A quarterly publication of the Institute for Work & Health
Issue 70 Fall 2012

at work

IN THIS ISSUE

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Understanding western Canada's higher risk of work injury

What is driving the higher risk of job injury in western Canada? New research from the Institute for Work & Health suggests it goes beyond the type of work found in the west.

Workers in Saskatchewan, Alberta and British Columbia have about a 30 to 50 per cent higher risk of work injury compared to their Ontario-based counterparts. And this higher risk still exists even after taking a wide range of factors into account, including the type of industries in which people work.

This finding comes from new research conducted by the Institute for Work & Health (IWH) and led by IWH Scientist Dr. Curtis Breslin. Recently submitted to the *Annals of Epidemiology,* the research looks at geographic differences in work injuries for all workers in Canada.

The study focuses on the degree to which personal factors (such as age and gender), work characteristics (such as nature of job and industrial sector) and area-level factors (such as a region's socioeconomic status) are associated with provincial differences in work injury risk. When the researchers learned that these factors *do not* appear to account for provincial differences, it led them to suggest that something else was affecting workplaces at the jurisdictional level.

"Given that, in Canada, primary responsibility for occupational health and safety falls on the provinces, the finding that important determinants of work injury are potentially operating at a provincial level may be useful to provincial governments in planning prevention strategies," says IWH Research Operations Coordinator Sara Morassaei, lead author of the submitted journal article. This study cannot say what those "determinants" are, although Morassaei adds that "it raises the possibility that broader elements, such as a jurisdiction's economic or health and safety policies, act as risk factors."

Study explores provincial differences

There has long been evidence that workers in Canada's western provinces have a higher incidence of workers' compensation claims

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IWH scientist wins award

On June 20, Institute for Work & Health (IWH) Scientist **Dr. Dorcas Beaton** was awarded the Occupational Sciences and Occupational Therapy Research Innovation Award at the annual Thelma Cardwell Research Day, at the University of Toronto. This award was given for Beaton's body of work on the accurate measurement and interpretation of worker productivity.

Two IWH scientists promoted

IWH Scientist **Dr. Ellen MacEachen** was promoted to the rank of associate professor in the Dalla Lana School of Public Health at the University of Toronto. IWH Scientist **Dr. Emile Tompa** was promoted to associate professor in the Department of Economics at McMaster University.

IWH scientists contributing to book

IWH Associate Scientist **Dr. Ivan Steenstra** and Interim Scientific Director and Senior Scientist **Dr. Sheilah Hogg-Johnson** contributed a chapter, "Predicting return to work for workers with low-back pain," in the upcoming Springer publication *Handbook of work disability: Prevention and management*.

In the same publication, Hogg-Johnson and Scientist **Dr. Ellen MacEachen** co-authored a chapter titled "Methodological issues in work disability prevention research," and MacEachen authored the chapter "Understanding work disability systems and intervening upstream." For information on this Springer book when it is published, go to: www.springer.com.

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WHAT RESEARCHERS MEAN BY...

Randomized Controlled Trial

One of the most powerful research tools, the randomized controlled trial is considered by some to be the "gold standard" for generating reliable evidence.

In a researcher's toolkit, the **randomized controlled trial** (RCT) is one of the best ways to produce valid evidence on the effectiveness of interventions, from prevention programs to treatment options. According to the established hierarchy of evidence, the most valid evidence from original research comes from RCTs, followed by cohort studies and then case control studies (see *At Work,* Fall 2005: www.iwh.on.ca/wrmb/cohort-studies-case-control-studies-and-rcts).

Here's how RCTs work. Study participants are deemed eligible through a recruitment process that involves specific criteria for inclusion and an informed consent process.

Those eligible are randomly assigned, in a process that's not unlike flipping a coin, into one of two groups or 'arms' of the study: (1) the intervention group, or (2) the control group. The first group receives the intervention being studied, which could be a new treatment or procedure. The second does not, and instead receives an inactive placebo, conventional treatment or nothing at all.

The cornerstone of RCTs is this: Because the allocation process is random, it minimizes the chance that people who received treatment and those who did not had different characteristics. In other words, with random allocation, any differences in outcomes between the intervention group and the control group can be attributed to the intervention, as opposed to any of the participants' attributes like age or disease.

