



# Evidence Based Decision Making in Occupational Health and Safety

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# Presentation Outline

Health care sector statistics-WorkSafeBC

OHSAH

- Mandate
- WHITE™ database
- An Example-Ceiling Lift research in VCH



## OHSAH's formation

- Healthcare system difficulties
  - Concern about musculoskeletal injuries, infectious diseases, chemical-induced disorders, violence, stress
  - High rates of injury/illness among staff
  - Escalating compensation costs, loss of productivity
  - Impact on quality of care
  - Changes in the nature of care provided, shifts in work patterns
  - Change in profile of patients/residents
  - Staff issues- aging, shortage



# OHSAH's Mission

**To work with all members of the healthcare community to develop guidelines and programs designed to promote better health and safety practices and safe early return-to-work**

**To promote pilot programs and facilitate the sharing of best practices**

**To develop new measures to assess the effectiveness of programs and innovations in this area.**



## Collaborative & Evidence-Based Methods

- Use **evidence**, (local and published internationally) to develop and disseminate best practice guidelines
- **Create partnership** initiatives with funding based on labour -management cooperation and scientific validity
- **Rigorous evaluation** of effectiveness, and cost-benefit of workplace interventions



## OHSAH fundamentals

- Non-profit provincial agency; funding from the Ministry of Health
- Jointly governed by employers and unions

### Departments at OHSAH-

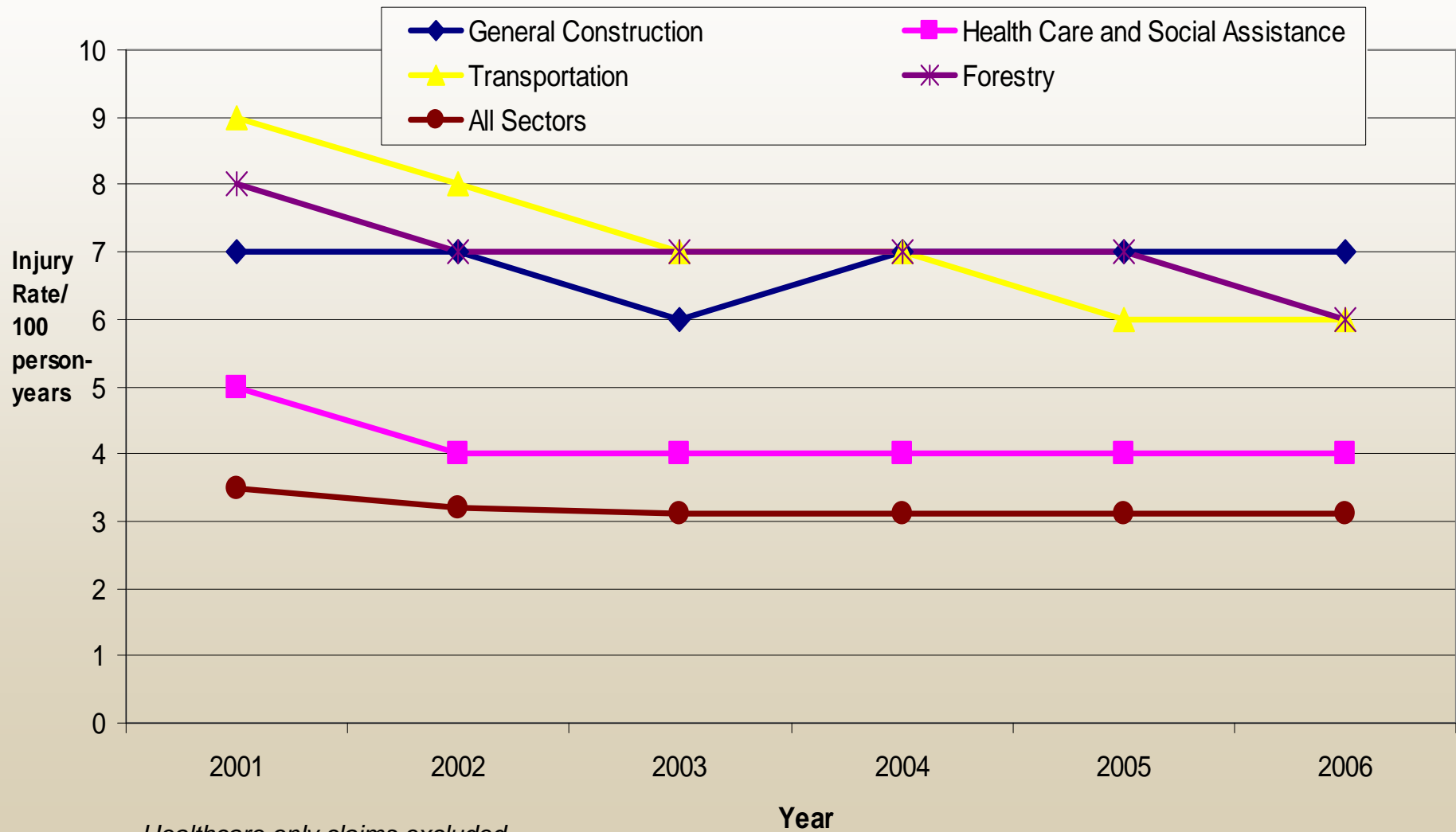
- Injury Prevention
- Disease prevention
- Mental health and organizational development
- Statistics and evaluation
- Information Systems
- Disability prevention
- Education and training



