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at work

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For a segment of the workforce, psychosocial working conditions are poor across the board

IWH study finds risk of burnout, stress greatly increases for the 1 in 10 Canadian workers in consistently bad job environments

With the increasing attention given to work-related psychological injuries in recent years, researchers in occupational health and safety have sought to understand the role of psychosocial work factors in that rise—i.e. factors such as job demands, job control and job security. The study described here is one of three new studies conducted at the Institute for Work & Health that examine psychosocial work factors in worker health using data from the Canadian National Psychosocial Work Environment Survey.

In occupational health and safety research, the term "psychosocial working conditions" can refer to many different things, each of which deserves to be understood in its own right. Are long work hours harmful to workers' health? What about lack of training and resources, unclear responsibilities, excessive work demands, unsupportive supervisors and colleagues, to name just a few examples?

But what happens when psychosocial work factors are considered all at once? What happens to workers' health when negative psychosocial work factors pile on? A new Institute for Work & Health (IWH) study found a clear link. For a segment of the workforce, psychosocial working conditions are poor across the board. And poor conditions overall are associated with a greater likelihood of burnout and stress among workers, the study also found.

"While research on individual psychosocial factors can be useful, this study points to the value of thinking about these working conditions not just in isolation, but all at once," says IWH Associate Scientist Dr. Faraz Vahid Shahidi, lead author of the study.

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IWH welcomes new Board officers, members

Kate Lamb, a lawyer and head of client and people services at the Law Society of Ontario, was elected chair of the Institute for Work & Health (IWH) Board of Directors at the Board's September 2021 meeting. Before joining the Law Society, Lamb was the chief corporate services officer at Ontario's Workplace Safety and Insurance Board and the director of employment and labour policy and program development at the Ontario Ministry of Labour, Training and Skills Development (MLTSD).

Lamb takes over the position held for over six years by **Kevin Wilson**, a former assistant deputy minister in MLTSD. Wilson will remain a member of the Board for another year. The Institute extends its gratitude to Wilson for his devoted service as Board chair.

At the September meeting, **Dr. Louise Lemieux-Charles**, a professor emeritus at the University of Toronto, was elected vice-chair of the Board. Three new members also joined the Board: **Dr. Maurice Bitran**, a faculty member at the University of Toronto's Munk School of Global Affairs and Public Policy and former CEO and chief science officer of the Ontario Science Centre; Dr. Deborah Parachin, chief physician at Hydro One; and (as of December) George Gritziotis, CEO at the Ontario College of Trades.

The September meeting was the last for **Mark Dreschel**, director of talent and culture at Coldbox Builders, who stepped off the Board after nine years of service. The June 2021 meeting was the last for the previous Board vice-chair **Melody Kratsios**, a senior program manager at the engineering firm AECOM who sat on the Board for nine years. The Institute thanks these members for their many years of valued service.

For more information on current IWH Board members, go to: **www.iwh.on.ca/board-of-directors**

IWH research associate promoted to associate scientist

Congratulations to **Kathleen Dobson**, who has been promoted to associate scientist at the Institute. Dobson joined IWH in 2016 as research associate and a Syme fellow in work and health. She recently completed her PhD in epidemiology at the University of Toronto's Dalla Lana School of Public Health. For more about Dobson's research interests, go to: **www.iwh.on.ca/people/kathleen-dobson**

What Research Can Do

Scanning how OHS authorities responded to the pandemic

One of the issues that surfaced during the COVID-19 pandemic is the relationship and coordination between government occupational health and safety (OHS) authorities and their public health counterparts. It was certainly one of the themes that emerged in a project conducted by the Institute for Work & Health (IWH) in early 2021. The project, which examined the way OHS authorities in developed countries responded to the pandemic, found some common challenges, as well as some notable innovations.

The project was led by Dr. Cameron Mustard, IWH president and senior scientist. The other members of the team were Dr. Greg Wagner at Harvard T.H. Chan School of Public Health; Dr. David Michaels, former assistant secretary of the U.S. Occupational Safety and Health Administration; and Louise Logan, national project director of the XXII World Congress on Safety and Health at Work. The team developed a questionnaire that was completed by leaders at 15 selected OHS authorities in North America, Europe, Asia and Australia. The findings were summarized in a recent Issue Briefing.

