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Only one in five new workers receives safety training

Only one in five Canadians reports receiving safety training in their first year of a new job, according to a study from the Institute for Work & Health (IWH). And young workers and those in jobs with higher physical demands – which are both associated with higher injury rates – are no more likely to receive training than other workers.

Given that many provinces have health and safety legislation that requires employers to provide information to their employees on how to work safely, these findings raise questions.

In this issue

INSTITUTE FOR WORK & HEALTH
INSTITUT DE RECHERCHE SUR LE TRAVAIL ET LA SANTÉ

Research Excellence Advancing Employee Health

The results are reported in a new study, "How many employees receive safety training during their first year of a new job?" which appeared in the February issue of the journal *Injury Prevention*. The study was authored by IWH Associate Scientist Dr. Peter Smith, and President and Senior Scientist Dr. Cameron Mustard.

"Our findings mean that somewhere between 75-80 per cent of workers don't receive information on how to do their jobs safely," says Smith. "That might not be a problem if you're in an office environment – although it could be. But it's definitely a problem in industries where there are a high number of hazards."

As Smith explains, this study came out of a survey conducted by Statistics Canada called the Workplace and Employee Survey (WES). The IWH study used information from three waves of the survey. Information on safety training was gathered from a total of 59,519 respondents who participated in the 1999, 2001 and 2003 surveys. Of these, 5,671 respondents were workers who had been with their employer for less than a year.

"Usually in occupational health and safety research, researchers only have access to workplaces that allow you to come in and ask questions, so you are not sure if the workplace represents other workplaces," says Smith. "But in this survey, Statistics Canada managed to reach about 95 per cent of eligible workplaces."

The study turned up several interesting results. For example, training rates were lowest in the

province of Quebec. While on average 21 per cent of respondents across the country reported receiving training, in Quebec, only 5.5 per cent of males and 12.2 per cent of females said they had been trained. One explanation for Quebec's rate might be that workers receive safety training outside the workplace, and the survey inquired about workplace-based training.

Manitoba had the highest rates, where overall 34 per cent of respondents reported receiving training. In Ontario, the rate was 28 per cent.

Workers at companies that offered family support benefits or other benefit programs were also more likely to receive training.

However, generally there was a lack of trends in the findings, says Smith. "We didn't find any trends by major industry, occupation, age or even gender," he says.

But as Smith pointed out, the reasons behind these findings need to

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What researchers mean by …

meta-analysis

When making decisions that affect many people, policy-makers, clinicians and other decision-makers may turn to research to help inform their choices. Single studies on a topic do provide some information. However, to increase confidence in their decisions, it is better to look at all of the available research.

This is where a meta-analysis can help. A meta-analysis is a type of systematic review. In a meta-analysis, findings from many studies are integrated or "added" in a formal statistical analysis to create one large overview.

The steps of a meta-analysis are:

- define a narrow, focused question that the meta-analysis will seek to answer.
- define and follow rigorous criteria for identifying and selecting studies to include in the analysis.
- collect the data from these studies, and convert estimates or results into a common measure across studies, if possible.
- combine and analyze the data, and develop conclusions to answer the question.

In general, a meta-analysis aims to answer the questions: What is the effect of a program or treatment, based on all the relevant research to date? How large is the effect?

Meta-analysis in practice

Let's say you wanted to know if rest breaks reduced the rate of low-back pain in a particular work setting. If you gathered all the research on rest breaks and low-back pain, you might find hundreds of research articles.

You may also find studies so small that you wouldn't be confident about the findings. Various articles might seem to contradict each other, with some showing that rest breaks reduced low-back pain rates, and others finding they had no effect.

As explained earlier, in a meta-analysis these findings or outcomes would be statistically combined to provide an overall answer. But first, they need to be converted into a common measure to reach any conclusions, and this can be difficult. With low-back pain, different studies might measure back pain in workers using different scales or questionnaires. Some additional calculations would be needed to achieve a common measure.

In some cases, outcomes are routinely based on a common measure. For example, in cancer research, one widely used outcome is patients' survival rates five years after diagnosis. When many different studies use this common outcome, their results are easier to combine.

For a meta-analysis on rest breaks and back pain, the reviewer might take study findings using different low-back pain scales and calculate a standard "effect" for each study. This "effect" becomes the common measure. By statistically combining the effects from all studies, reviewers may see if there is an overall effect from rest breaks, and how large the effect is. However, the reality is that different studies on a topic may not even measure the same outcome, and there might not be a way to make all the results comparable.