# Statistics on Health and Safety in Health Care



# Injury Rate by Sector



Healthcare only claims excluded



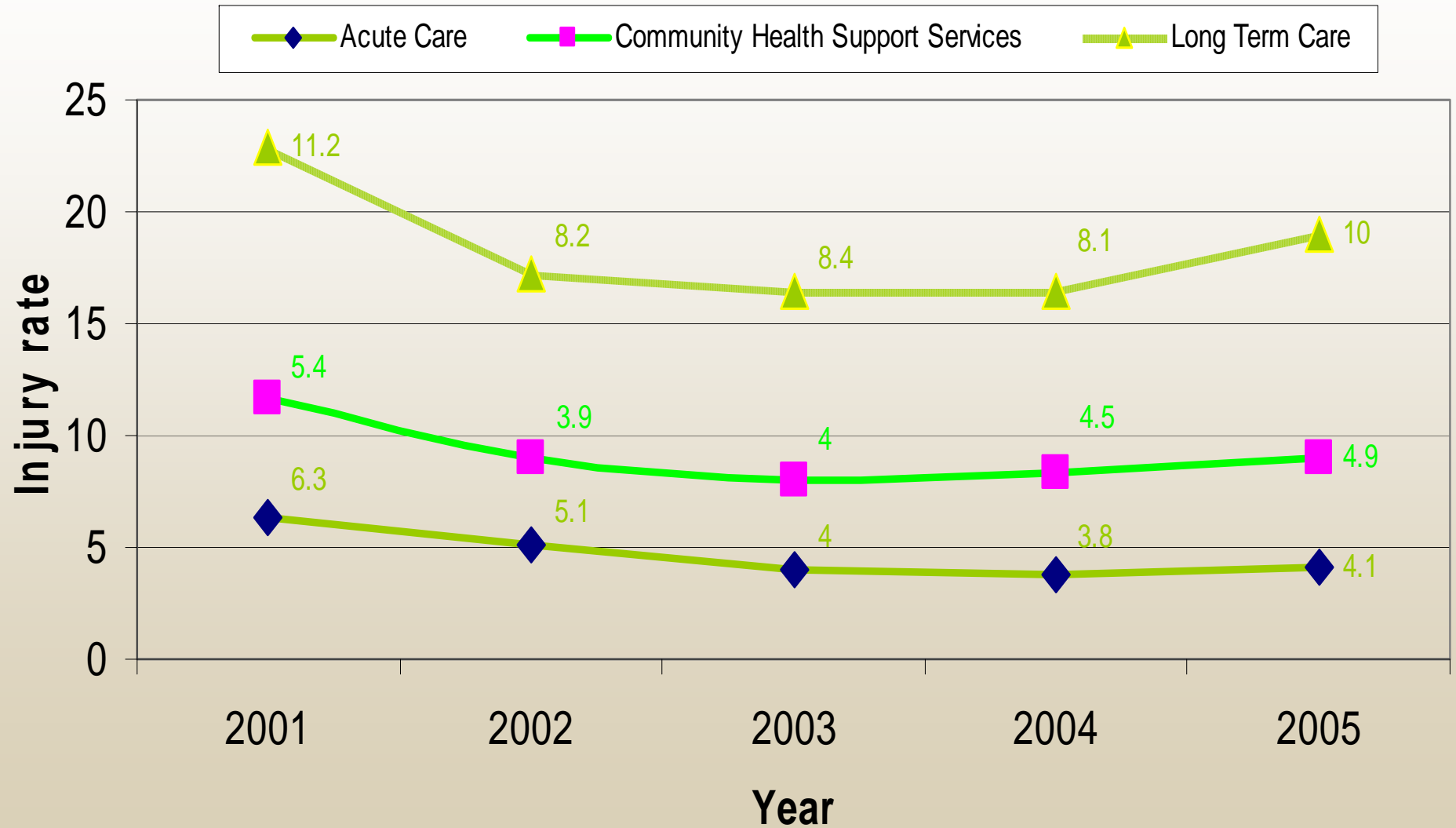
## 2006 Statistics

	Number of Claims	Days lost from Work	Claims Costs
<b>General Construction</b>	<b>19,062</b>	<b>359,476</b>	<b>108,714,808</b>
<b>Health Care and Social Assistance</b>	<b>12,419</b>	<b>297,491</b>	<b>52,397,554</b>
<b>Transportation</b>	<b>8,806</b>	<b>246,113</b>	<b>66,785,305</b>
<b>Wood and Paper Products</b>	<b>9,826</b>	<b>137,979</b>	<b>65,508,397</b>
<b>Forestry</b>	<b>2,560</b>	<b>90,433</b>	<b>57,047,503</b>
<b>Other sectors</b>	<b>78,445</b>	<b>1,809,629</b>	<b>496,681,965</b>
<b>Total</b>	<b>131,118</b>	<b>2,941,121</b>	<b>847,135,532</b>

- Days lost from work: for current year and prior years' injuries; 56% current year
- Number and costs of claims: Health care only+ short term disability+ long term disability + fatal)