Although labour inspection authorities maintained contact with public health authorities at a strategic level on the prevention of COVID-19 transmission, operationally, the two worked separately for the most part. In most jurisdictions, contact tracing, outbreak investigations and vaccinations were solely the responsibility of public health authorities.

The briefing did note some exceptions. For example, in Singapore, the Ministry of Manpower worked closely with the Ministry of Health on contact tracing and outbreak investigations. And in the United Kingdom, the regulator Health & Safety Executive participated in infection management teams led by public health to help establish whether workplaces were potential causes of transmission.

Labour inspection authorities were also challenged when it came to conducting workplace inspections. In the early months, most curtailed or stopped on-site inspections, replacing all or most of them with some form of remote inspection (e.g. by video). Some inspectorates shifted toward education interventions as responses to complaints.

One jurisdiction, the State of Oregon, reported that inspections were carried out for only a small proportion of COVID-19-related complaints: "Both because of our workload and because these were genuinely new and sometimes changing requirements, leaning hard into 'education' through use of the phone/fax method made sense, so we have conducted inspections in roughly three per cent of the COVID-19 complaints where in normal circumstances about half of complaints result in inspections."

The questionnaire also asked respondents about the extent to which OHS authorities turned to new regulations in their responses to COVID-19. While laws and regulations specific to COVID-19 were introduced and implemented for public health, most labour inspection authorities relied on pre-existing OHS regulations, with a few exceptions noted in the briefing.

On the topic of workplace transmission data, the team found some inspection authorities maintained a database of inspection results, but most did not indicate that this data is publicly available. In most jurisdictions, labour inspection agencies did not maintain data on COVID-19 transmissions in workplaces. Some cited the difficulty of determining the source of transmission. In some jurisdictions, data has been kept by public health authorities on workplace outbreaks (i.e. cases where more than an established threshold number of workers have been infected), but this data is mostly available to the public only in aggregate form.

The briefing notes, however, that practices evolved over the course of the pandemic as workplaces got more attention as a potential source of transmission, and as OHS authorities accumulated experience. Coordination with public health authorities increased, as did their on-site inspection of workplaces.

To read the full Issue Briefing, go to: www.iwh.on.ca/summaries/issue-briefing/response-to-covid-19-gathering-experiences-of-ohs-authorities-in-developed-countries

In most sectors, workplaces saw lower rates of COVID spread than in the community

Studies by IWH, Public Health Ontario also find layers of infection control in majority of workplaces

From the very start of the pandemic, measures enacted by public health authorities indicated their recognition that workplaces could be important sites of COVID-19 transmission.

Yet, such recognition was not backed up by consistent data collection to understand how workplaces compared to other sites of virus spread, said Institute for Work & Health (IWH) Senior Scientist Dr. Peter Smith in a recent webinar presentation.

As a result, he noted, it was challenging during successive waves of community spread to have an accurate picture of the role of workplaces in adding to case counts. As well, the system missed opportunities to drill down and uncover factors that may be behind COVID spread in certain workplaces and not others.

In the October 2021 IWH Speaker Series presentation (see www.iwh.on.ca/events/speaker-series/2021-oct-19), Smith shared results of two studies conducted at IWH in collaboration with Public Health Ontario using population-level data.

The two studies gave rise to findings that may surprise some, considering the heightened concern voiced in the media about work as a source of transmission during Ontario's second and third waves.

Two studies

One finding was the widespread adoption of COVID-19 infection control measures. In a large, nationally representative series of surveys conducted by Statistics Canada, 75 per cent of respondents who continued to go to work reported four or more infection control measures at their workplaces. Another 15 per cent said their workplaces had three such measures in place.

A very small proportion—two per cent of respondents—said their workplaces had no infection control measures in place.

"Two per cent of approximately 11 million people (the number of Canadians estimated to have continued to go to work) is 220,000 people, and that's still quite a lot of people," said Smith. Workers who lacked such protection (or had only one form of protection) were more likely to be new on the job, working part-time, on contract, or in sectors such as construction, utilities and agriculture/mining/quarrying/oil.