Let's now compare how conclusions are expressed in meta-analysis and other systematic reviews. In the example above, a systematic review may show that six out of eight quality studies show that rest breaks reduce the rate of low-back pain. Using a meta-analysis, which integrates the effect from all the studies, you might find that the numerical size of this effect is very low.

Benefits of meta-analysis

A meta-analysis has many benefits. By combining results into one large study, it reduces the time and energy that decision-makers spend looking at research.

But the real benefit lies in the way meta-analysis can make sense of inconclusive and conflicting data from each original study. Through meta-analysis, researchers can combine smaller studies, essentially making them into one big study, which may help show an effect. Additionally, a meta-analysis can help increase the accuracy of the results. This is also because it is, in effect, increasing the size of the study.

By helping to bring into focus the sometimes blurry picture developing from the abundance of research evidence on any given topic, a meta-analysis is a very effective type of review.

Safety climate shows promise in injury prevention

Although workplace injury rates have declined in recent years across Canada, workers are still hurt on the job every day. Finding innovative methods to prevent injuries continues to be a priority.

One approach that shows great promise is when organizations adopt practices to strengthen their safety climate.

Safety climate refers to workers' shared perceptions of their firm's approach to safety. A company's safety climate, as determined by staff surveys, can signal to employers that they need to take action to prevent workplace injuries.

The Institute for Work & Health (IWH) has several ongoing and proposed research projects in this area.

"Safety climate has enormous potential to improve a company's health and safety performance and reduce workplace injury rates," says IWH Scientist Dr. Phil Bigelow.

The Safety Climate Survey is a standardized, anonymous questionnaire completed by employees, which provides the measure of a company's safety climate. Studies have shown that safety climate is related to safety performance, so the results of these surveys may provide an efficient, reliable way to predict injury.

"Safety climate has enormous potential to improve a company's health and safety performance and reduce workplace injury rates," says IWH Scientist Dr. Phil Bigelow.

"If a company routinely monitored its safety climate, it could lead to sustainable improvements in occupational health and safety (OHS) performance," says Bigelow.

The safety climate field was pioneered by Dr. Dov Zohar, an IWH adjunct scientist who worked at the Institute as a visiting scientist from 2003-2005. Zohar, who is a professor at the Israel Institute of Technology, showed in a recent study that the original 32-question safety climate questionnaire could be reduced to eight questions. This makes it more feasible to administer in workplaces.

"The Institute has been involved in two main directions in safety climate research," says Zohar. "One direction is in implementing a new approach for safety climate improvement through safety leadership development. This project took place during my stay at IWH, using a large steel production company in Nova Scotia, and it resulted in a significant improvement in their safety records."

The other area is in validating both the long and brief versions of the survey as a way of predicting a company's OHS outcome, he says.

Bigelow is currently involved in two areas of research involving safety climate. In one, a team of researchers is proposing to introduce safety climate questions into the Statistics Canada Workplace and Employee Survey. The questions will be tested in Ontario and British Columbia (B.C.) to determine if safety climate can be accurately measured by the eight questions. These questions could then be incorporated in the Workplace and Employee Survey to provide benchmarking information for the overall status of safety climate in companies across the country. One aspect of this project is to introduce safety climate monitoring and leadership development to unions, management and workers in B.C. and Ontario.

An important question is what effect OHS prevention programs have on safety climate. Bigelow and his colleagues are examining whether safety climate will change in companies that have received interventions. In one study with Ontario's Electrical & Utilities Safety Association (E&USA), safety climate is being measured before and after a participatory ergonomic intervention. "We believe that firms that are implementing interventions will improve their safety climate," says Bigelow.

In Brief ...

A firm's safety climate can signal that employers need to take action to prevent workplace injuries. Several research projects at IWH are exploring this field.

A second study in this area, with the Industrial Accident Prevention Association (IAPA), is in its initial stage. Researchers will examine changes in safety climate that result from participating in an incentive program that aims to improve a firm's OHS management system.

(continued on page 4)

NAOSH Week events run in May

North American Occupational Safety and Health (NAOSH) Week runs from May 6-12 this year. This annual event focuses on the importance of preventing injury and illness in the workplace. In Ontario, NAOSH Week events include the Steps for Life walkathon in Thunder Bay, Hamilton and Toronto to raise funds for families who have experienced a workplace tragedy.

