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atwork

IN THIS ISSUE

Easy-to-use tool measures benefits and costs of OHS initiatives

The Institute for Work & Health introduces the Health & Safety Smart Planner – a new, user-friendly tool that is designed to help workplaces understand the full benefits and costs of occupational health and safety programs and interventions.

A free, user-friendly software program developed by the Institute for Work & Health (IWH) can help workplaces see the benefits and costs of their health and safety programs. Called the Health & Safety Smart Planner, the tool is expected to be available for downloading from IWH's website by the spring of 2010.

"Health and safety planning should be based on a thorough analysis of all the benefits and costs associated with an intervention. This can be a challenge for workplaces to undertake," says Dr. Emile Tompa, an IWH scientist and economist who led the software development. "In the Smart Planner, we've tried to build sound economic principles into a format that's easy to use."

The up-front costs of occupational health and safety (OHS) initiatives can deter firms from investing in them. Yet the overall benefits – such as lower injury rates or productivity gains – may outweigh these costs over time. The Smart Planner helps to present a complete picture of all the benefits and costs. In technical terms, this is known as an economic evaluation, an area in which Tompa is an expert.

There are several versions of the Smart Planner. The first one, designed for the manufacturing and service sectors in Ontario, was funded by Ontario's Workplace Safety and Insurance Board's Research Advisory Council. Another version, supported by funding from WorkSafeBC, is being developed for the health-care sector in British Columbia.

Tool based on economic evaluation research

"Through other research projects, we realized that workplaces and other interested parties lack guidance on how to conduct this type of evaluation, even though it provides valuable information on the resource implications of an OHS intervention," says Tompa.

continued on back page

IWH announces board appointments

John O'Grady, a partner at Prism Economics and Analysis and a consulting economist specializing in labour market and industry analysis, is now the chair of the Institute for Work & Health (IWH)'s Board of Directors. O'Grady has been a board member for many years. He replaces **Roland Hosein**, vice-president of environment, health and safety at GE Canada, who remains a board member.

As well, the IWH welcomes **Lisa McCaskell** to the board. She is the senior health and safety officer at the Ontario Public Service Employees Union. She is also a member of the Workplace Safety and Insurance Board's Research Advisory Council.

IWH names new associate scientist

Carlo Ammendolia has been appointed an associate scientist at IWH. Formerly at the Centre of Research Expertise in Improved Disability Outcomes, Ammendolia is a clinical epidemiologist and an assistant professor in the Department of Health Policy, Management and Evaluation at the University of Toronto. He is also a staff clinician in the Department of Medicine at Mount Sinai Hospital. His research interests include identifying gaps between evidence and clinical practice, implementing strategies to improve clinical outcomes and preventing occupational injuries.

Measurement workshop coming in March

IWH has confirmed the dates of its next workshop on applying measurement principles in research: March 4-5, 2010 in Toronto. The workshop will provide participants with tools and knowledge to identify measures that can provide the best estimate of a given concept in their clinical work or research. Being held in partnership with the Li Ka Shing Knowledge Institute of St. Michael's Hospital and the Health Policy Management and Evaluation Program at the University of Toronto, the workshop is designed for researchers, research assistants/coordinators, trainees and clinicians who use multi-item measures as part of their research. For information, e-mail kbuccat@iwh.on.ca or visit: www.iwh.on.ca/workshops.

WHAT RESEARCHERS MEAN BY...

Retrospective vs. Prospective Studies

Put simply, retrospective studies look back. Prospective studies look forward. But the differences go beyond that.

How many researchers does it take to change a light-bulb? None if it's a retrospective study, because the light-bulb has already changed itself.

What this joke illustrates — besides the fact that good research jokes are hard to come by — is that studies generally fall into one of two categories: retrospective and prospective.

Let's begin with a research question and see how it might be handled by each type of study. Say you want to know if physiotherapy improves return-to-work (RTW) outcomes among workers disabled by low-back pain.

Retrospective studies pose a question and look back. They use information that has usually been collected for reasons other than research, such as administrative data and medical records. Therefore, the outcome of interest has already occurred (or not) by the time the study is started.

In our example, researchers might turn to Workplace Safety and Insurance Board (WSIB) administrative data. They might retrieve low-back injury lost-time claims within a certain time frame, and collect information on medical treatments (physiotherapy) and return-to-work outcomes in order to look for associations among them.