An RCT in action

Let's say you're a scientist interested in non-medicated pain relief for fibromyalgia. Does acupuncture help? Four years ago, IWH Associate Scientist Dr. Andrea Furlan posed this exact question in an RCT published by the *Journal of Rehabilitation Medicine* (vol. 40, issue 7, pp. 582–588).

In the recruitment phase of this study, the research team sought to enlist female patients between the ages of 20 and 70 years diagnosed with fibromyalgia according to the 1990 American College of Rheumatology classification criteria. To be included in the study, patients needed to have reported moderate to severe pain intensity and to be using antidepressants.

In Furlan's study, 58 women with fibromyalgia were allocated randomly to receive either: (1) acupuncture with tricyclic antidepressants and exercise, or (2) tricyclic antidepressants and exercise only. Patients rated their pain on a visual rating scale, and quality of life was also evaluated using a blinded assessor (i.e. the researcher assessing the results).

At the end of 20 sessions, patients in Furlan's RCT who received acupuncture had significantly less pain than the control group. This study concluded that the addition of acupuncture to usual treatments for fibromyalgia may be beneficial for pain and quality of life for three months after the end of treatment.

This conclusion would not have been possible without the use of an RCT. Its random allocation process is one of the best ways to secure valid evidence.

To see other columns, go to: www.iwh.on.ca/what-researchers-mean-by

Work environment may put women at risk of diabetes

Limited discretion and authority to influence how to meet the demands of their job may put women at risk of diabetes, says a new study from the Institute for Work & Health and the Institute for Clinical Evaluative Sciences.

Women with low job control at work are twice as likely to develop diabetes compared to women with high job control, according to a nine-year study by researchers at the Institute for Work & Health and the Institute for Clinical Evaluative Sciences (ICES).

Published in the September issue of *Occupational Medicine* (vol. 62, no. 6, pp. 413-419), the study confirmed that high body weight was the principle risk factor for the development of diabetes among working-age adults in Canada. What was surprising in the study was the observation that the proportion of cases of diabetes among women that could potentially be attributed to low job control was higher than that for behaviours such as smoking, drinking, lack of exercise and not eating fruits and vegetables. Low job control was not associated with the incidence of diabetes among men.

The study suggests job control—a person's ability to influence how they meet the demands of their job and how they use their skills—could potentially be an important modifiable risk factor to reduce the incidence of diabetes among women. "With additional research from intervention studies, we may learn that improved job control for women, such as providing autonomy over the way they do their jobs, could be considered as part of a comprehensive diabetes prevention strategy," says IWH Scientist Dr. Peter Smith, lead author of the study.

The Canadian Diabetes Association agrees. "Given the findings of this study, it is recommended that job control along with workplace wellness programs be evaluated in workplaces as a strategy to lower the risk of diabetes in women," says Dr. Janet Hux, the association's chief scientific advisor.

Prevalence of diabetes growing

Diabetes is a growing public health concern. Over nine million Canadians are living with diabetes or pre-diabetes (i.e. having blood glucose levels that are higher than normal, but not high enough to indicate diabetes). In Ontario, the prevalence of diabetes almost doubled between 1995 and 2005.

And yet, the relationship between work stress/psychosocial work conditions and diabetes has not been well examined by researchers to date. "There is a strong body of work that has established a relationship between the psychosocial work environment and high blood pressure and heart disease, but fewer studies examining work stress and the risk of diabetes," says Smith.

Large group followed for nine years

The study used a representative sample of the Ontario population drawn from the 2000-2001 Canadian Community Health Survey (CCHS). For nine years, the study followed 7,443 working-age adults actively employed (but not self-employed) on the date of the survey who had no previous diagnosis of diabetes.

The survey provided information on participants' health behaviours such as smoking, physical activity, drinking, and fruit and vegetable consumption. It also provided information on their psychosocial work environment, including job control, psychological demands and social support, which was collected through an abbreviated Job Content Questionnaire included in the CCHS.

This information was linked to the Ontario Health Insurance Plan (OHIP) database for physician services and the Canadian Institute for Health Information Discharge Abstract Database (CIHI-DAD) for hospital admissions. This allowed researchers to detect new cases of diabetes among the sample during the nine-year follow-up period.