The Institute for Work & Health is involved with Ontario's NAOSH week committee, which consists of many provincial prevention partners. The Ontario committee has created a health and safety checklist to raise awareness among employers. For more information, visit the NAOSH Week website at www.naosh.org.

IWH scientist wins teaching award

Dr. Ellen MacEachen, an Institute scientist, was presented with a teaching award from the University of Toronto (U of T). MacEachen received the Robin Badgley Award for Excellence in Teaching (Early Career) at the annual awards dinner of the Department of Public Health Sciences at U of T in March. She teaches a course in qualitative research methods for graduate students.

Compensation symposium in June

Dr. Cameron Mustard, President of the Institute, has been invited to speak at the Third International Workers' Compensation Symposium in Munich, Germany. This meeting, which will take place in June, is being organized by the Workers' Compensation Unit of Munich. The symposium features speakers from the International Labour Organization, World Health Organization and several national compensation systems in Europe, among others.

New Canadian Cochrane website

The Canadian Cochrane Network and Centre has launched a new website at www.ccnc.cochrane.org. This new site is designed to have information geared to specific audiences such as researchers, health-care providers, consumers and policy-makers. In addition, presentations are available from the 5th Canadian Cochrane Symposium: Knowledge for Health, held in February. The Institute is linked to this network as IWH hosts the Cochrane Back Review Group, one of five review groups in Canada that conducts systematic reviews on the effectiveness of clinical treatment.

Guidelines conference in August

The Guidelines International Network (G-I-N) is holding its 4th Annual Conference in Toronto from August 22-25. The Institute is one of the co-sponsors of this event, which is the first North American conference of its kind. The theme of the conference is "Collaboration in Clinical Practice Guidelines." There will be sessions on successful implementation, guidelines to help policy-makers, and fitting clinical guidelines into the real world.

Safety climate shows promise (continued from page 3)

IWH Adjunct Scientist Dr. Harry Shannon is also involved in a safety climate project with E&USA researchers. Working with five firms in the utilities sector, the researchers identified and added several questions to the Safety Climate Survey specific to utilities workplaces. The aim is to see whether the precision of the survey can be improved in specific sectors. These additional questions have since been tested on employees at these firms. Findings were presented at the IAPA annual meeting in April 2007. ✪

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A source of research-based information from the Institute for Work & Health on....

Prevention

Find practical tools to help prevent workplace injury. Recent updates include our systematic review on effective prevention programs in the health-care sector, and the MSD Prevention Guideline for Ontario.

Clinical Practice

See research summaries of clinical studies for physicians, physiotherapists, chiropractors and other clinicians, and visit the Cochrane Back Review Group website, housed at the Institute.

Return to Work (RTW)

Read our systematic review on effective RTW programs, as well as the Seven Principles of Successful Return to Work.

Workforce and compensation

Learn about issues in the Canadian workforce and find an overview of lost-time compensation claims in 2004 and 2005.

Safety training rates low (continued from page 1)

be examined further. "We don't know the reason why the rate of training is so low. Is it because employers don't perceive there are any benefits?"

Smith notes that it's still not clear what constitutes the best type of safety training to prevent injury. "We know people need training, but we don't really have any guidelines as to what type and how much training," he says. "The research into the effectiveness of training and workplace interventions is developing and becoming more rigorous."

In fact, other IWH scientists are completing a systematic review on studies that look at the effectiveness of training and education programs.

The current findings indicate that having legislation alone isn't effective, he says. "Our numbers show that legislation does not compel an employer to provide training to employees." ✪

Benchmarks help firms compare disability management practices

A few major Canadian companies have begun to recognize the importance of using "best practices" in disability management strategies with their injured employees.

There is evidence to suggest that companies could save money by adopting such strategies. Yet on a broader scale, most employers want to see the proof that any such investments will pay off.

Independent research could provide this type of information, but it takes great effort, time and resources for researchers to build relationships with individual employers or private insurers, who may be reluctant to share their information on disability costs.

The Workplace Disability Management Benchmarking Collaborative (WDMB), based at the Institute for Work & Health (IWH), was created to tackle these barriers.

"The project gives companies an incentive to participate," says Dr. Donald Cole, a senior scientist at IWH. "The results will provide companies with indicators on how well they are doing, relative to their peers."