Case-control studies are considered the highest quality of retrospective study because they try to approximate a control or comparison group. In our study, claim information would be collected on the population at risk: workers with low-back pain. They would be divided into two groups. The first group would be the control group, those who *did not* return to work. The second group would be the case group, those who *did* return to work. Claim information for workers who underwent physiotherapy might be compared to claim information on those who did not (the control group).

What the researchers would be looking for is an **odds ratio**: the odds of returning to work among those who received physiotherapy compared to the odds of returning among the no-physiotherapy group. An odds ratio of less than 1.0 would mean that RTW is *less likely* among those who received physiotherapy, and an odds ratio greater than 1.0 would mean that RTW is *more likely* among those who got physiotherapy treatment.

Despite this, retrospective studies are usually unable to reach cause-and-effect conclusions. For example, we cannot conclude that physiotherapy definitively improves RTW outcomes among back-injured workers. This is because of **confounding factors** — those unforeseen and unaccounted-for variables that may be affecting results. However, retrospective studies do give rise to hypotheses (e.g. that it looks like physiotherapy may improve RTW outcomes), which can then be further tested.

Prospective studies ask a question and look forward. The studies are designed before any information is collected. Study subjects are identified (workers with low- back injury claims) and followed forward to see if the outcome of interest (return to work) happens over time. This outcome is assessed relative to the intervention factor (physiotherapy).

Randomized controlled trials, considered the gold standard of study design, are prospective studies. They can provide evidence of cause-and-effect relationships and support changes in clinical practice or workplace interventions. In a randomized controlled trial, subjects are randomly assigned to receive the intervention or control treatment, and outcomes are evaluated after the intervention period. The control group is the group that receives standard care, no intervention or a placebo.

In our example, the researchers would randomly assign the workers with low-back injuries into two groups: one that is to receive physiotherapy and one that is not. These two groups would be followed over a period of time, and return-to-work outcomes among both would be noted.

The down side of prospective studies is that they are more expensive and time-consuming to design and carry out. As well, it is difficult to follow people for a long time, so situations in which there is a long wait between the exposure and outcome are not well suited to prospective studies. However, for reaching conclusions about the effectiveness of interventions, these studies are the most definitive. A diagram based on this example to illustrate the difference between retrospective and prospective studies is available on the IWH website at: www.iwh.on.ca/retrospective-vs-prospective-studies. For more research term explanations, go to: www.iwh.on.ca/what-researchers-mean-by.

OHS education and training promotes positive worker practices

A systematic review from the Institute for Work & Health confirms that education and training lead to safer practices among workers. However, on their own, they might not reduce work-related injuries and illnesses. That makes education and training only one part, albeit an important part, of an effective occupational health and safety program.

Workplace education and training programs have a positive effect on the safety practices of workers, concludes the newest systematic review from the Institute for Work & Health (IWH).

Whether it's computer users adopting correct sitting postures and making ergonomic modifications to their workstations, farmers wearing personal protective equipment, or nurses applying universal precautions in a hospital environment, training seems to be an effective catalyst for bringing about changes in practices related to occupational health and safety (OHS).

"This was expected," says IWH Scientist Dr. Lynda Robson, who led the review looking at the effectiveness of OHS training and education, "because safe practices are considered an important way to achieve and maintain good health."

However, the review also suggests that training on its own will not reduce work-related injuries, diseases and early symptoms among workers. This finding may surprise OHS professionals. However, says Robson, it confirms a message that has been emerging from IWH systematic reviews of approaches to reduce musculoskeletal disorders: multi-component OHS programs are the key to effective prevention.

"We believe that training is an important component of a workplace's OHS system, but only one component," says Robson. "Indeed, the study supports the validity of the hierarchy of controls."

The hierarchy of controls advocates the following OHS procedures to protect workers, from the most to least preferred:

- eliminate the hazard;
- substitute less hazardous materials, processes, operations or equipment;
- implement engineering controls;
- introduce administrative controls such as safe work procedures, education and training, job rotation, etc.; and
- supply personal protective equipment.

As Robson puts it, "you can educate people to sit properly in order to reduce musculoskeletal disorders, but if they're sitting on a wooden stool or at a poorly designed workstation, there's only so much the education can achieve."