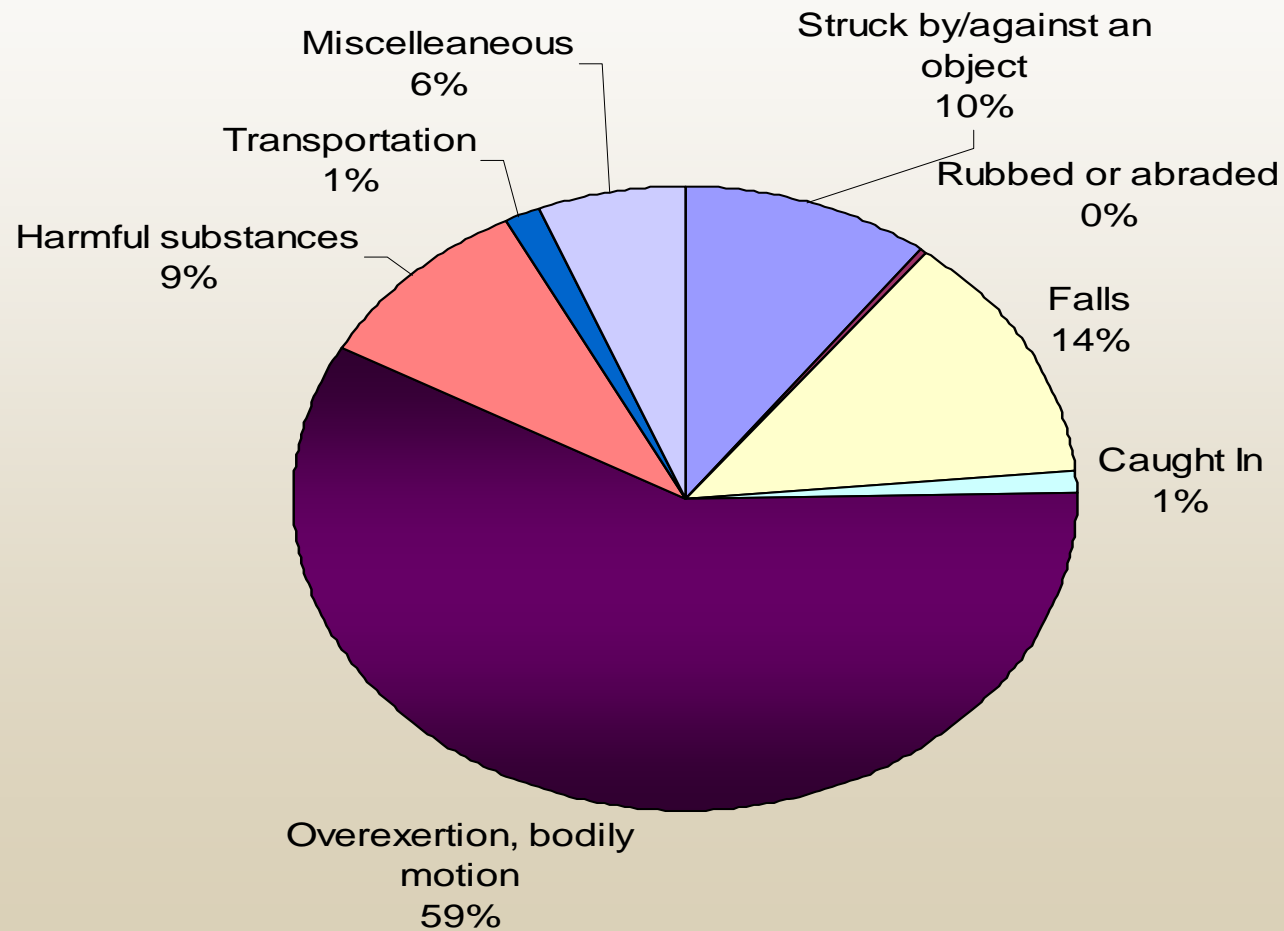


## Injury rate by Sub-sector





# Type of Injury: 2006





# Workplace Health Indicator Tracking and Evaluation (WHITE)<sup>TM</sup> Database

Web-based system, facilitating analysis of incidents, injuries, risk factors and prevention/ follow up measures

The screenshot shows the user interface of the WHITE DATABASE. On the left is a navigation menu with the following sections: Incident Investigation (Incidents, Inquiries, Reports), Case Management (WCB Claims, STD, LTD, Secondary Prevention, Inquiries, Reports), Employee Health (HCW Health File, Inquiries, Reports), Health and Safety (Training and Education, Inquiries, Reports), and System Administration. A 'Logout' button is at the bottom of the menu. The main content area features a large 'W' logo, the text 'WHITEDATABASE Developed By OHSAH', and a 'WELCOME: TONY GILLIGAN' message with 'LAST LOGIN ON: AUGUST 18, 2003'. At the bottom, contact information is provided: 'WHITE SYSTEM SUPPORT INFO: TEL. +1(604)775-4034 E-MAIL. white@ohsah.bc.ca'. A 'INCIDENT INVESTIGATION' button is visible in the top right of the main area.





