



Preventing Disability from Occupational Musculoskeletal Injuries in Healthcare Workers



Effectiveness of an Integrated Prevention and Return-to-Work Program

Healthcare workers are at high risk of workplace injury, especially musculoskeletal injury (MSI). In British Columbia, the healthcare sector reports the largest number of time loss injuries and days lost in the province, more than any other occupational group in BC.

There is increasing evidence that part of the answer to this problem lies in an integrated (prevention and prompt follow-up), workplace-based and work-focused approach. The success of such an approach also depends on an organizational culture of safety and the cooperative participation of all stakeholders. [1-2] Therefore, a 1-year “pilot” intervention study was designed to assess the impact of such a program on injuries, time loss, and workers’ compensation costs in a large hospital.

The PEARS Evaluation

What impact did a comprehensive integrated prevention and return-to-work program have on musculoskeletal time loss injuries and compensation costs at a large BC hospital?

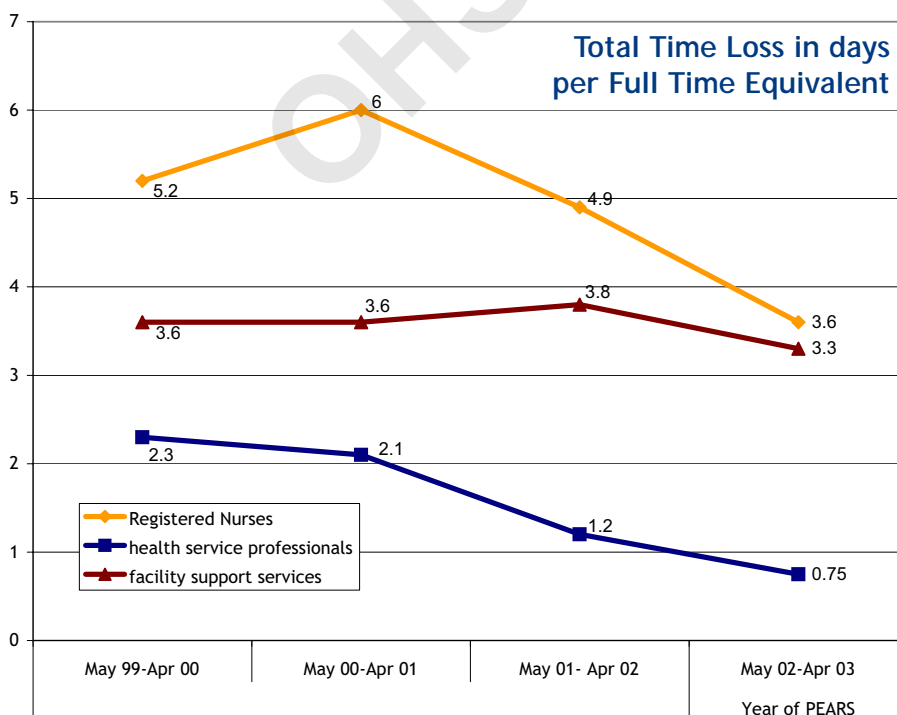
A recent evaluation of the Prevention and Early Active Return-to-Work Safely (PEARS) pilot at Vancouver General Hospital showed that the program helped to return workers back to their regular duties in a shorter period of time. It successfully reduced total compensation costs, particularly among registered nurses and health sciences professionals. Evaluation of other PEARS programs is still underway.

What is PEARS?

PEARS integrates primary prevention activities with prompt on-site follow-up. The theory underpinning PEARS is that this integration, together with bipartite support, will enhance injury

prevention and reduce disability [1-3]. At Vancouver General Hospital (VGH), the PEARS program offered injured employees a range of on-site services such as:

- Physiotherapy
- Review of work tasks, with advice and training given as appropriate
- Work environment assessment, with modification and purchase of equipment, as necessary
- A graduated (modified) return-to-work program, with reduced hours and/or a reduced range of duties
- Access to an on-site physician