Study found increased risk for women

Researchers found that low levels of job control were associated with an increased risk of diabetes among women. After taking a wide range of factors into account—including age, ethnicity, body mass index, health behaviours (as mentioned above) and more—women with low job control at work were still 2.04 times more likely to develop diabetes than women with high job control. In all, the proportion of cases of diabetes among women that could potentially be attributed to low job control was 19 per cent—higher than that for other health behaviours such as smoking, drinking, lack of physical activity and poor eating habits, but lower than that for obesity, to which 42 per cent of cases could be attributed.

The two primary pathways linking high psychosocial work stress to diabetes risk are: (1) disruptions to neuroendocrine and immune system functioning, and increased or prolonged cortisol and sympathetic hormone release, in reaction to stress; and (2) changes in health behaviour patterns, particularly those related to diet and energy expenditure, possibly as coping mechanisms.

To read the full study, see the open access version of the paper at: http://dx.doi.org/10.1093/occmed/kqs128.

Fall symposium addresses injury prevention and financial incentives

In today's competitive global economy, financial incentives are often seen by governments as an effective way to encourage employers to invest in occupational health and safety. But how well do these incentives work?

This is one of the key questions to be addressed at a symposium this fall organized by the Institute for Work & Health (IWH). Taking place on November 29 and 30 in Toronto, the symposium will provide a forum for researchers, students, policy-makers, injured worker communities, and employer and worker organizations to discuss the social, economic and policy implications of using financial incentives as a mechanism for preventing workplace injuries.

Financial incentives are system-level workers' compensation incentives to encourage employers to invest efforts and resources in injury, illness and work disability prevention. Examples include experience rating of premiums and premium-setting modifications based on health and safety certification or specific prevention investments.

This international event will present the latest research, grouped around these key themes: the behavioural incentives of experience rating; workplace injury prevention; and claims and cost management issues.

Among the keynote speakers is Harry Arthurs, chair of the 2012 Ontario Workplace Safety and Insurance Board funding review.

The symposium is being organized by IWH Scientists Dr. Ellen MacEachen and Dr. Emile Tompa, both of whom have explored the effect of experience rating on workplace safety in their research (see *At Work*, Spring 2012 and Summer 2012).

For more information or to register, go to: www.iwh.on.ca/prevention-incentives-2012

BREAKTHROUGH CHANGE:

Finding and describing firms that make large OHS improvements

What changes, why and who's driving the change in firms that make large improvements in workplace health and safety? Possible answers are coming from the first phase of an ongoing study at the Institute for Work & Health that is exploring the process of "breakthrough change."

Large improvements in health and safety can be driven by mid-level people within an organization, such as dedicated health and safety professionals or joint health and safety committee chairs.

This is one of the early results emerging from an ongoing study at the Institute for Work & Health (IWH) that is exploring "breakthrough change"—i.e. how workplaces go from being not-so-good to good performers on the occupational health and safety (OHS) front.

"While senior management support is important, we are finding that large change is often not driven from the top down," says IWH Associate Scientist Lynda Robson, the lead researcher on the study. "An internal OHS advocate can be the driving force. This is exciting, because it widens the possibility of who can be the change agents in organizations."

Study explores change in OHS performance

Research has identified the characteristics of firms that perform poorly or extremely well with respect to work-related injury and illness prevention, but it hasn't shown what it takes to go from one to the other. "We wanted to explore one way of filling this research gap and focus on the change process," says Robson.

To do this, Robson first had to find workplaces that had undergone "breakthrough change" (BTC), which the study

IDENTIFYING BREAKTHROUGH FIRMS

Finding a way to identify firms that have gone from being not-so-good to good OHS performers is one of the most important contributions of the Institute's breakthrough change research. The research team came up with the following process.