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# Incident Investigation

HCW NAME: Bates, Janet  
INCIDENT ID: 0000044

COMPLETED STATUS: Incomplete



WHITEDATABASE  
Developed By OHSAH

- Incident Investigation
- Case Management
- Employee Health
- Health and Safety
- System Administration
- Logout

Employee Details

Incident Details

Nature of Injury

Activity

Cause

Contributing Factors

Corrective Actions Taken

## Incident Investigation/Employee Details



Incident ID	<input type="text" value="0000044"/>	<input type="button" value="🔍"/>	Claim ID:	<input type="text" value="0000043"/>
HCW ID:	<input type="text" value="BAT001"/>	<input type="button" value="🔍"/>	WCB Claim #:	<input type="text" value="897678765"/>
First Name:	<input type="text" value="Janet"/>		Assigned To:	<input type="text" value="ADMIN"/>
Last Name:	<input type="text" value="Bates"/>		Occupation:	<input type="text" value="RCA"/>
Employee #:	<input type="text" value="659573"/>		HSDA:	<input type="text" value="South HSDA"/>
Primary Facility:	<input type="text" value="Sunshine lodge"/>		Incident Facility Name:	<input type="text" value="Sunshine lodge"/>
Primary Department:	<input type="text" value="ECU I"/>		Incident Department Name:	<input type="text" value="ECU I"/>
Work Phone #:	<input type="text" value="604"/> <input type="text" value="223"/> <input type="text" value="5494"/>		Incident Work #:	<input type="text" value="604"/> <input type="text" value="783"/> <input type="text" value="1221"/>
Injury Date:	<input type="text" value="5/24/2003"/> <input type="button" value="📅"/>	<input type="text" value="12:00"/>	Date Reported:	<input type="text" value="5/25/2003"/> <input type="button" value="📅"/>
Shift Start Time:	<input type="text" value="5/24/2003"/> <input type="button" value="📅"/>	<input type="text" value="08:30"/>	Shift End Time:	<input type="text" value="5/24/2003"/> <input type="button" value="📅"/>
Did you finish your last shift?:	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown			



## Use of WHITE

- Injury reports periodically to Health Authority
- Effectiveness/Cost-benefit analyses of interventions
  - Ceiling lifts
  - PEARS
- Focused analyses on specific injury type (MSI, BBF...) and occupations (RN, LPN, Care Aides...)
- Answer Research Questions, like
- Is there any difference of injury risk by gender or job status (full-time, part-time and casual workers)?



# Ceiling Lift Research

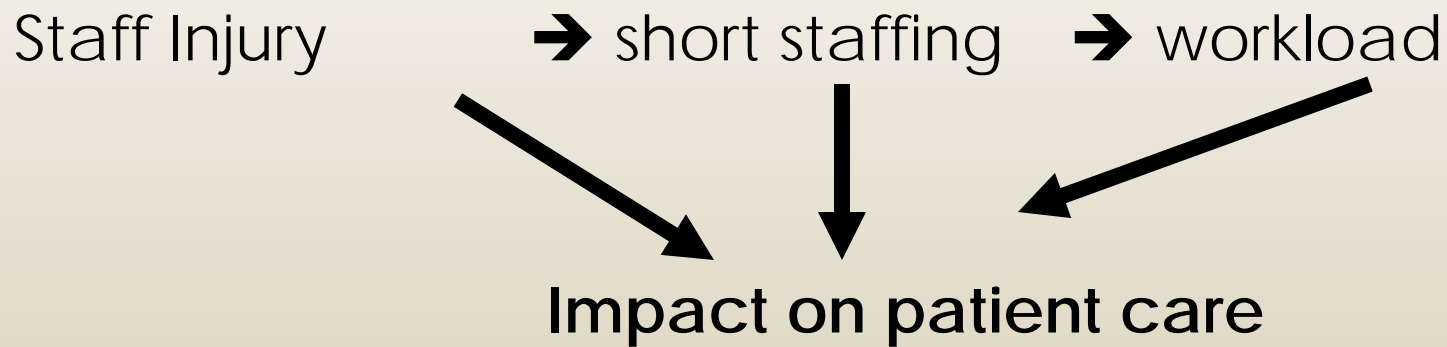


# Rationale and Background

- Patient handling tasks are physically demanding, performed under unfavorable conditions, and unpredictable in nature.
- Patient factors complicate tasks -variations in size, functional status, cognitive functioning, cooperation, fluctuations in condition and fatigue
- Many patient lifts done in awkward positions-bending over beds/chairs
- Inadequate space and poorly designed work environments contribute to awkward positions
  - The average weight of an adult male patient is currently 185 pounds
  - The cumulative weight lifted by a nurse in one typical 8-hour shift is 1.8 tons



