatchewan Health, but program run independently through the Saskatchewan Abilities Council
  - Eligibility criteria and equipment links are provided
3. Régie de l'assurance maladie du Québec ([http://www.ramq.gouv.qc.ca/index\\_en.shtml](http://www.ramq.gouv.qc.ca/index_en.shtml))
  - Coverage for ceiling lifts is provided by Régie de l'assurance maladie du Québec as part of the Québec Health Insurance Plan
  - Eligibility appears to be automatic as part of being eligible for QHIP

4. Government of New Brunswick (< <http://www.gnb.ca/0048/english/equipment.htm>)
  - Provides a Directory of Financial Aid for Persons with Disabilities in New Brunswick and Sources of Funding Assistance and/or Rehabilitation Equipment Loan Programs for Persons with Disabilities in New Brunswick, to assist persons with disabilities in locating funding
5. Nova Scotia Disabled Persons Commission (<http://www.gov.ns.ca/disa/>)
  - Commission established to provide a forum for policy development and as an information resource

## **2) International Models**

A number of international models for assistance for obtaining assistive devices can be reviewed as possible benchmarks for a British Columbia Program. Each program has unique benefits related to how the programs are delivered.

### 1. US Medicare and Medicaid Programs (<http://www.cms.gov>)

Eligibility for assistance for Medicare and Medicaid are similar to eligibility for programs offered by the BC Ministry of Health. What is potentially valuable, and distinct from BC, for a BC model is the recent recognition by CMS of the important economic role of informal caregivers – while coverage varies by state, Medicare will actually compensate informal caregivers (e.g., family) for assistance with home-based personal care (US Department of Health and Human Services 2000: 133). Financial assistance for home modifications are an important part of allowing informal care to take place in the home (ibid. 135). The basis for financially supporting informal caregivers lies in the savings of home-based care versus institutional long-term care (ibid. 129).

### 2. Japan

In Japan, the National Long-term Care Insurance System (LTCIS) provides direct funding support to clients who have home modifications prescribed by a professional caregiver of up to US\$1670 (Makigami and Pynoos 2002). Criticisms of the program include the complexity of the application process, the need for approval by a professional “care manager”, preventative home modifications are not covered. To compensate for these issues, some local government organizations offer supplements to the LTCIS program.

### 3. European Assistive Technology Information Network (<http://www.eastin.info/>)

EASTIN is an EU association that provides information assistance for obtaining aids to daily living. German, Danish, UK, Spanish, Italian and Dutch partners have developed a database of funding and equipment resources, in order to “create what has become the biggest, most comprehensive information network on assistive technology (AT) serving older and disabled people, their families and carers across the globe.”

For example, the Disabled Living Foundation in the UK provides information for the public, professional caregivers and business on assistive technologies (<http://www.dlf.org.uk/>). The public can find information on the kinds of devices currently on the market and how to obtain them. Professional resources (e.g., training) are available. Suppliers of assistive technologies can also obtain assistance in reaching their target markets.

### 4. The Swedish Handicap Institute ([http://www.hi.se/templates/Page\\_132.aspx](http://www.hi.se/templates/Page_132.aspx))

SHI is a national resource centre for assistive devices that provides publications on how to obtain AT in Sweden, provides device research and testing, promotes and develops professional training programs, and general information on AT.

Assistive devices in Sweden are provided free of charge through county and municipal councils, once ATs have been prescribed by Health Ministry medical services staff.

All of the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) have similar state-funded systems, with varying degrees of user funding co-payments for access to ATs (Nordic Cooperation on Disability 2004). Eligibility for AT and responsibility for prescribing ATs are governed by the various health services act for each country.

What sets the Nordic systems apart from the BC model, is: the coordinated effort to identify persons who need ATs; independent assessments and prescription of ATs from funding; and assistance in the financing of ATs on a national level.

### **3) Provincial Disability Agenda**

- Any proposed models should consider the foundation already in place with the B.C. Ministry of Employment and Income Assistance (<http://www.eia.gov.bc.ca/pwd.htm>), and
- Goals and model development work from the Provincial Equipment and Assistive Devices Committee (PEADC).

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## Appendix II – Stakeholder Interviews

ID# (for office use only): \_\_\_\_\_

### **Development and Evaluation of a Ceiling Lift Program for Home and Community Care in B.C.**

#### **I. Background Information**

1. *Organization/Agency Name:* \_\_\_\_\_
2. *What is your Position/Title?* \_\_\_\_\_
3. What is your role in home and/or community care and how long have you been in this industry?