- Using records from Ontario's Workplace Safety and Insurance Board (WSIB), the team gathered data for 2,600 firms with 75 or more employees from 1998 to 2008 and in WSIB premium rate groups with 20 or more such firms in 2008.
- From among this group, the team identified 67 organizations that, during the 11-year period from 1998 to 2008, went from being in the bottom half of their rate group with respect to their OHS performance (i.e. having the highest workers' compensation claim rates, including both lost-time and no-lost-time injuries) to the top 20 per cent (i.e. having the lowest claim rates).
- Through a consensus process, the team selected from these the 32 firms whose claim rate patterns were the most convincing.
- Finally, to ensure that the improvement in workers' compensation claim rates was due to purposeful OHS change—and not something else like downsizing, contracting out hazardous work or claims management—the remaining firms were called for a brief interview to find out what changed and why.

After removing those firms that didn't respond to calls, refused to be interviewed, or couldn't confirm the change was intentional, 12 firms were left standing as BTC firms. "Therefore, according to this method, a conservative estimate is that for every 200 firms you have right now, one of them will experience BTC in the next decade," says Robson.

defines as large, intentional, firm-level improvement in the prevention of injury or illness. She and her team devised a method that she hopes will prove useful to other researchers and health and safety professionals and policy-makers in Ontario and beyond (see box on page 4).

Working with two health and safety associations that made initial contact with potential BTC firms (Workplace Safety and Prevention Services and Public Services Health and Safety Association), Robson was able to gather information on 12 firms that, according to her definition, had undergone BTC during the period from 1998 to 2008. She presented these findings from the first phase of the study in June at the Canadian Association for Research on Work and Health conference.


Dr. Lynda Robson

Based on these 12 firms, this is what the research is showing so far about the characteristics of BTC organizations.

Multiple interventions are necessary. In all cases, the organizations introduced six to 12 distinct changes that contributed to their improvement. This, says Robson, confirms that there are no "magic bullets" when it comes to improving OHS. "This isn't surprising, given the complex nature of workplaces," she adds. "The workplace is a system. You can't expect to change only one part and affect outcomes system-wide."

Among the changes made by these BTC firms, the following were the most common:

- improved OHS education and training;
- additional OHS personnel through hiring or reassignment;
- new or upgraded workplace equipment, tools and/or machinery;
- enhanced hazard identification;
- more active joint health and safety committee (JHSC);
- new/enhanced return-to-work program;
- increased use of external expertise;
- enhanced OHS policies and/or procedures; and
- improved OHS information systems and reporting.

The prevention system can instigate change. As for the push behind the change, the most common reason (mentioned by one third) was an intervention from Ontario's prevention system (e.g. Ministry of Labour enforcement, Workplace Safety and Insurance Board Workwell audit, health and safety association outreach).

A mid-level OHS advocate can drive change internally. When asked to explain who was behind the change within the organization, only a sixth pointed to senior management. Most (one third) said it was an internal advocate, such as an OHS manager or worker JHSC co-chair; the rest were unsure.

"Senior management needs to allow people to spend time on health and safety, or support equipment purchases or program changes suggested," says Robson. "But it doesn't look like senior management has to drive the change. It looks like an internal advocate at the mid-level can make a lot of difference."

The "how" of change up next

As part of the same study, Robson and her team took a close look at four BTC firms, digging deep into not only what changed and why, but also how. Findings from this second phase of the study are currently being compiled and will be ready to share in early 2013. Watch for more in a future *At Work*.

Nachemson lecture: Keeping pace with the changing world of work


Dr. Michael Silverstein

The Institute for Work & Health is pleased to announce that Dr. Michael Silverstein, a professor in the University of Washington's School of Public Health and former assistant director of Industrial Safety and Health with the Washington State Department of Labor and Industries, will deliver this year's Alf Nachemson Memorial Lecture.

In this lecture, Dr. Silverstein will offer his views on how we might modernize our regulatory standards and practices to keep pace with the changing world of work. He will also address the challenge of using research to inform and implement occupational health and safety policies and programs.

This lecture takes place on Thursday November 15 at Toronto's Design Exchange. This year, the lecture starts a little earlier. Doors open at 4.00 p.m., and the lecture will start at 4.30 p.m. A reception follows from 5.30 to 6.30 p.m.

The Alf Nachemson Memorial Lecture was established in 2002 to honour Dr. Nachemson's significant contribution to the use of research evidence in clinical decision-making.