The premise is simple. Workplaces that participate – which include 11 major organizations to date – will report on their disability management experiences. These confidential findings will be pooled to create a benchmark, or a standard point of reference. "The project gives companies an incentive to participate," says Dr. Donald Cole, a senior scientist at IWH, who helped initiate the collaborative. "The results will provide companies with indicators on how well they are doing, relative to their peers."

The collaborative is a combined effort of the Institute, Clarke Brown Associates, Organizational Solutions and workplaces. This approach builds on the success of a similar American initiative called the Employer Measures of Productivity, Absence and Quality (EMPAQ).

So far, the companies on board include five major Canadian banks, three large insurance companies, and three other organizations including McMaster University in Hamilton and the Toronto Rehabilitation Institute.

"What I'm hearing consistently is that there isn't any other organization, besides the Institute, which can bring all these parties together to share best practices," says Leslie Stephenson, leader of the WDMB project. "The Institute has helped create a bridge between scientists and physicians, and corporate executives in human resources, finance and marketing."

The collaborative has been piloting a set of benchmarking measures, which have been provided by a representative from each company. These measures fall into three broad categories: outcomes, processes and the satisfaction of participants in the disability process.

One example of an outcome measure on short-term disability asks for the number of new claims per 100 employees covered by insurance. An example of a long-term disability measure is the lost number of workdays per active compensation claim. The outcome measures are similar to those used by EMPAQ.

"In the first stage of the program, we are also finding out which benchmarks are useful to companies," says Irina Rivilis, co-ordinator of the WDMB, who is a PhD candidate in epidemiology at the University of Toronto.

Employers were therefore asked to rate whether their organization has calculated each proposed measure, and if not, how useful it would be to them. They were also asked how easily each item could be collected.

The second broad category looks at processes, such as the effectiveness of case management. The third measures the satisfaction of all parties, including the employee, the supervisor or manager, other managers and employee representatives/unions.

The collaborative will hold an invitational forum with all current and prospective partners on May 15 in Toronto to present its findings. The goal is for collaborative partners to sustain long-term membership, similar to the EMPAQ initiative.

In Brief ...

Several major Canadian firms have joined a collaborative to create benchmarks of their disability management approaches, with the goal of improving practices and saving money. The collaborative, which builds on the success of a similar American initiative, is based at the Institute for Work & Health.

"We are also looking to expand into the manufacturing sector," says Rivilis.

The initial phase of the collaborative was funded by a grant from Ontario's Workplace Safety & Insurance Board (WSIB)'s Research Advisory Council. Following this, external partners in the financial and insurance sectors each contributed $10,000 to obtain the first set of benchmarks.

For further information, please contact Leslie Stephenson by email at leslie_stephenson@wdmb.ca ✪

infocus

Preventing injury in health-care workers

It is a well-established fact that health-care workers face a higher risk than other workers of developing painful musculoskeletal disorders (MSDs), which affect muscles, tendons, nerves or other soft tissues. In health-care workers, back pain is one of the most common MSDs. In Ontario alone, approximately 400,000 people are employed in the health-care sector.

There are many programs designed to prevent MSDs in health-care workers, ranging from the use of mechanical patient lifts to physical exercise programs to ergonomic programs.

But are these programs all effective? And which ones are better? The Institute for Work & Health recently completed a systematic review of all the research on programs designed to prevent MSDs in health-care workers.

One goal was to provide decision-makers with scientific evidence to help choose effective programs.

"One of the main causes of MSDs in health-care workers occurs from lifting or transferring patients," says Dr. Benjamin C. Amick III, the Institute's scientific director, who led the review. These patient handling activities place high levels of force on the low back. In fact, they far exceed the lifting limits recommended by the U.S. National Institute for Occupational Safety and Health.

Recent research also suggests that MSDs in health-care settings may also result from other events such as assaults by patients, slips, trips and falls. As well, MSDs occur from non-patient related health-care jobs or tasks, such as maintenance work.

Jessica Tullar, a PhD student of Amick's, had been researching interventions in nursing homes and was surprised to find few studies in this area. Tullar is at the University of Texas School of Public Health in Houston, Texas.

The scope of the systematic review initially focused on nursing homes and long-term care facilities. "Because there was not much research on long-term care facilities, we chose to look at all health-care facilities," says Tullar, a co-author of the review. "The tasks of these workers are similar across health-care facilities."

