



Ceiling Lifts in an Extended Care Facility Reduce Injury

Background

Caregivers are at risk of musculoskeletal injury (MSI) when handling patients or residents, particularly when lifting and transferring. One strategy for reducing this risk is installing and using ceiling-mounted lifting devices. OHSAH recently completed a study evaluating how effective overhead ceiling lifts are for reducing MSI. The study also measured the impact of ceiling lifts on staff satisfaction, and the safety and comfort of extended care residents.

Ceiling-mounted lifts were installed in a 75-bed extended care unit of Saanich Peninsula Hospital. Hospital staff received hands-on training on how to use the lifts and were encouraged to use them on a regular basis when lifting, transferring, and repositioning residents. The hospital also put a “no-unsafe manual lift” policy into place. A separate 75-bed extended care unit in the same hospital did not receive ceiling lifts, and served as the control group.



Methods

The study included three evaluation methods: a questionnaire, an analysis of injury data, and a cost/benefit analysis.

1. A *questionnaire* was administered to the staff of both extended care units before the ceiling lifts were installed, and another was administered after the lifts had been in use for one year.
2. *Injury Data*: Incident report forms and Workers' Compensation Board (WCB) claims costs were obtained from both units 21 months before the installation of ceiling lifts, and 21 months after they had been put in place.
3. OHSAH conducted a *cost/benefit analysis* of the ceiling lift program. Researchers calculated direct and indirect savings, as well as total program costs.

Key Points

- Staff preferred using ceiling lifts when lifting and transferring residents, but preferred to use manual methods for repositioning
- Staff showed a significant reduction in perceived risk of injury and discomfort from handling residents
- Compensation costs related to lift and transfer claims dropped, although there was not the same benefit for repositioning tasks
- There was an overall moderate cost-savings associated with the implementation of overhead ceiling lifts

Results

Questionnaire

In the unit that received the ceiling lifts, staff used the lifts for bed to chair transfers more often than any other resident handling method. Seventy-one percent of workers in the unit also indicated that they most preferred the lifts for lifting and transferring residents. All staff in the care unit with the ceiling lifts felt that they could more easily lift residents; 96% felt that the ceiling lifts made their job easier to perform.

Not only was there a significant decrease in staff perception of upper body injury risk, there was also a substantial reduction in the amount of discomfort actually experienced by caregivers.

While the ceiling lifts were viewed favourably for lifting and transferring residents, there was not a comparable increase in preference for using the lifts to reposition

residents. Staff reported that they felt less discomfort when using the ceiling lifts for repositioning, yet 57% of workers in the unit continued to manually reposition residents.

Injury Data

Workers in the unit that received the lifts showed a 68% decrease in compensation costs, while the unit without the lifts experienced an equivalent increase. There was also a 53% increase in WCB compensation costs for repositioning injuries among staff with access to ceiling lifts, while there was a 34% decrease among the control group.

Both units reported the same number of compensation claims, even after the ceiling lifts were installed.

Cost/Benefit

The cost of the intervention was calculated at \$284,297. The direct savings per year for “all patient handling” was \$9,835 and for only “lifting and transferring tasks” it was \$14,493. The payback period for the program (factoring in an indirect cost of three times direct costs) is estimated to be

9.6 years when including all patient handling claims, and 6.5 years when including only lifting and transferring claims. This cost-benefit analysis re-emphasizes that the ceiling lifts were more beneficial for lifting and transferring tasks than for repositioning tasks.

Not only was there a significant decrease in staff perception of upper body injury risk, there was also a substantial reduction in the amount of discomfort actually experienced by caregivers.



The cut-out above the door allows for continuous tracks in and out of a room.

All photos courtesy of Angel Accessibility Solutions

Discussion

Staff in this study demonstrated a clear preference for the use of ceiling lifts over other methods for lifting or transferring residents (Figure 1). The use of ceiling lifts significantly reduced the perceived risk of injury and discomfort to the neck, shoulders, upper and lower back, and arms/hands for care staff. While the number of claims was the same in both hospital units, compensation costs decreased for staff with access to the lifts (Figure 2). This suggests that the ceiling lifts may have been responsible for reducing the severity – rather than the frequency – of lifting and transferring injuries.

It is interesting to note that job satisfaction and worker perception of control over job schedules and organization increased significantly in both units over the duration of the study. However, staff in the unit without the lifts were less worried about making mistakes and felt that their jobs were less hectic than those performed by their counterparts with access to

ceiling lifts. Staff who had access to the lifts may have felt that the added time of learning how to use the lifts and then actually using them created a greater workload.

The limited cognitive ability of the residents made it difficult to assess their perceptions of comfort and security when being lifted or transferred using ceiling lifts. However, the majority of staff believed the ceiling lifts to be safe and effective for residents.

Ceiling lifts were not found to have the same impact on reducing the risk of MSI or compensation costs when they were used for repositioning patients, even though perception of risk when using the lifts was lower than for other methods. Staff reported that using the ceiling lifts required more time than manually repositioning residents. Therefore, further research would be useful on the re-design of slings and ceiling lifts to better accommodate these other patient handling situations, such as repositioning or assisted walking.