2012 Alf Nachemson Memorial Lecture

Dr. Michael Silverstein
Thirty years after OHSA:
Keeping pace with the changing world of work

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Over-qualified recent immigrant men at increased risk of job injury

Men recently immigrated to Canada who have higher educational qualifications than are required for their current Canadian job have an increased risk of workplace injury, suggests new research that raises key questions about why this is happening and what can be done to address it.

Men recently immigrated to Canada who have higher educational qualifications than are required for their current job are more than three times as likely to report a work-related injury as immigrant men who have been in the country for over five years and are not over-educated for their jobs.

This is one of the key findings of new research from McMaster's School of Labour Studies and the Institute for Work & Health (IWH) that looked at the relationship between education-to-job mismatch and work injury. The finding emphasizes concerns about integrating new Canadians into the nation's labour market.

"Our findings indicate that the risk of work-related injuries among recent male immigrants is associated with whether they are working in jobs that match their education levels," says Dr. Stephanie Premji from McMaster University, who conducted the study with IWH Scientist Dr. Peter Smith.

Published online in July by *Injury Prevention* (doi:10.1136/injuryprev-2011-040314), the research is the first to examine the relationship between work injury and education-to-job mismatch—that is, when a worker's level of education does not correspond to job requirements. "Although earlier studies have shown that education-to-job mismatch has a negative impact on workers' health, this is the first time the link between over-qualification in employment and work injury specifically has been examined," says Premji, the lead author.

Study matches education with job demands

Using information from the 2003 and 2005 Canadian Community Health Surveys conducted by Statistics Canada, the study looked at work injuries, education levels and job skill requirements among almost 63,500 people over the age of 25 who were employed in the previous year. Approximately 15 per cent of the sample of employed respondents were immigrants. The study also looked at other factors previously linked to increased work injuries, such as age and the physical demands of the job.

By linking information on workers' level of education with their job skill requirements (according to the National

Occupational Classification system), the researchers classified respondents into one of three groups: having an educational level below, congruent with or above occupational skill requirements.

Recent immigrants at higher risk

The researchers found that educational over-qualification was associated with a greater risk of work injury among all workers of both sexes, even when age, hours of work, immigrant status, education, job demands and other factors were taken into account.

When researchers delved deeper and looked at the combination of over-qualification and immigrant status, they found that men who had been in Canada for five years or less were at three times the risk of work injury than non-recent immigrants who were not over-qualified for their occupation. "The combination of the two factors—recent immigration and over-education—led to a much higher risk of injury for men," says Smith.

Why does the situation get worse when immigration and over-qualification coexist? The study cannot directly address these questions, but several factors could be contributing, the researchers speculate.

For recent immigrants, language barriers, possible discrimination and lack of familiarity with job safety or the host country in general may get in the way of their being able to understand or voice health and safety concerns. As well, recent immigrants are often financially strapped due to the costs of resettlement and the common practice of sending money to their home country. This may encourage them to accept overtime, take classes after work to improve job opportunities or undertake other activities that increase their exposure to job risk or reduce time for recuperation.

The elevated risk of work injury may also limit job mobility. "It's a vicious cycle once a worker is injured," says Premji. "Due to the physical and psychological impact of the injury, the worker gets stuck in the job. He or she can't take courses, look for work or interview for jobs."

This research builds on a body of studies and tools from IWH scientists addressing workplace health and safety among newcomers (see www.iwh.on.ca/immigrant-workers-experiences). This includes *Prevention is the Best Medicine*, a toolkit to teach newcomers to Ontario about their occupational health and safety and workers' compensation rights and responsibilities: www.iwh.on.ca/pbm.

THE MOUSE THAT ROARED:
Quivering mouse may reduce shoulder pain

A vibrating computer mouse that reminds users to move their hands and rest their arms eases office workers' shoulder pain, but gets mixed reviews from users in a pilot study conducted by researchers at the Institute for Work & Health.


Trevor King

A quivering computer mouse that prompts users to move their hands and rest their arms decreased shoulder pain in office workers, but not all of them liked using the device. This was the main finding of a recently completed pilot study at the Institute for Work & Health (IWH).