Until now, there has been only one systematic review on injury prevention for patient lifting, but no one has reviewed the broad spectrum of programs in health-care settings.

Canadian-U.S. review team

A joint Canadian-U.S. team was assembled to conduct the review, including reviewers from the Institute and from the University of Texas.

The team addressed the following research question: "Do occupational safety and health interventions in health-care settings have an effect on musculoskeletal health status?"

To answer this question, the reviewers followed a set of systematic steps. First, they identified more than 8,400 possible articles of interest in their search of various databases. These studies had been published in journals in which independent scientists peer-reviewed

Summary of findings

Overall, the systematic review found moderate evidence that occupational safety and health prevention programs have a positive effect on workers' musculoskeletal (MSK) health status in health-care settings.

Moderate evidence means at least two studies of medium-high or high quality agree on the same findings.

There is also moderate evidence that the following two interventions had a positive effect:

1. Patient handling with the following three components:
   - a policy change at the worksite, such as zero-lift policies
   - the purchase and implementation of new patient handling equipment, such as overhead lifts or floor lifts
   - training on the new equipment and on patient handling

2. Exercise training programs with aerobics or strength training or both.

the research.

The reviewers identified 40 studies that had information relevant to their research question. After assessing the quality of each study, reviewers found 16 studies whose quality was sufficient to give them confidence in the findings.

From these 16 studies, the review team concluded there was moderate evidence that prevention programs had a positive effect on workers' musculoskeletal health in health-care settings. Moderate evidence meant at least two studies of medium-high quality agreed on the same findings.

Two 'practices to consider'

Reviewers also found moderate evidence for two specific programs. "Because the evidence wasn't strong, these should be taken as 'practices to consider' rather than 'best practices' or policy recommendations," says Shelley Brewer, also an author and doctoral student of Amick's at the University of Texas.

One practice to consider was patient handling interventions with the following three components:

- a policy change at the worksite, such as a zero-lift policy
- the purchase and implementation of new patient handling equipment, such as overhead lifts or floor lifts
- training on the new equipment and on patient handling

Two out of three studies on this three-part intervention showed positive effects. In one study, the intervention reduced lost or restricted workdays, injury rates and workers' compensation rates. In the second study, there was a reduction in low-back and shoulder pain reported by workers. The third study showed no effects.

Another practice to consider was exercise training. All six studies on exercise training – including aerobic and/or strength programs – showed positive health effects.

These training programs were targeted at health-care workers who had already experienced pain. Four studies described their exercise programs as general "physical fitness" or "calisthenics" programs. Two studies looked at exercises that specifically improved strength or endurance.

"One of the main causes of musculoskeletal disorders in health-care workers occurs from lifting or transferring patients," says Dr. Benjamin C. Amick III, IWH Scientific Director

In all studies, there were positive health effects. Workers reported a decline in pain symptoms, including reductions in the frequency, intensity and duration of their pain.

Does this evidence mean that the other interventions were not effective? Not at all, the reviewers reassure. For many programs, there was only one study that looked at their impact.

"We can't comment on the quality of these programs because of the low number of studies," says Tullar. "In the future, additional research might show that any of these programs are effective."

Some examples of these other interventions included: back school (an

Ontario's Patient Lift Initiative: early findings

Nearly 14,000 new mechanical patient lifts for health-care settings have been funded by Ontario's Ministry of Health and Long-Term Care. As part of its Patient Lift Initiative, the ministry committed about $80 million between 2004 and 2006 to purchase and install these lifts and to train health-care staff in their use.

The Institute for Work & Health was selected to evaluate the impact of this initiative. The final results of this evaluation will be available in summer 2007, but some early findings on the current status of this workforce have already emerged.

The initiative provided funding for one patient lift per 10 beds in long-term facilities. Before the initiative, there was approximately one lift per 20 beds.

The research team has interviewed 893 caregivers in 53 facilities. More than nine in 10 caregivers were female. Almost 80 per cent said their work was "demanding" or "very demanding." On average, caregivers had performed about 38 patient lifts or transfers in the previous eight-hour shift. More than half of these tasks were done without any equipment.

In the previous 12 months, 17 per cent had reported a work-related musculoskeletal disorder (MSD) to the WSIB, and 20 per cent had missed work. Almost half (44 per cent) had visited a health-care provider about their pain, and 61 per cent had experienced pain.