Review team supports OHS training

Each year, workplaces provide many hours of training to employees. A previous IWH study shows that roughly 15 per cent of the working population in Canada in any given year receives OHS training (*Injury Prevention*, 2007: vol. 13, no. 1, pp. 37-41). Given the money and time spent on this training, business owners want to know if training actually decreases injury and illness.

The systematic review, conducted by IWH in partnership with the U.S. National Institute for Occupational Safety and Health (NIOSH), set out to help answer this question. A review team of 16 researchers searched 10 electronic databases for studies on OHS education and training. From an initial pool of more than 6,450 articles, 22 studies were identified as relevant and of sufficient quality.

The review team assessed the studies to determine the impact of training in four areas:

- **knowledge** — worker understanding of the training topic;
- **attitudes and beliefs** — worker confidence in their ability to achieve desired OHS behaviours (self-efficacy) and their intention to act on the knowledge gained;
- **behaviours (or practices)** — worker actions, as well as reduced hazards and exposures that could conceivably stem from worker actions; and
- **health** — absence of workplace injuries and illnesses, as well as absence of early symptoms of these conditions.

The review team found strong evidence that training is effective in changing behaviours or practices. There were not enough studies of sufficient quality to conclude that training affects knowledge or attitudes and beliefs. However, in the few studies that were included, the evidence points toward training being effective in both of these areas. The studies were consistent in their findings, and the training effects were large.

With respect to health, the review team could not say OHS training has an effect. The studies were inconsistent in their findings about effectiveness, and the effects found were small.

In the end, the review team was confident supporting OHS training. "We firmly recommend the use of workplace education and training programs based on this review, because they have a positive impact on the OHS practices of workers," says Robson. "However, training should be one part of a multi-component OHS program. Employers who want to see a dramatic improvement in the health and safety of their workers need to think about more than just training."

The full systematic review and a summary are available at: www.iwh.on.ca/sys-reviews/training-and-education-programs.

In Brief

There is strong evidence that OHS training affects the practices of workers. OHS training on its own was not shown, in this review, to have an impact on health (for example, by reducing injuries or symptoms).

THE BIG PICTURE

Solving the "problem" of OHS in small business

Solutions to the "problem" of health and safety in small business are slow in coming. At the 2009 Alf Nachemson Memorial Lecture, Dr. Joan Eakin drew upon her years of research to help explain why.

When it comes to occupational health and safety (OHS), small workplaces are universally recognized as a "problem." Yet solutions remain elusive. Why?

According to Dr. Joan Eakin, a professor at the Dalla Lana School of Public Health and director of the Centre for Critical Qualitative Health Research at the University of Toronto, it's because policy-makers and researchers alike don't fully understand the nature of OHS in small business.

Eakin explored this theme in a thought-provoking presentation to 130 OHS stakeholders. They were attending the Institute for Work & Health's 2009 Alf Nachemson Memorial Lecture, held last November in Toronto.

There are over two million workplaces in Canada with fewer than 20 employees. They are considered an OHS problem because, by most accounts, they have higher injury and illness rates than larger firms in similar sectors. Pulling from her years of research in this area, Eakin argued that the problem is poorly understood for three main reasons.

1. OHS is framed from a management perspective, largely ignoring the worker perspective. Implicitly, the term "small business" is equated with those who own or manage the business. This is reflected in assertions that small workplaces are unable to properly deal with OHS because they lack knowledge of laws and hazards, tend to put productivity ahead of health and safety because of slim profit margins, and need programs that are simple, cheap and amenable to informal management styles.

"When it is said that small businesses lack or need these things, what is meant is that small *employers* lack or need these things," Eakin said. "Such things are not what *workers* need or lack."