The vibrating mouse shows promise. "An intervention like this holds a lot of potential for practical application, as it targets two common musculoskeletal disorder (MSD) risk factors: static loading and awkward postures," says IWH Knowledge Transfer and Exchange Associate Trevor King. "This is important because many office workers are regularly exposed to these hazards," he adds. The study has been accepted for publication in *Ergonomics*.

Mouse misuse possible source of pain

Studies have shown many office workers suffer shoulder pain, which is worrisome because these workers may be at risk for developing more complex symptoms or MSDs. Debate remains about the cause of this pain. Some studies have pointed to the overuse of certain muscles and long durations of static postures.

Researchers have turned their gaze to the computer mouse as a possible culprit. Studies have found relatively longer mouse use is associated with a greater likelihood of neck pain and discomfort, and preventive actions to avoid symptoms associated with mouse use are often recommended... but where's the evidence?

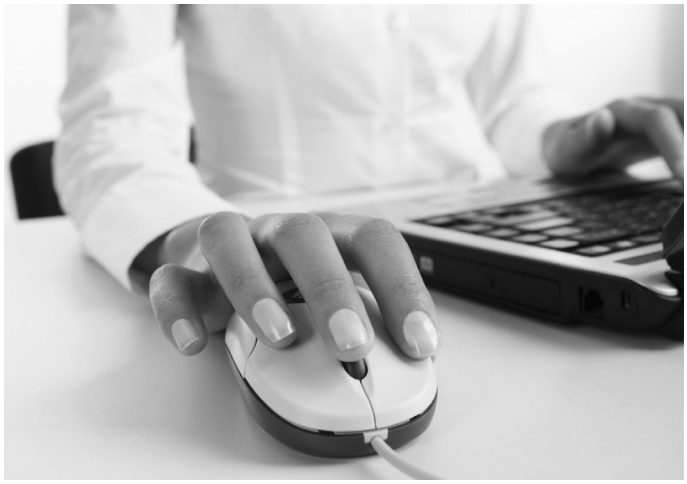
Trial tests mouse effectiveness

That's where this study comes in. An IWH research team, led by Associate Scientist Ivan Steenstra, conducted a randomized controlled trial with the following objectives:

- to determine if use of a vibrating mouse affects pain and discomfort levels among workers with computer-based tasks, and
- to gauge how satisfied workers are with using a vibrating mouse.

The vibrating mouse works like this: If a mousing hand remains idle on the mouse for more than 12 seconds, the mouse starts to vibrate as a reminder to move the hand and rest the arm in neutral postures.

Participants in the study were from an organization close to home: 23 office workers



from IWH (one subsequently dropped out). Eleven used a mouse that had the vibrating feature activated, while 11 in the control group did not. To qualify, participants had to use a computer at least four hours a day at work.

One of the main data sources was online questionnaires in which participants were asked about their pain and discomfort. The self-reported symptom data were collected using an online Daily Symptom Survey (DSS), which included a body map that identified areas such as the neck, shoulders and lower back. Participants were asked to rate their pain/discomfort in these areas on a scale of 0 (none) to 10 (severe).

There were several data collection periods, ranging from before researchers activated the mouse to 25 weeks after activation. At each of these times, the DSS was administered for three days in a row.

Majority satisfied with biofeedback mouse

The biofeedback mouse reduced shoulder pain and discomfort among the office workers who used it. And the majority of users (six out of 11) were satisfied with it. They appreciated the gentle reminder to alter their behaviour.

However, the newfangled mouse wasn't for everyone. Three of the 11 users found it distracting and irritating.

Further research is needed to determine whether the impact of using the mouse holds true in larger field trials and, equally important, how to implement a mouse that is very different from the kind to which people are accustomed.

King notes that IWH researchers are currently helping to develop an online ergonomics training program to address a number of office-based hazards. In the meantime, employees don't necessarily need a vibrating mouse to alleviate shoulder pain and other MSD symptoms. They can try moving their mouse to the left side of their keyboard and teach themselves to slowly adapt to using the mouse with their left hand, says King. This will reduce workers' reach to the mouse and allow them the flexibility to switch hands and sides when needed.