A second notable finding related to the level of transmission attributable to work. Over a year-long period between April 1, 2020, and March 31, 2021, workplace outbreaks accounted for about 12 per cent of all cases and seven per cent of all hospitalizations among working-age Ontarians. These findings are much lower than commonly perceived during some of the most anxious periods of the pandemic.

In all but three sectors, the rates of infection at workplaces were lower than rates of infection in the community, said Smith. These sectors represented about 75 to 80 per cent of the workforce that could not work from home, and included accommodation and food service, construction, education, non-food manufacturing, retail trade, transportation and warehousing and wholesale trade.

The three sectors where workplace infection rates were consistently higher than general rates were agriculture, health care and social assistance, and food manufacturing. This is consistent with media reports spotlighting the heightened risks in these sectors.

Questions to further explore

Looking at rates of transmission together with use of infection prevention measures, Smith pointed to different outcomes in industries that should theoretically have been more similar. He noted, in particular, differences in transmission rates between food manufacturing (about 14 cases per million hours worked) and other types of manufacturing (about four cases per million hours worked)—two comparable sectors that had similar levels of physical distancing practices.

"This points to some of the missed opportunities for learning when it came to workplace outbreaks," said Smith. "We haven't done enough in collaboration with public health to really understand why the COVID virus seems to spread in some workplace settings much more than others. It's not just about access to infection control procedures. Other characteristics of the environment must be important."

How the studies were done

The first of the studies Smith presented was based on data collected by Statistics Canada between July and September 2020, in a special supplement to the Labour Force Survey that included questions on COVID infection control measures at worksites. After Smith and his team removed answers from people who were self-employed or who worked from home, they had a sample of about 53,300 responses.

Survey participants were asked about a range of workplace practices. These included: 1) practices that allowed for physical distancing; 2) increased access to hand sanitizer or handwashing facilities; 3) enhanced cleaning protocols; and 4) access to masks, face shields, gloves, gowns or other types of personal protective equipment. Smith noted that a potentially important infection control practice—ventilation—was not asked about in the survey. That's a reflection of the timing of the survey, which took place before the importance of ventilation was widely recognized.

The vast majority of survey respondents said their workplaces had infection prevention policies in place. These included physical distancing (84 per cent), personal protective equipment (88 per cent), handwashing (91 per cent) and cleaning (86 per cent).

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Burnout, stress risks raised 7-, 9-fold for group with poor psychosocial work conditions

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"By doing so, we uncovered four different groups of workers when it comes to the quality of their psychosocial work environment."

Shahidi says the top segment—with "great" psychosocial working conditions—makes up about 22 per cent of the working population in Canada. "That's the good news. For this first group, representing a rather sizeable proportion of the labour market, the quality of the psychosocial work environment and conditions of work can be quite positive," he says.

"On the flipside, however, for the fourth group, representing about one in 10 workers, working conditions are overwhelmingly and consistently bad," Shahidi adds. "These workers rated their jobs negatively across all of the work factors included in the study, ranging from emotional work demands and job insecurity to job control and organizational justice."

One notable finding is that these groups had an order to them, with some reporting consistently great working conditions and others reporting consistently bad working conditions. "While we sometimes hear about jobs that have mixed exposures–really good in some ways but bad in others–we didn't find this group of workers in our data," says Shahidi.

What's more, Shahidi's research team saw a rise in the prevalence of mental health symptoms as job conditions worsened. In the first group, burnout and stress were reported by 5.2 and 3.2 per cent of respondents respectively. In the fourth group–those with the worst job conditions–these symptoms were reported by 34.1 and 26.3 per cent respectively.

When other personal and workplace factors were taken into account, workers in the fourth group were 7.5 times more likely to report burnout, compared to their counterparts in the first group. Their likelihood of reporting stress was 9.0 times that of the first group (see sidebar).

"In the process of uncovering these various segments of the working population, we've shown how mental health outcomes track very tightly with psychosocial job quality," says Shahidi. "While we did not test causal relationships, our findings certainly support the idea that enhancing the psychosocial quality of employment in the Canadian labour market could lead to significant improvements in workers' mental health."