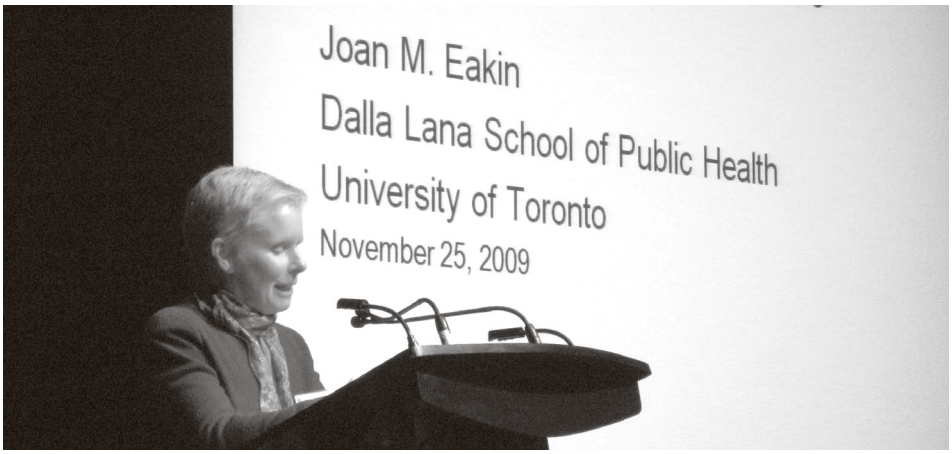
Workers are largely invisible from the OHS equation in small workplaces. In part, Eakin explained, that's because these workers are hard to identify. They are typically not unionized and have little or no collective presence.

In a study of front-line service providers at Ontario's Workplace Safety and Insurance Board (WSIB), Eakin demonstrated one way in which the management-centric standpoint plays out. She found that front-line staff typically view small businesses as mom-and-pop operations struggling to make ends meet.

As a result, "they see economic motivation and maximization of profit as natural and legitimate for small business employers," said Eakin. So WSIB front-line staff tend to cut small employers "a little slack" and "to take a soft approach" by educating rather than punishing.

The same is not true for injured workers. For them, self-interest or economic motivation is not viewed as either natural or legitimate by WSIB staff. "If injured workers are seen as seeking the best possible deal for themselves, they risk … being seen as scamming the system or seeking easy money," said Eakin. Consequently, front-line staff tend to respond with a get-tough approach, unlike the response to small business employers.

Left to right: Jill Hutcheon (former President & CEO, WSIB), Dr. Cameron Mustard (President, IWH), Dr. Joan Eakin.



Dr. Joan Eakin spoke at the 2009 Alf Nachemson Memorial Lecture in Toronto.

2. The consequences of OHS on social relations in small workplaces are underestimated. Managers and workers alike often describe small workplaces as being "like a family," but this atmosphere can be vulnerable in the wake of a workplace injury. "The social relations of family superimposed on the social relations of employment and management authority creates a distinctive context for health and safety in small businesses," said Eakin.

One small business study of Eakin's focused on workers' views on health and safety. It revealed that a workplace injury can bring to light "the fundamental conflict between the interests of the worker and the interests of the company," Eakin said. When this conflict, usually hidden in the informal and personal work environment of the small firm, is exposed, it can break down the idea of the firm as a family and "damage the internal social fabric of the organization."

3. OHS legislation and policies tend to be designed with large, unionized workplaces in mind. This can result in an often-unacknowledged "glaring misfit between regulations, policy and institutional structures and the realities of small workplaces," Eakin said.

Eakin's study looking at the effects of Ontario's new self-reliant return-to-work model on small firms provided examples. Under the model, employers are expected to provide safe and, if necessary, modified work to bring workers back early, even before full recovery.

However, as the study showed, few opportunities for modified work may exist in small workplaces. As a result, Eakin explained, they are sometimes brought back to humiliating, do-nothing jobs. Or they are sometimes brought back to jobs that are "socially dislocating and distressing for the worker," such as an injured truck driver begin given modified work in an all-female back office.

"The notion that early return to work needed to be socially as well as physically safe for workers was not anticipated in the policy," said Eakin.

In the end, Eakin wasn't advocating paying more attention to worker viewpoints at the expense of management viewpoints, or forsaking risk assessment for the sake of protecting the family-like social fabric. Rather, she argued for "an enlargement of the field of vision" to include all the dimensions. Doing so, she proposed, would enable us to gain traction on the problem of OHS in small workplaces.

To view Eakin's presentation slides, which include references to the studies, go to: www.iwh.on.ca/nachemson-lecture.