AT WORK
At Work is published by:
Institute for Work & Health
Editor: Megan Mueller
Layout: Megan Mueller
Web & Design Coordinator: Philip Kiff
Communications Manager: Cindy Moser
Director, KTE: Ron Saunders
President: Cameron Mustard
Issue #70 / Fall 2012 / ISSN # 1261-5148
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INSTITUTE FOR WORK & HEALTH
481 University Avenue, Suite 800
Toronto, Ontario M5G 2E9
Phone: 416.927.2027 Fax: 416.927.4167
E-mail: atwork@iwh.on.ca

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The Institute for Work & Health operates with the support of the Ontario Workplace Safety and Insurance Board.

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Understanding western Canada's higher risk of work injury... continued from page 1

than workers in Ontario. What has not been clear from the administrative statistics of provincial workers' compensation boards is why. Traditionally, however, risk of work injury is commonly thought to stem from a mix of personal and workplace-related factors.

For example, it is unclear the degree to which the higher risk among workers in the western provinces is due to the make-up of their workforces or their industry mix. Western provinces have historically had a higher proportion of employment in primary production sectors, such as forestry and oil and gas industries, which pose a higher risk of work injury. Ontario has a higher proportion of employment in financial and insurance services, which pose a lower risk. This study provides some insight into whether factors such as these affect provincial differences in work injury risk.

Using the 2003 and 2005 Canadian Community Health Survey (CCHS), researchers looked at 89,541 Canadians (ages 15 to 75 years) who had worked in the past year. Through the CCHS, these people were asked if they had been injured at work (excluding repetitive strain injuries) in the last 12 months seriously enough to limit their normal activities. Researchers looked at work injuries by personal and work-related factors (called individual-level factors), as well as area-level factors (determined by census division), and then looked to see how these factors were associated with work injury risk in the provinces in which respondents worked.

Risk factors operate at jurisdictional level

The study revealed that, taking all workers together across Canada, a higher incidence of work injury was associated with the following **individual-level factors:** being male, being under 55 (and especially between 25 to 34) years of age, not completing post-secondary degree (and especially having less than a secondary school education), being Canadian-born as opposed to an immigrant, working full-time, reporting medium or high job stress levels, and working in agriculture/forestry/mining/utilities, construction or manufacturing.

Area-level factors showed little or no association with work injury risk, according to the study. That is, an area's socioeconomic status (household income, education levels, etc.) was slightly associated with risk of work injury, but an area's labour market status (unemployment rate, percentage of permanent jobs, etc.) and workplace characteristics (size of firms, degree of unionization) were not.

Finally, **provincial differences** in work risk were found, even after taking individual and area-level factors into account, including industry mix. Workers in the western provinces were shown to be at higher risk of work injury compared to those in Ontario. Specifically, Saskatchewan showed 27 per cent higher risk compared with Ontario; Alberta, 28 per cent; and British Columbia, 49 per cent. Workers in Manitoba and Quebec were at comparable risk of work injury; and those in Atlantic Canada at slightly lower risk (by eight per cent).

Arguably, the key finding is this: Provincial differences in work injury risk persisted after taking into consideration individual characteristics and industry of employment. This finding of unexplained differences in provincial work injury risk points to the idea that factors affecting work injury are operating at a jurisdictional level.

"We need to look beyond worker characteristics as risk factors to truly understand risk of work injury," says Breslin. "We need to look at broader factors to assist in planning prevention efforts tailored to provincial needs."

What's new at www.iwh.on.ca

IWH released an *Issue Briefing* in October that reports on the impact of targeted labour inspections:
www.iwh.on.ca/issue-briefings

IWH offers systematic review workshops, and the next one is set for November 21 to 23, 2012:
www.iwh.on.ca/systematic-review-workshops

The IWH plenary season is up and running, with presentations on Tuesdays from 11 a.m. until noon (unless otherwise scheduled):
www.iwh.on.ca/plenaries

IWH research alerts are now available:
www.iwh.on.ca/research-alerts

The 2012 report of the Knowledge Transfer and Exchange (KTE) Advisory Committee meeting (held in June, 2012), is available:
www.iwh.on.ca/kte-advisory-committee

A new sign-up form allows you to subscribe not only to IWH's e-alerts, but also to other publications and event notifications:
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