Uncovering labour market segments

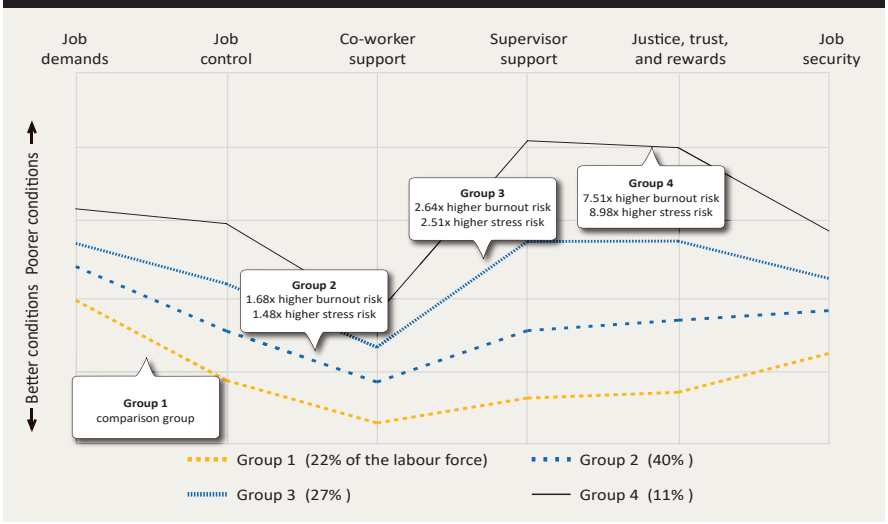
This study, published in February 2021 in *Annals of Work Exposures and Health* (doi:10.1093/annweh/wxaa130), is one of several conducted by a team at IWH and the Occupational Health Clinics for Ontario Workers (OHCOW). It uses data from OHCOW's Canadian National Psychosocial Work Environment Survey, a population-based, cross-sectional (or "moment in time") survey exploring in detail the psychosocial work environment in a large sample of Canadian workers.

The analytical method used in this study, called latent class analysis, allowed the researchers to identify subgroups of workers that have characteristics in common. This method of analyzing data is premised on the idea that membership in such subgroups can explain underlying response patterns picked up in surveys.

Respondents were drawn from an existing panel of 100,000 Canadians maintained by EKOS Research Associates; they were eligible to take part in the survey if they worked in an organization with six or more employees. Survey invitations were sent out in two cycles: once in February and March 2016, and again in February and March 2019. From a total of nearly 13,000 surveys (representing a response rate of 12 per cent), the team ended up with 6,408 respondents who met study criteria and completed key questions.

The survey included 36 questions taken from the Copenhagen Psychosocial Questionnaire (COPSOQ), measuring 15 dimensions of the psychosocial work environment. Shahidi and team grouped these dimensions into six psychosocial work factors: 1) job demands; 2) job control and meaning; 3) co-worker support; 4) supervisor support; 5) justice, trust and rewards; and 6) job security. The team then used the survey scores across these six factors to sort the sample of respondents into four different groups or profiles.

RISK OF BURNOUT, STRESS ACROSS FOUR WORKER GROUPS



Four profiles

Across the four groups, the smallest variations in scores of psychosocial job quality were found in the factors related to job demands and co-worker support. The two factors with the largest spread in scores were supervisor support and justice, trust and rewards. The first group, the 22 per cent of the sample that had the best job conditions, had more older workers and higher proportions

of people with more education or in managerial jobs. This group had twice as many people working in professional, scientific and technical services as the fourth group, the one with the worst job conditions. This latter group had more people with rotating or irregular shifts; it also had three times the proportion of workers in transportation and warehousing as the first group.

In one of the study's notable findings, the team found similar proportions of people in full-time versus part-time or casual contracts in all four groups. "Indeed, many of the demographic and socioeconomic factors that are known to predict psychosocial job quality were not strongly related to the psychosocial work environment profiles that emerged from our sample," says Shahidi. "Although we saw some differences between groups with respect to age, education and industry, in our sample at least, exposure to favourable versus unfavourable psychosocial work environments could not be explained simply in terms of personal and labour market characteristics."