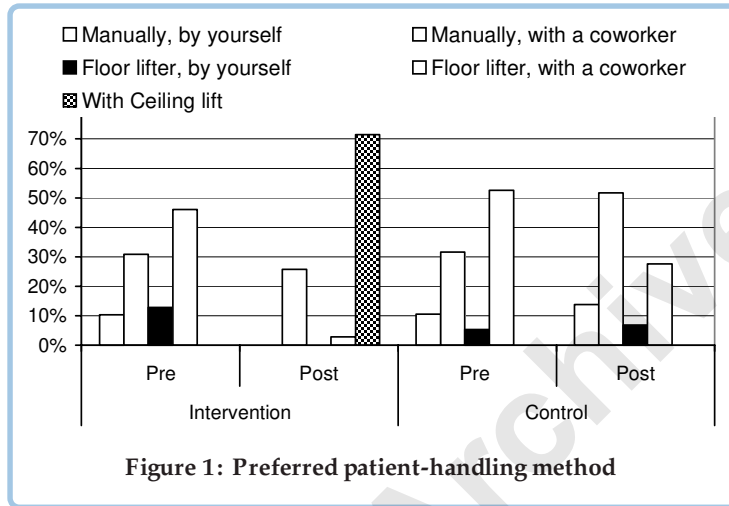


Figure 1: Preferred patient-handling method

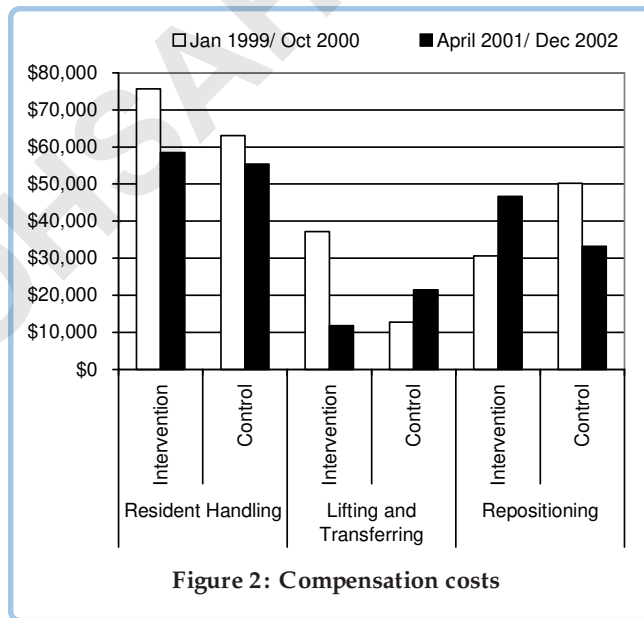


Figure 2: Compensation costs

Conclusion

OHSAH conducted a controlled study to evaluate the impact of ceiling lifts on reducing the risk of MSI to care staff while handling residents. The main result of the evaluation was a decrease in perceived risk of injury and discomfort among caregivers who used the lifts, as well as a reduction in compensation costs arising from lift and transfer injuries. The study provided evidence that ceiling lifts are a safe and preferred method for lifting and transferring residents. The study also demonstrated an overall cost-savings associated with the installation of the overhead lifts.

In what healthcare settings are ceiling-mounted lifts best suited?

Ceiling-mounted lifts are ideal when the frequency of lifting and transferring patients in each room is high. Permanent ceiling lifts are well suited to facilities housing long-term residents who require frequent assistance getting in and out of bed, as well as to and from the washroom.



No Unsafe Manual Lift Policy

In 2001, the Associations of Unions and the Health Employers Association of British Columbia (HEABC) signed a Memorandum of Understanding to eliminate all unsafe manual lifting of patients and residents. The MOU obliges all parties to eliminate manual lifting with the use of mechanical equipment. Installing ceiling lifts is one way a healthcare facility can support a successful “no unsafe manual lift” policy and reduce the risk of injury to caregivers.

What information is available for facilities looking to implement a ceiling lift program?

OHSAH has assembled a resource guide for facilities interested in establishing a ceiling lift program. The Patient/Resident Ceiling Lift Program Guideline contains information on budget estimations, the selection of equipment suppliers and distributors, and on the configuration, use, and maintenance of ceiling lifts in different settings. The resource guide also contains sample material produced for an existing ceiling lift program in the former Okanagan-Similkameen Health Region.

OHSAH also has Project Updates on other ceiling lift studies. These include the study at St. Joseph’s Hospital in Comox and a study assessing the impact of portable ceiling lifts in a diagnostic imaging environment.

Annual Report Card

OHSAH produces an annual report card on the progress to date of ceiling lift programs. The report card provides information on ceiling lift programs undertaken by health authorities around the province, as well as the funds spent on installation and the degree to which ceiling lifts are being used in BC healthcare facilities. The report also examines how effective ceiling lift programs have been at reducing MSIs.

For specific details on this report, please visit the OHSAH website or contact OHSAH directly.



ABOUT THIS DOCUMENT

The Occupational Health and Safety Agency for Healthcare (OHSAH), which operated from 1998-2010, was a precursor to SWITCH BC. Conceived through the Public Sector Accord on Occupational Health and Safety as a response to high rates of workplace injury, illness, and time loss in the health sector, OHSAH was built on the values of bipartite collaboration, evidence-based decision making, and integrated approaches.

This archival research material was created by OHSAH, shared here as archival reference materials, to support ongoing research and development of best practices, and as a thanks to the organization's members who completed the work.

If you have any questions about the materials, please email hello@switchbc.ca or visit www.switchbc.ca