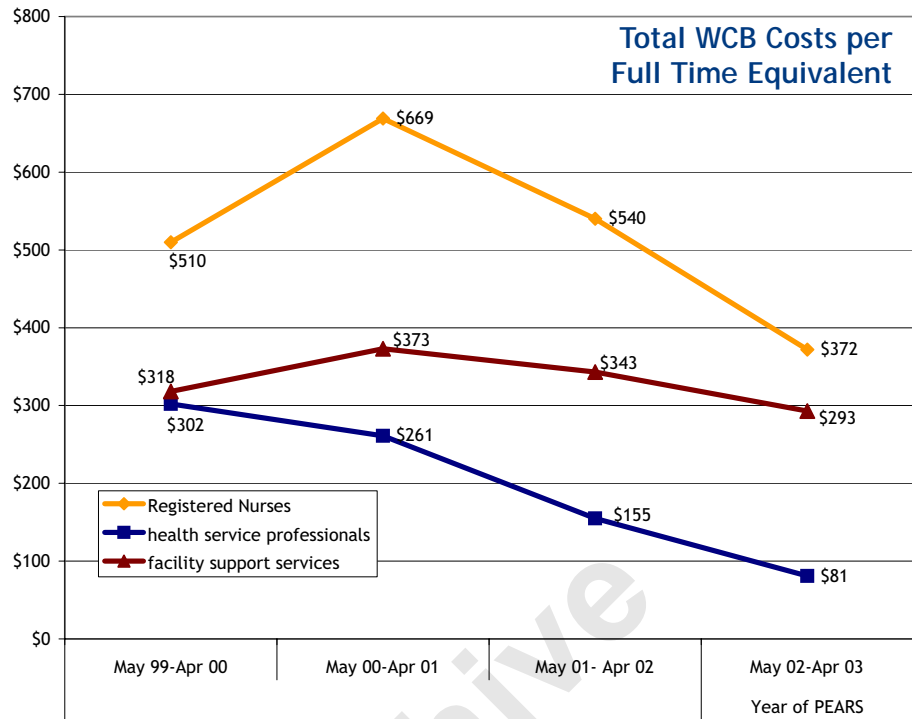


PEARS was offered to all VGH employees with MSIs. Under the program, PEARS staff attempted to contact all employees reporting a MSI. Participation was entirely voluntary and did not target any specific occupational group, body part, or injury mechanism. A bipartite steering committee, which included hospital management and union representatives,

oversaw the program. A specifically appointed program leader took on the daily management of PEARS.

PEARS combined three components:

1. Primary prevention, which built on the existing work of the musculoskeletal injury prevention team;
2. Secondary prevention, which involved prompt follow-up of injured workers with comprehensive measures for workplace modification and clinical treatment; and
3. Extensive data gathering to track the efficiency and effectiveness of various initiatives.



Methods

The evaluation of PEARS consisted of comparing the injury rates and time to return to regular duties for musculoskeletal time loss injuries occurring at VGH within the first year of the program with the injury data for each of the three years immediately prior to the start of PEARS. Injury rates at VGH were also compared with those from a control hospital at which there was not a PEARS program.

Although PEARS is an ongoing program at VGH, the study period lasted from May 2002 to April 2003.

Analyses were performed according to occupational group. Three groups were defined for the study:

1. Registered nurses (RNs).
2. Health science professionals (HSPs), which included laboratory technologists, radiation technologists, physiotherapists, occupational therapists, pharmacists, and others.

3. Facility support services (FSS), which included clerical staff, dietary workers, housekeeping, laundry, supply and distribution, trades, orderlies, licensed practical nurses, and security workers.

Results

Registered Nurses

Participation in PEARS for RNs was 33% of all RNs who reported MSIs and 57% for those RNs who claimed time loss injuries. Time loss injuries were significantly reduced for RNs, although the reduction was likely the result of primary prevention activities put in place before the comprehensive program. However, there was a reduction of up to 40% in total time loss compared to any of the three years prior to the start of the program. This was associated with a reduction in compensation costs of up to 44%.

Health Science Professionals

Participation in PEARS for HSPs was 51% for all HSPs who reported an MSI, and 59% for those HSPs who claimed time loss injuries. There was a reduction in total time loss of up to 67%

What is PEARS?

The Prevention and Early Active Return-to-Work Safely (PEARS) Program integrates musculoskeletal injury (MSI) prevention, early intervention, and return to work processes. The overall purpose is to reduce the incidence and duration of MSI time loss and related costs of workplace MSIs through early intervention and a preventive approach, which includes ergonomic assessments and workplace modification. In addition to the VGH PEARS pilot profiled in this document, Royal Columbian Hospital (part of Fraser Health) was the site of a second concurrent PEARS pilot. The success of the PEARS pilots in Fraser and Vancouver Coastal Health have paved the way for provincial expansion to the Interior, Northern BC, and Vancouver Island.

from the three years prior to the start of the program. This was associated with a reduction in compensation costs of up to 73%.

Facility Support Services

Participation in PEARS was particularly low for this group: 40% of all FSS who reported MSIs, and only 36% of those reporting time loss injuries. There were no significant changes in the rates between any of the time periods at either VGH or the control hospital.