The study highlights the importance of considering a broader set of psychosocial work factors than the conventional approach of assessing job demands and job control only. "The associations we found in this study are stronger than what has been found in previous studies," says Shahidi. "While the work environment is complex and made up of many related dimensions, research tends to neglect the fact that these various aspects of job quality are highly correlated and act in tandem to influence psychological health and safety at work."

Many studies in this field set out to examine the effects of individual stressors—often by statistically controlling for the other stressors that may be present, notes Shahidi. "Such study designs certainly have value. However, for that segment of the population for whom working conditions are bad across the board, focusing on a single aspect of work while leaving all the other negative factors intact—that may not get us very far towards improving job quality and mental health outcomes for these workers," says Shahidi.

Unemployment benefits linked to lower death rates over 10 years: study

Study finds jobless people with income support have 25 per cent lower death rates than those without

Unemployed people who receive employment insurance benefits have lower death rates than unemployed people who do not receive employment insurance.

That's according to a study by Dr. Faraz Vahid Shahidi, associate scientist at the Institute for Work & Health (IWH). It followed a large, nationally representative group of 2.1 million Canadians for 10 years and used death records to examine the long-term outcomes of people who were unemployed at one point in time, comparing those who received employment insurance (EI) benefits with those who did not.

The study found that unemployed people who received EI benefits had higher death rates over a 10-year period than employed people—600 more deaths per 100,000 men and 230 more deaths per 100,000 women.

However, when compared against their unemployed counterparts who had not received EI benefits, death rates among unemployed EI recipients were lower—with 890 fewer deaths per 100,000 men and 1,070 fewer deaths per 100,000 women.

"We know that unemployment is associated with mortality in the short and long run," says Shahidi, whose study was published online in May 2021 in the *American Journal of Epidemiology* (doi:10.1093/aje/kwab144). "Our hypothesis was, if the impact of unemployment is buffered with income support—in this case, employment insurance benefits—then the mortality effects of unemployment will be lessened. And our findings support this idea."

Data linkages

The study was conducted with data from the 2006 Canadian Census Health and Environment Cohort (CanCHEC), a nationally representative cohort of 6.5 million Canadians belonging to the 20 per cent of households that completed the mandatory long-form census on May 16, 2006 (Census Day). The study included only people aged 25 to 64 who were looking for work or working in a waged or salaried job. For death records, the study team used individual census records linked to the Canadian Mortality Database, covering the period between May 16, 2006, and May 16, 2016.

Focusing on the 80,000-plus respondents who were jobless and looking for work on Census Day, the team then determined who among them received EI in the preceding calendar year. This was done with linkages between census data and tax files data, which about 80 per cent of the sample had consented to. The team also used a method called "propensity score matching" to ensure the two groups being compared—EI recipients and non-recipients—were as similar as possible in terms of socioeconomic and demographic characteristics.

Shahidi acknowledges several problems with the study design—among them the potential misalignment between an individual's employment status on Census Day and their EI coverage in the previous year. But he adds that the association between mortality and receipt of benefits was found across a large sample that included tens of thousands of respondents. He also notes the compelling size of the observed associations: over the 10 years of follow up, the overall risk of mortality among EI recipients was approximately 25 per cent lower than the risk among comparable EI non-recipients.

"We now have a growing body of literature on the health consequences of unemployment—and the ability of income support policies to cushion those negative effects," says Shahidi. "In the short term, access to unemployment benefits can alleviate the social and economic consequences of unemployment. In the long-term, it may also improve population health and health equity."

Five things we heard at the XXII World Congress on Safety and Health at Work

Future hazards, collaboration models, a prevention mindset: a shortlist of common themes connecting the global OHS community

When the Institute for Work & Health (IWH) and the Canadian Centre for Occupational Health and Safety (CCOHS) were awarded co-hosting responsibilities for the XXII World Congress on Safety and Health at Work, the theme they chose was "Prevention in the Connected Age."

That choice, made well before the global pandemic, remained at the core of the September 20-23, 2021, event. "Unable to travel, we found a way to gather, meet, share, exchange, learn and connect in ways that we could not have imagined even a decade ago. And this is how we will connect in the future," said IWH President Dr. Cameron Mustard in his closing remarks.