#### **II. Ceiling Lift Program Goals and Objectives**

The main goals and objectives of the home & community care ceiling lift program are:

- i) To support client care and worker safety
- ii) To allow equal access for all British Columbian's
- iii) To provide a common process for obtaining a ceiling lift
- iv) To provide an opportunity for clients to make choices/decisions (of equipment they want installed) and to provide feedback/input
- v) To establish province wide access to information regarding lifts
- vi) To develop a ceiling lift program that is sustainable

4. *Please provide us with your comments about these goals and objectives.*

#### **III. Ceiling Lift Program Components**

In an earlier phase of this project, the team reviewed the literature review to determine what the main issues might be related to access to and adoption of ceiling lifts. The

issues were analyzed and used as the basis for a set of components of a program for implementing ceiling lifts in home and community care.

There are currently 14 components which we have identified (see below). Please rate on a scale of 1 to 4 how important you feel each of these components are in terms of whether or not they should define the program.

For those components that you indicate are very important (1), we will present possible solutions or options to fulfill that component and ask for your feedback.

**Legend / Definitions:**

**CHWs** = Community Health Workers

**HA** = Health Authority

**OHS** = Occupational Health and Safety

**JOHSC** = Joint Occupational Health and Safety Committees

**Agency**= Health Authority “affiliate” Home Support Agency

**Program**= Health Authority “amalgamate” Home Support Program

**Clinicians** = people responsible for: assessing a client’s ability to weight bear/transfer and recommending assistive devices. They may also be responsible for coordinating equipment purchase, installation, training, prescriptions or medical necessity letters, and completing funding applications. The category could include people who conduct workplace ergonomic assessments such as MSIP advisors.

*5. How important is each of the following components in selecting/defining the ceiling lift program for the home and community care ceiling lift model?*

## **FUNDING:**

***#1: Identify and publicize available funding sources to assist clients with purchasing and installation.***

Very important	Fairly important	Slightly important	Not important
1	2	3	4

***If 1 is circled: Possible options to address this are  
(PLEASE CIRCLE YOUR CHOICES):***

- Provide a web-based funding source list and flow chart for use, with application information and forms. (*ex: what sources to try first, what could apply for each client*)
- Provide a single questionnaire for clinicians to gather the information required for all applications in one visit with client/family (*note: training provided on use*)
- Market the resource website to clients/family, CHWs, case managers, clinicians, & agency/program staff. (*notes: information packages, brochures, presentations, workshops, newsletters...*)
- Establish interim loan programs
- Provide information on negotiated package deals

Other?



## **STANDARDIZATION:**

### ***#4: Develop and implement standard criteria, guidelines, and policies for client transfer / reposition assessment.***

Very important	Fairly important	Slightly important	Not important
1	2	3	4

***If 1 is circled: Possible options to address this are  
(PLEASE CIRCLE YOUR CHOICES):***

*All options include education and training for users*

- a. Provide standard guidelines, policies, and protocols for assessment to clinicians, case managers, and agency/program staff, that is based on observation, has a CHW health and safety focus, and includes time for the task as noted above
- b. Provide a list of clear, common criteria (between HA and agency/program) for when a ceiling lift is required and what conditions trigger a reassessment
- c. Provide a “red flags” list to CHWs to identify changes in a client, and link to reporting health and safety hazards / risks (forms and education)
- d. Provide client education and information packages on when a ceiling lift is required, benefits, client contracts, & limits on service if equipment is refused
- e. Provide client contract templates

Other?

**#5: Develop and implement standard practice guidelines that ensure clients receive assessments prior to receiving home support service.**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

**If 1 is circled: Possible options to address this are (PLEASE CIRCLE YOUR CHOICES):**

- a. Provide education on OHS regulation & statutory requirements on risk assessment
- b. Provide template policies with criteria for denial of service until risk assessments for CHWs is complete
- c. Provide policies / agreements between HAs and agencies/programs that specify clients are not transferred until risk assessment for CHWs is done, and equipment is either in place or on order, with interim measures implemented
- d. Provide criteria / guidelines for interim measures with defined time limits
- e. Establish provincial “wait time” limits for adjudication of funding applications

Other?