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

Registration is now open for the Canadian Association for Research on Work and Health (CARWH) conference taking place in Toronto May 28-29, 2010. Hosted by IWH, the conference will share the latest research findings in work and health: **http://carwh2010.iwh.on.ca**

The much-anticipated Health & Safety Smart Planner — a software program developed by the Institute for Work & Health (IWH) to help manufacturing workplaces analyze the costs and benefits of occupational health and safety interventions — will soon be online. Watch for this free research-based tool at: **www.iwh.on.ca/smart-planner**

Young males have typically had higher work-related injury rates than older men, but this appears to be changing in some parts of Canada. The newest *Issue Briefing* from IWH explores why young male workers in Ontario and Quebec, for example, now have similar work-related injury rates as older men: **www.iwh.on.ca/briefings/young-worker-injury-rates**

The slate of speakers for the winter/spring 2010 plenary season is taking shape, with new speakers and topics being announced weekly. Check the site regularly to find out what new workplace health research findings are being presented: **www.iwh.on.ca/plenaries**

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Exploring complex issues to find return-to-work answers

Recent studies from the Institute for Work & Health highlight potentially important practices for ensuring the successful return to work of injured employees.

Disability management and return to work can be complex, often involving medical, psychological, social and workplace issues. The Institute for Work & Health (IWH) is committed to exploring this complexity in order to help policy-makers, workplaces and labour develop programs that effectively prevent and manage disability arising from work-related conditions.

In recent months, several studies have done just that. Tackling subjects ranging from work accommodations to medication overuse, these studies highlight potentially important practices for ensuring the successful return of injured employees. Here's a brief overview of these recent research findings.

1. Work accommodations

Injured workers who are offered accommodated work, such as different job tasks, shorter hours and other job adaptations tailored to their physical or mental abilities, are more likely to return to work. So it's important to know what factors affect the offer and acceptance of work accommodations.

A study led by IWH Adjunct Scientist Dr. Renée-Louise Franche, director of disability prevention at the Occupational Health and Safety Agency for Healthcare in British Columbia, looked at this very issue. Published in the August 2009 issue of the *Journal of Occupational and Environmental Medicine* (vol. 51, no. 8, pp. 969-983), the study is based on information collected by Franche as an IWH scientist.

Franche found that workplace factors have more effect than an injured worker's personal factors on the likelihood that work accommodations will be offered and accepted. This is good news, says Franche. "These are modifiable factors over which the workplace parties have some control."

For example, the study found that work accommodations are more likely to be offered by workplaces with strong disability management policies and practices. These practices include:

- contacting workers shortly after injury or illness to express concern and offer help;
- working with physicians to develop return-to-work plans;
- following up after injured workers return to adjust the work situation as needed;
- providing retraining when injured workers can't return; and
- having labour and management work together as partners in returning injured workers.

The study compiled information on about 400 workers with musculoskeletal injuries who had filed claims with Ontario's Workplace Safety and Insurance Board (WSIB). Workers were interviewed one month post-injury about work accommodations. Their responses (as well as administrative data available from the WSIB) were linked to 18 factors that could potentially affect an offer and acceptance of accommodated work.

These factors, derived from the research literature and the researchers' expertise, were grouped into three categories: worker-level factors (e.g. age, gender, health status, pain levels), job-level factors (e.g. job demands, tenure, supervisor support) and workplace-level factors (e.g. firm size, unionization, organizational policies and procedures). One month post-injury, nearly 60 per cent of workers had been offered accommodated work, and three quarters of these offers had been accepted by these workers.

What does this mean in practice? Focusing on optimizing workplace conditions may increase the likelihood of successful work accommodations. Don't focus only on the worker.

2. Differences among disabled workers with low-back pain

At one time, workers with low-back pain were considered a uniform group. But recent research has been saying otherwise. This is important, because if workers disabled by low-back pain are *not* alike, it means different interventions may be needed to help different groups of workers with back pain disability return to work.

IWH Associate Scientist Dr. Ivan Steenstra recently led a study that confirmed back-injured workers can be grouped according to risk factors known to affect the length of absences. In a paper published online in November 2009 in the *Journal of Occupational Rehabilitation* (e-pub ahead of print: DOI 10.1007/s10926-009-9218-8), Steenstra identified three classes of workers with back pain.

"Just because you have one worker who calls in with low-back pain, it doesn't mean the next one who calls in is exactly the same," says Steenstra. "They may need different kinds of help. Identifying different groups of workers is a promising way to determine whether interventions can be more closely tailored to individual workers' conditions."