That theme, of the power of global connection, was heard repeatedly throughout the conference, a virtual gathering of about 2,000 occupational health and safety (OHS) professionals, labour and employer representatives, service providers and policy-makers from around the world. The conference, organized every three years by the International Labour Organization (ILO) and the International Social Security Association (ISSA), featured keynotes, technical sessions, symposia, posters, and entries into the International Media Festival for Prevention (IMFP).

From the many themes connecting the global OHS community, here's a shortlist of five key ones:

1. Social dialogue improves OHS outcomes

Prevention efforts are more likely to succeed when they are developed by government, employer and worker representatives together. "We've seen how social dialogue was at the heart of the COVID response in the world of work," said Martha Newton, ILO deputy director-general for policy. "Social dialogue is as powerful a tool as any."

As conference participants heard in numerous success stories shared at the Congress—from New Zealand's strategy to reduce forestry deaths to Canada's involvement in a new ILO convention on eliminating violence and harassment at work—tripartitism was key to their success. In particular, "OHS initiatives—at the workplace, in an economic sector, or at the level of national policy—can only succeed with the participation of workers and their representatives," noted Mustard.

2. OHS professionals must address both new and traditional hazards

Worker physical and psychological safety are at risk when task assignment and work pace are set by artificial intelligence and machine algorithms, when networked equipment and facilities are hijacked by malicious hackers, or when employment relationships are eroded by service and production models based on platform-enabled microwork. The OHS world needs to stay vigilant for these and other new hazards as the pace of technological change gathers steam, participants heard. Even remote or telework, adopted nearly overnight around the world at the onset of the pandemic, can expose workers to risks such as isolation, depression, domestic violence and inability to disconnect.

And yet, noted Joachim Breuer, president of ISSA, "Traditional OHS risks still exist and deserve our full attention. The two million workers who die every year (around the world) must not be forgotten."

3. Safety culture matters

Whether discussing emerging risks or long-standing health and safety challenges, speakers and conference participants returned often to the potency of safety culture. The term refers to the shared belief, embraced by everyone throughout the organization, that all accidents are preventable, and no one should be hurt or sickened by or at work. Participants also heard about the progress made since the launch of ISSA's Vision Zero program at the previous World Congress. Over 15,000 enterprises, organizations and OHS trainers have signed up to the campaign. As one multinational business leader shared, in describing how Vision Zero came to be adopted at his organization, "Zero harm is the only goal that makes sense." Or as Breuer described it, "Vision Zero is a powerful message of hope and enthusiasm."

4. The pandemic has taught many OHS lessons

The OHS profession's experience during the pandemic has given rise to many lessons, including some that are yet to be fully understood. Some of the learnings presenters discussed included the importance of social security systems in times of emergency, the need for these systems to be flexible in their response, the need to protect the most vulnerable workers (especially migrant and informal sector workers), the importance of OHS to public health, and the need for good data-collection systems on work exposures.

5. Storytelling is a powerful way to communicate OHS messages

Participants heard again and again of the importance of communication. As one presenter said of her experience during COVID, "Communicate your health and safety message, multiple times a day, using different ways and on many platforms and channels." One of the more effective methods of communicating is storytelling, delegates heard. It can bring different perspectives into focus, deepen empathy and make messages stick. This was evident in the creative and innovative entries from around the world to the International Media Festival for Prevention.

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Study probes factors behind poorer health, lower employment in post-claim experience

New injured worker cohort study at IWH focuses on long-duration claims of 12-plus months

Over the past two decades, research at the Institute for Work & Health (IWH) and elsewhere has helped shine a light on the importance of various factors on the duration of workers' compensation claims. But one aspect that has been less well studied is the experience of injured or ill workers after they are no longer receiving services or benefits from the workers' compensation system.

In a study currently under way, a research team at IWH has set out to better understand these post-claim experiences. What are workers' long-term work and health recovery outcomes in the aftermath of an injury or illness? Who are the workers most at risk of having health problems and low job prospects? And what can be done to improve health and employment outcomes?