## Patient care and health of Staff





# Rationale and Background

- Several studies demonstrate safe patient lifting devices can reduce frequency, severity, and cost of caregiver injuries
- There is no evidence linking these programs to quality of care
  - Improvements in quality of care are noticed , but largely anecdotal
- If these interventions have a direct impact on patient care --enhance organizational support of these



# Rationale and Background

**Lifting devices are said to increase the frequency and ease of moving a patient and improve quality of life**

**Possible outcome measures, include**

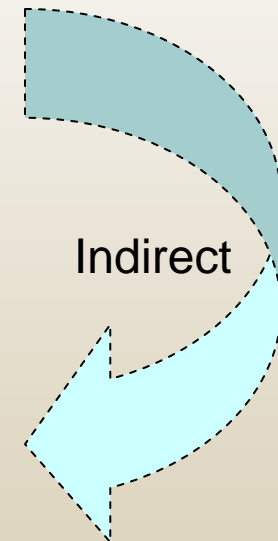
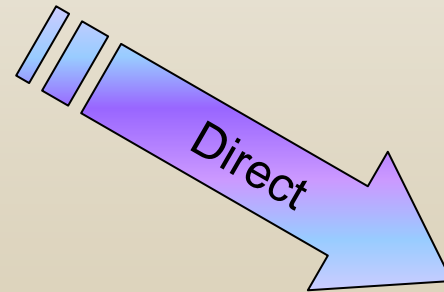
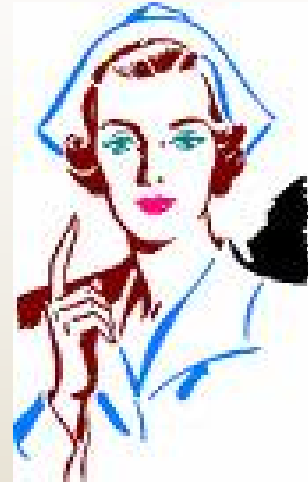
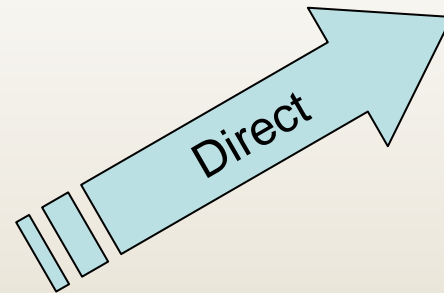
- cognitive functioning
  - physical functioning
  - skin integrity
  - Improved behavior
  - Less incidents of RTI and UTI
- depression and anxiety,  
toileting outcomes  
decrease in combativeness  
reduction in falls

**More mobile and better functioning patients are more likely to**

- increase their level of activity,
- decrease healthcare utilization,
- increase their discharge potential,
- increase participation in therapy,
- and their health status may improve