From information collected through Franche's study (above), Steenstra and his team looked at these issues in 442 workers with low-back pain who had filed a lost-time injury claim with Ontario's WSIB. The 259 who had already returned to work at the one-month mark were classified as the low-risk group. The remaining 183 workers with disability lasting longer than one month were categorized as high risk. All were scored according to these risk factors: pain, disability, fear of pain and reinjury, physical job

"**JUST BECAUSE YOU HAVE ONE WORKER WHO CALLS IN WITH LOW-BACK PAIN**, it doesn't mean the next one who calls in is exactly the same," says IWH Associate Scientist Dr. Ivan Steenstra. "They may need different kinds of help. Identifying different groups of workers is a promising way to determine whether interventions can be more closely tailored to individual workers' conditions."

demands, people-oriented workplace culture, workplace disability management practices and depressive symptoms.

Based on these factors, the research team identified three classes of workers who were still off work:

Class 1 — workplace issues. These workers had similar pain and disability scores as those who had returned to work. However, they had much worse scores with respect to workplace disability management practices and the worst scores on people-oriented workplace culture.

Class 2 — positive workplace, but more back pain. These workers scored higher than any group, even those who had already returned to work, on people-oriented workplace culture and workplace disability management practices. However, they also scored relatively high with respect to pain and disability levels.

Class 3 — multiple issues. These workers fared the poorest in all areas except workplace disability management practices and workplace culture, and even here their scores were relatively worse. Their levels of depressive symptoms were much higher.

At six months post-injury, Steenstra found that 41 per cent of workers in Class 1 (workplace issues), as with 40 per cent in Class 2 (high back pain) and 43 per cent in Class 3 (multiple issues), were not working. This compared to 11 per cent of workers in the group that had returned to work at one month.

Steenstra suggests different interventions, or courses of action, that workers in each of these classes might need to ensure a timely return to work. Those with workplace issues would likely benefit most from interventions that address disability management practices and culture at work. Clinical interventions may not be the priority.

Those from a positive workplace but with ongoing pain might benefit most from interventions that target back pain, such as exercises. They might also particularly need supportive health-care providers who offer assurance and communicate with their supervisor to structure a return-to-work plan as part of recovery.

Finally, workers with multiple issues would probably benefit most from a program that intervenes on all fronts, paying special attention to the workplace and psychological issues. They might benefit from problem-solving training, development of coping skills, stress management and cognitive behavioural therapy.

The challenge now, says Steenstra, is to be able to identify as early as possible the risk category into which these workers fall. "The practical implications of this study are highly dependent on the quality of screening that can be achieved," he says. To that end, Steenstra is currently working on a screening tool to predict time off work among people with low-back injuries.

What does this mean in practice? There might be a benefit in treating workers with low-back injuries in different ways. Tailoring interventions to improve return-to-work according to individual risk factors may be helpful.

3. Medication overuse

Some workers with work-related disabilities may frequently be prescribed pain medication in order to cope with return-to-work demands. So suggests IWH Scientist Dr. Ellen MacEachen, who observed this finding while researching the factors that account for the small (but costly) percentage of injured workers who have difficulty returning to work.

"I didn't set out to gather information on medication overuse," she said at the October 2009 Canadian Congress for Research on Mental Health and Addiction in the Workplace, where she presented her findings. However, what she found in her interviews with 48 injured workers and 21 service providers across Ontario was that the use of painkillers, such as opioids, was not uncommon among injured workers trying to manage their pain as they attempted to return to work.

"They take the medication to keep moving and to be able to do work that has not been modified in the wake of their injury," explained MacEachen. "And they often don't complain, perhaps because they are too stoic or too terrified of losing their jobs and/or workers' compensation benefits."

It's a no-win situation, MacEachen said. Workers take the medication to cope, but the medication makes it hard for them to function. As well, the medication may also present a safety hazard. "Because the medication masks pain and symptoms, workers may over-extend and experience a reinjury" she said. "As well, they may pose a risk to their co-workers if working in an impaired state."

The problem calls for "upstream solutions," MacEachen said. She suggested the following:

- more systemic oversight of workplace return to work by the Workplace Safety and Insurance Board (which the WSIB is embarking on through its new service delivery model);
- the creation of a forum for workers to complain about poor RTW situations without fear of losing their benefits or jobs; and
- more weight being given to the advice of physicians who say a worker is not ready to return, even if the employer indicates accommodated work is available.