Among those experiencing pain, 73 per cent believed the cause was resident lifting and transferring. Repetitive movements were attributed as a cause of pain for 60 per cent of caregivers.

These initial findings will be compared to the situation of caregivers after the lifts have been installed, with approximately a year between interviews. The research team will evaluate if health-care providers perform more handling tasks with the new equipment, if there are fewer formal reports of MSDs, and if the incidence of bed sores in residents declines.

As part of the study, researchers are looking at facility policies and procedures, workloads and health outcomes. As well, they will examine workers' compensation claims for all 590 long-term care facilities for five years prior to the lift initiative (2000-2004) and for the two-year intervention period (2005-2006).

Participation in the study was high and was well-received. "Overall [the study] was a good experience for our facilities and it helped to reinforce our zero lift policy," noted one facility manager. "Staff gained a heightened awareness of safety and realized the policies and practices we are using are for their benefit."

industry-based program), cognitive behavioural training (such as coping and communication training or relaxation training) and broad-based MSD prevention programs (in which an ergonomist visited the site, followed by training or exercise and ergonomic changes).

Stakeholders part of review

An important part of the review was to include stakeholders from relevant fields to provide feedback on various aspects of the review.

"Workplaces do not have the resources to access research and may not have the skill to interpret scientific papers," says Anne Duffy, provincial ergonomist with Ontario's Ministry of Labour, who participated in the review process. "Having the Institute do these systematic reviews is of great value."

Representatives from hospitals, nursing homes, government agencies, professional associations, insurance companies and lift manufacturing companies were invited to meetings at the start of the review and at the end, to hear results. These meetings were held at the Institute and at the University of Texas.

Duffy says that the process helped her, as a non-researcher, understand the importance of systematic reviews.

"It is encouraging that Ontario seems to be headed in the right direction with the Patient Lift Initiative," she says (see sidebar, page 7). "The initiative requires facilities to have the three patient handling components that the systematic review showed had a moderate level of evidence."

However, she admits that she was surprised that there were so few studies of high quality. "One message, simply, is that more work needs to be done."

Why did so many studies not make the quality cut-off point? There were a number of reasons. They included the way studies were designed, the reporting of statistics, and how the final results were reported.

"The systematic review process teaches researchers what information they need to include when they're writing about their own studies," says Tullar. "If, as a researcher, you don't say exactly what you did, you can't get credit for it."

Another important message from the review is that the current state of peer-reviewed research has limited high quality evidence on the effectiveness of MSD prevention programs.

"We are frustrated that we are unable to make stronger recommendations," says Amick. "The overwhelming message from our review is that more high quality research must be produced, and we consider this a priority."

For a full copy of the review in PDF format, please visit our website at: www.iwh.on.ca ✪

Nurses report high rates of back pain, physical demands

Canadian nurses report higher rates of back pain and physical demands at work, compared with the general working population. These findings emerged from a landmark survey released in December 2006 by Statistics Canada, the Canadian Institute for Health Information and Health Canada.

Nearly 19,000 Canadian nurses participated in the 2005 National Survey of the Work and Health of Nurses. It was the largest, most comprehensive survey ever conducted on the working conditions of Canadian nurses.

Two scientists from the Institute for Work & Health, Drs. Benjamin C. Amick III and Michael Kerr, served on a national advisory group for the survey. The Institute was also involved in initiating the project in 2000.

An estimated 314,900 Canadians were employed as regulated nurses in 2005, including registered nurses, licensed practical nurses and registered psychiatric nurses. About 95 per cent of Canadian nurses were women.

Some of the findings from the survey:

- **Physical demands**: More than 60 per cent of female and male nurses said their jobs presented high physical demands, compared with 38 per cent and 46 per cent of all working women and men, respectively.
- **Back problems**: A quarter of female nurses (25 per cent) reported back problems, compared with 19 per cent of employed women overall.
- **Pain**: In the past 12 months, more than one in three nurses (37 per cent) had experienced pain that prevented them from carrying out normal daily activities. Three-quarters of the nurses who had this level of pain said that it was the result of work-related factors.

- **Injury**: Nurses in British Columbia (B.C.) and Saskatchewan were more likely than nurses in other provinces to have been injured on the job. For example, 12 per cent of B.C. nurses and 11 per cent of Saskatchewan nurses reported a work-related injury, compared with 5 per cent of nurses in Prince Edward Island.