# The Connection

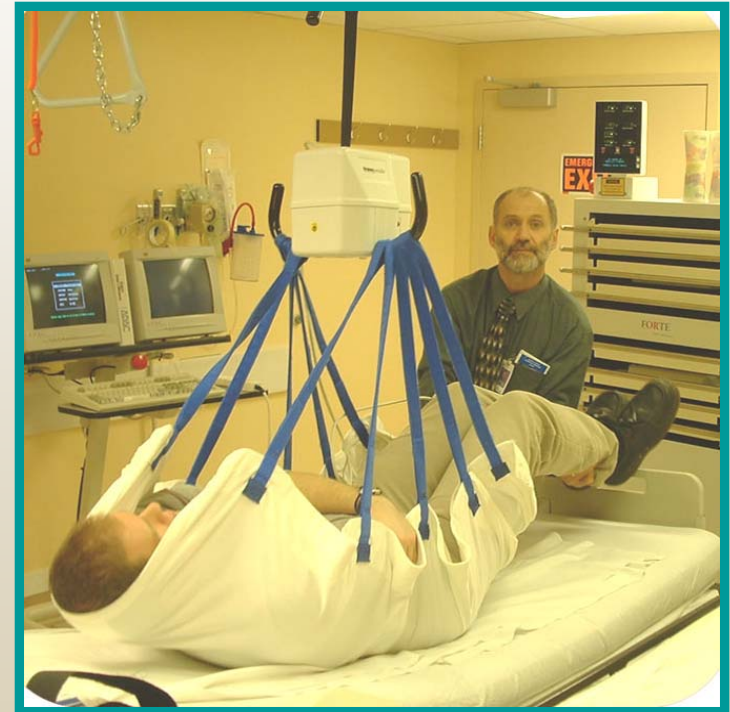




# The Objectives

## Vancouver Coastal Health

- Undertake systematic investigation of the worth of overhead mechanical lifts
- Work as template for future similar OH&S interventions





# Study components

- 1) Observational study (timing and frequency of ceiling lift use)
- 2) Objective Patient outcome
- 3) Patient Perception
- 4) Staff Perception
- 5) Cost-benefit Analyses



# I-Observational Study

## Questions:

- 1) Does the use of a CL decrease time of patient transfer and number of staff required when compared to other patient handling methods?
- 2) What is the frequency of CL usage compared to other patient handling devices?
- 3) Are patients in facilities with CL transferred more frequently compared to those without?

## Study Design:

Cross sectional study, facilities with and without ceiling lifts



## II-Objective Patient Outcome

### **Questions:**

Does the use of a CL improve patient outcome indicators?

### **Study Design:**

Pre/post-intervention and Cross sectional study using standard databases

### **Patient Outcome Measures:**

incidents of falls; incidents of pressure ulcers; RTI?,UTI?, Wounds?

### **Data Sources:**

QUIST database, Wescom



## III – Patient Perception

### Questions:

Does the use of CL improve patients' perceptions of safety, pain, comfort and overall satisfaction during transfers?

### Design:

Cross sectional study by using questionnaires/Focus Group in acute care facilities



## IV-Staff Perception

### **Question:**

Does the use of CL improve staff's perceptions of pain, safety, comfort and overall satisfaction during transfers?

What are the key barriers and facilitators in optimal use of ceiling lift?

### **Design:**

Questionnaire/Focus Group using control groups in acute & extended care

**Outcome Measures:** Ease of use, availability, accessibility, versatility, storage; policy & procedures, training, safety culture



# V-Cost Benefit Analysis

## Questions:

Is it effective in reducing number of Patient handling related MSI claims, claims costs and time-loss?

What is the payback period and return on investment?

## Design:

Pre- and post- intervention MSI claims and claim costs

Cross sectional and with control group



# Challenges

- Literature on patient outcome
- Data sources
- Control group
- Pre-post trend
- Data availability
- Attribution
- Indirect costs
- Difficulty in studying LTC residents



## Recent publications

[Alamgir H, Cvitkovich Y, Yu S, Yassi A.](#) Work-related injury among Direct Care occupations in British Columbia, Canada.  
Occup Environ Med. 2007 May 23

[Alamgir H, Swinkels H, Yu S, Yassi A.](#) Occupational injury among cooks and food service workers in the healthcare sector.  
Am J Ind Med. 2007 Jun 7

[Alamgir H, Cvitkovich Y, Yu S, Astrakianakis G, Yassi A.](#) Needlestick and other potential blood and body fluid (BBF) exposures among healthcare workers in British Columbia, Canada.  
American Journal of Infection Control ( In Press)

[Badii M, Keen D, Yu S, Yassi A.](#) Evaluation of a comprehensive integrated workplace-based program to reduce occupational musculoskeletal injury and its associated morbidity in a large hospital.  
J Occup Environ Med. 2006 Nov;48(11):1159-65.

[Miller A, Engst C, Tate RB, Yassi A.](#) Evaluation of the effectiveness of portable ceiling lifts in a new long-term care facility.  
Appl Ergon. 2006 May;37(3):377-85. Epub 2005 Dec 27.