**#7: Improve methods to communicate risk between clients, CHWs, clinicians, agency/program and HA staff.**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

**If 1 is circled: Possible options to address this are (PLEASE CIRCLE YOUR CHOICES):**

*Communication strategies would include education and training for all.*

- a) Provide a single standardized form (risk/control) to communicate assessment information (risks) and controls (equipment) required in clear, plain language
- b) Provide education/training for schedulers on why information is important and strategies to use (via phone, input into web, add to CHW mail file)
- c) Develop strategies to make risk/control form available and accessible to schedulers, CHWs, agency/program staff
- d) Provide a “red flags” list as common criteria that triggers a reassessment to clinicians, case managers, Agency staff, CHWs
- e) Provide a standardized form to communicate hazard information from CHW or agency/program to clinicians / case manager (to trigger reassessment)

Other?

## **EDUCATION:**

**#8: Educate clients, CHWs, agency/program and HA staff that CHW health and safety is as important as client care.**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

***If 1 is circled: Possible options to address this are (PLEASE CIRCLE YOUR CHOICES):***

- a. Ensure the templates, guidelines, education, information, and resources provided through the ceiling lift program advocate the positive links between CHW safety & quality client care, and support their implementation
- b. Promote use of CHWs & JOHSCs in identification of risks and influencing changes in client care plan
- c. Change Ministry service delivery requirements - include worker safety in the service delivery mandate
- d. Provide education:
  - with targeted messaging on benefits of ceiling lift equipment for CHWs, JOHSC, all agency/program staff, case managers, clinicians, and clients.
  - CHWs, agencies, clinicians, case managers: that while equipment may take longer, there are benefits

Other?

**#9: Increase awareness of those who have responsibilities under the Workers Compensation Act for the Occupational Health & Safety of CHWs.**

Very important      Fairly important      Slightly important      Not important  
1                              2                              3                              4

**If 1 is circled: Possible options to address this are (PLEASE CIRCLE YOUR CHOICES):**

- a. Provide OHS education and training for clinicians, case managers, & agency/program managers and supervisors

Other?

**#10: Provide agencies/programs and health authorities with the information, tools and resources to efficiently implement an effective no-lift policy and ceiling lift program.**

Very important      Fairly important      Slightly important      Not important  
1                              2                              3                              4

**If 1 is circled: Possible options to address this are (PLEASE CIRCLE YOUR CHOICES):**

- a. Provide program tools and the resources identified above to support agencies/programs, CHWs, clinicians, & case managers
- b. Provide education on program tools and resources to assist with implementation (including “benefits education”)
- c. Provide technical support for implementation
- d. Provide information on cost-benefit of ceiling lift equipment (perception and operational)

Other?

## **TRAINING:**

**#11: Provide task specific training to clinicians (e.g. assessing weight bearing status, assessing safety of transfers), and CHWs (e.g. using ceiling lift equipment).**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

***If 1 is circled: Possible options to address this are (PLEASE CIRCLE YOUR CHOICES):***

- a. Provide training for clinicians in:
  - the transfer risk assessment tool with CHW safety focus (incl. weight bearing, transfers)
  - and equipment options, based on observations, with an OHS focus (risk ID and control for worker safety)
  - critically looking at therapy goals separate from worker safety
- b. Provide training for CHWs in ceiling lift equipment use to increase confidence and efficiency (for both the CHW and the client)

Other?

## **DEMOGRAPHIC AND GEOGRAPHIC CONSIDERATIONS:**

**#12: Geographic delivery challenges.**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

***If 1 is circled: Possible options to address this are (please provide):***

## **IMPLEMENTATION:**

**#13: Establish a web-based provincial information resource center for centralized access to current information, tools, and resources.**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

**#14: Establish Regional Champions coordinate the ceiling lift program in various geographic regions:**

Very important	Fairly important	Slightly important	Not important
1	2	3	4

***If 1 is circled: Possible options for responsibilities or skills of the regional champions could be: (PLEASE CIRCLE YOUR CHOICES):***

- a) Be able to assess barriers in a specific situation and identify which combination of interventions available from our program could address barriers
- b) Assist with facilitation, implementation or coordination
- c) Be knowledgeable on resources, equipment, funding, and training
- d) Be knowledgeable of their regions processes, challenges, and be able to problem solve
- e) Provide training identified in the ceiling lift program (or coordinate it)
- f) Be able to assess clients or problem solve transfer challenges with individual Home and Community Care teams (work with the client, CHWs, agency/program, and HA)

Other?

In your experience, who would be an ideal candidate for such a position? (*Note: not a specific person, but a skill set or type of job/occupation this person might come from*).

#### **IV. Additional Comments**

6. Do you have any comments about the selected components or are there any additional components that you feel should be included in the list?

7. Do you have any additional comments or suggestions for the model for the home and community care ceiling lift program?

**THANK YOU FOR YOUR TIME AND EXPERTISE!!**

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