As for the workplace parties, "there is currently little in the way of guidance to assist workers, employers and health professionals who must deal with this issue," MacEachen said. She suggested the way forward is to improve communications.

"If a worker does return to work while on strong medications, the physician should carefully monitor medication use. Also, while observing worker confidentiality, the employer should be made aware of the worker's functional incapacity, such as concentration and coordination limitations, related not just to the original injury but to medication use as well."

What does this mean in practice? Involving workers' health-care providers in the design of return-to-work programs that accommodate workers' pain levels and medication use may be helpful. Be aware that returning injured workers may be taking pain medication in order to cope with job demands.

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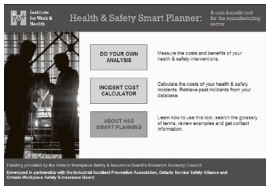
WSIB Workplace Safety & Insurance Board
CSPAAT Commission de la sécurité professionnelle et de l'assurance contre les accidents du travail

Easy-to-use tool measures benefits and costs...
continued from front page

In 2007, Tompa led a systematic review that looked at studies of effective OHS programs that also considered benefits and costs. There was a notable lack of studies with an economic component. However, the review ultimately found that several types of OHS programs, such as ergonomic interventions in the manufacturing and warehousing sector, led to both health and financial returns. This approach can make a stronger case for investing in OHS.



Tompa and other IWH colleagues also edited a methods text entitled *Economic Evaluation of Interventions for Occupational Health and Safety*. It is designed to strengthen good practices in this area among economists and other researchers.

Realizing that workplaces needed more immediate evidence and an easier way to do an economic evaluation, Tompa came up with the concept of the Smart Planner. It offers a step-by-step approach, with simple explanations throughout, prompting the user to enter the necessary information (see box below). The software makes the key calculations, which appear on a summary sheet. In addition, it features a database that stores the costs of ongoing OHS incidents in a workplace, as well as the economic analyses of interventions.

The first version has just been completed, but further developments are underway. There are plans to incorporate video training clips into the software and customize another version for Manitoba, as its Workers Compensation Board recently approved a grant for this purpose.

This spring, you can download it from: www.iwh.on.ca/smart-planner.

USING THE SMART PLANNER: A HYPOTHETICAL EXAMPLE OF HOW IT WORKS

Suppose you are an ergonomist at a large firm whose workers experience a large number of musculoskeletal or soft-tissue injuries. Your management team supports the idea of making ergonomic adjustments to workstations, but doesn't want to purchase new equipment or involve staff.

You think that a more intensive approach, involving participatory ergonomics (PE) is needed. An IWH review has shown PE reduces injuries, and a new IWH guide to PE program success provides information on how to implement it (see www.iwh.on.ca/pe-guide). You decide to try the H&S Smart Planner to get some cost and benefit information to support your case.

You begin using the Smart Planner by recording ongoing musculoskeletal incidents in the database, which stores this information on your desktop. This is part of the software called the "Incident Cost Calculator." This calculator considers the type of incident, time taken off by the worker, workers' compensation costs, lost productivity expenses and other relevant factors. You decide to capture this information over six months, following the guidance from the "Help" section of the Smart Planner.

Once the management team sees how much these injuries are costing, they agree to try a PE program. They even allot a budget for equipment modifications and time for staff training. With their buy-in, you've cleared the first hurdle in ensuring successful implementation. You are asked to report back in another six months.

Time to refer to the Smart Planner again. You decide to compare injury rates in your firm before the PE program and after. This is called the "Before and After" analysis.

You already have the "Before" costs stored in the Incident Cost Calculator. The Smart Planner walks you through the "After" stage to input the changes resulting from the PE program. There are costs in terms of staff time to analyze workstations or hold meetings, alter equipment and to complete other tasks related to the initiative. There are also potential positive consequences, such as productivity improvements, fewer injuries and related costs, and other benefits, all of which you are prompted to enter in the software. You also continue to record incidents as they occur.

Finally, six months later, you print out your summary sheet to show the full benefits and costs of your PE program. Your management team is pleased. The overall costs in terms of staff time and ergonomic adjustments amounted to $8,900. However, comparing the "before" and "after" periods, the company has saved $22,000 in fewer days off work due to soft-tissue injuries. Furthermore, productivity is up three per cent.