Discussion

The participation rate in the PEARS program was less than approximately 50% within any of the occupational groups. Preliminary results of an extensive telephone follow-up suggest that among the reasons for non-participation were the perception that an injury was not severe enough and an incomplete understanding of what the PEARS program offered. Recent provincial legislation overrode segments of negotiated healthcare labour contracts for FSS staff and it is reasonable to assume that low participation among this group was related to impending layoffs and the distrust this created.

Although participation rates were low, considerable savings in compensation costs were achieved during PEARS for

Pain and Disability Measurements

Can these be useful to prevent re-injury?

It is not enough that PEARS reduces injuries and time loss. It must also reduce the pain and disability of injured employees. As far as is possible, program participants are not to be discharged with levels of pain and disability that might predispose them to further injury. One of the questions that researchers attempted to answer in the program evaluation is whether or not participants with moderately high pain and functional disability after being discharged had an increased risk of MSI re-injury.

An employees' perception of their pain and disability was therefore collected at intake and at discharge from the PEARS program. Participants with back injuries completed the related back disability questionnaire (OSWESTRY) at intake and discharge. An increased risk (2.14 times) of a further MSI was found for those employees discharged with perceived moderate disability (20-40%) on their OSWESTRY compared to those discharged with perceived minimally disabled backs (0-20%).

When taking confounding factors into consideration (age, gender, number of days as a program participant, and whether the participant is at work on the day of discharge), the perceived moderately disabled low back participants were still at an increased risk of a further MSI. The increased risk was marginally significant ($p=0.06$) and warrants continued investigation as more participants are discharged from the program.

This therefore suggests that these tools can be useful to assess pain and disability, and that people should not be discharged from the program when these indicators are high. This may help prevent re-injury.

injuries to RNs and HSPs. It is difficult to determine how much of these savings was a direct result of PEARS, rather than a result of the activities of the MSIP team or other factors known to impact time loss. [4-6].

There were significant reductions in the MSI time loss rates for RNs at VGH and the control hospital, and for HSPs

at VGH – although not for FSS employees, again likely related to the lower than optimal participation. It is likely, however, that PEARS did not have a major influence on this decline in the MSI time loss rate at VGH, as it was already declining before PEARS started. Interviews with program personnel at VGH revealed that the MSIP team activities remained somewhat isolated from the secondary prevention efforts of PEARS. This may have limited the primary prevention spin-off expected when workplace modifications are put in place to bring injured workers back to work more quickly. With better integration, as is currently occurring at VGH, further reductions in MSI can be expected.

While 92% of the individuals who entered the PEARS program received physiotherapy, only 44% received work practice modifications and 26% received workplace modifications.



An example of workplace modification at VGH. Staff use lead aprons to protect themselves from ionizing radiation in work areas (e.g. X-rays). The old lead aprons (left) are heavy and cause shoulder fatigue and strain. The new lead aprons (right) are two separate pieces - a top vest and a bottom skirt. This distributes the weight of the apron between a worker's hips and shoulders.



Photo courtesy of PEARS at Royal Columbian Hospital

Perhaps had more participants received work environment or work practice changes, there may have been a greater reduction in injuries during PEARS. The current telephone follow-up study is also attempting to determine if the failure to secure further reductions in time loss injuries may have been related to the lack of adequate emphasis on workplace modifications following the injury.

Once a time loss injury occurred, it was clear that PEARS was successful in returning employees to their regular duties more quickly than prior to the program. Both RNs and HSPs had significant reductions in the time to return to work during PEARS. At the control hospital there were no significant changes in the time to return to work, which lends support to the notion that PEARS did account for the changes observed at VGH.

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The PEARS program marked a shift from what was previously occurring at VGH in several important ways:

1. It attempted to integrate prevention and prompt follow-up of people who are injured;
2. PEARS had strong union involvement in its design, implementation and evaluation. The goodwill created by the bipartite governance, despite the tense political times, was instrumental to the success of the program; and
3. There was a commitment to evidence-based decision-making.

The PEARS program was successful at reducing the time loss and associated costs related to injuries for RNs and HSPs. It is recommended that return-to-work programs incorporate the features included in the PEARS program. PEARS pilots are now underway across the province.

This evaluation of the PEARS program was conducted by the Occupational Health and Safety Agency for Healthcare in BC, the Institute of Health Promotion Research at the University of British Columbia, and Vancouver Coastal Health. Special thanks to the British Columbia Nurses' Union, Health Sciences Association, and Hospital Employees' Union for their support and contributions.

A larger version of this project update has been submitted to a scientific journal for peer-review. We ask that this fact sheet be treated as "draft - pending publication" and not be cited.

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- For further reference material, see the OHSAH website: www.ohsah.bc.ca



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. More resources will be added over time.

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

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