"Across the country, few provincial workers compensation agencies, worker representatives and employers actually have good answers to these questions.," said Dr. Cameron Mustard, IWH president and senior scientist, in an IWH Speaker Series webinar presentation on early findings from the Ontario Life After Work Injury Study (OLAWIS) cohort (see: www.iwh.on.ca/events/speaker-series/2021-feb-02). An open access article describing these preliminary findings was also published in September 2021, in *BMJ Open* (doi:10.1136/bmjopen-2020-048143).

The study is based on a series of interviews with about 1,100 Ontario injured workers. The first was conducted 18 months after a work-related injury and the second one conducted 36 months post-injury. The study was designed in part to find out how the post-claim experiences of workers with shorter and longer times on benefits compared, with a particular focus on the experiences of workers who had received benefits or services for more than a year after a disabling injury. Because this latter group accounts for just six per cent of lost-time claims with Ontario's Workplace Safety and Insurance Board (WSIB), the research team focused on recruiting such claimants, those with long-duration claims of 12 to 18 months, in roughly equal numbers as claimants with

short-duration (between five days and three months) and medium-duration (three to 12 months) claims. (Note that a small number of long-duration study participants would still have had an open claim at the time of the first interview; most, however, did not.)

Lower employment at 18 months

One of the more notable early findings relates to participants' return-to-work and employment status. The vast majority of workers, ranging from 85 to 93 per cent across the three groups, did return to work with the employer where the injury occurred. But 18 months post-injury, a different picture emerged. The proportion of workers still at the same workplace was roughly equal across the three groups (about 60 per cent). But the share of workers not working was much higher among the group with long-duration claims. In addition, the proportion of this group that experienced serious financial difficulties was twice as high as that of the first group, the one back at work within three months.

"This is an example of the important information that's available if lost-time claimants are interviewed after their WSIB benefits or services have ended," said Mustard.

Differences in self-reported health status are also found across the three groups of claimants. Workers in the long-duration group reported poor or fair health in greater proportions (32.5 per cent versus 16.3 per cent in the short-duration group), had greater sleep issues (49.6 per cent had trouble going to sleep most or all of the time, compared to 33.9 per cent in the short-duration group) and experienced more pain that interfered quite a bit with daily activities (46.0 per cent compared to 18.9 per cent in the short-duration group).

The study also incorporated health-related interview questions from Statistics Canada's nationally representative survey, the Canadian Community Health Survey (CCHS). As a result, the team had an opportunity to compare the health status of the OLAWIS cohort with that of the general population. The team found, for example, that pre-injury levels of diagnosed chronic conditions in the study cohort were generally the same as in the Canadian population. However, following the injury, the prevalence of diagnosis rose markedly in the OLAWIS cohort across several conditions—namely, mood disorders, migraines, back problems and arthritis.

"We can probably attribute a small proportion of this elevated incidence of chronic conditions to enhanced case finding during the clinical treatment of work-related injury or illness," said Mustard. "But it is also important to understand the degree to which the elevated incidence of chronic health disorders can be attributed to conditions that arose secondary to the original work-related injury or illness."

As the team conducts follow-up interviews at the 36-month post-injury mark, researchers have already begun using this dataset to conduct other studies. These include studies on patterns of cannabis use to treat post-injury health conditions, predictors of persistent pain, the link between interactions with case managers and the likelihood of developing mental health disorders, predictors of successful RTW, and differences in workplace-level RTW across economic sectors.

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The Institute for Work & Health promotes, protects and improves the safety and health of working people by conducting actionable research that is valued by employers, workers and policy-makers.

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Most workplaces had many COVID protection measures

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Given the heightened risks of transmissions faced by workers in health care and social assistance services, it was to be expected that this was the sector with the most prevalent use of PPE. However, in terms of physical distancing, other sectors such as manufacturing, wholesale trade, retail trade, and accommodation and food services all had more widespread use of distancing. Notably, distancing was markedly low in construction and transportation and warehousing.

Smith also noted other personal and workplace characteristics linked to low levels of PPE and infection control. For example:

- Men, compared to women, had lower levels of all infection control practices.
- Workers with lower levels of education had lower levels of physical distancing and less access to enhanced cleaning in their workplaces.
- Workers with six months or less in job tenure had lower levels of all types of infection control practices.
- Non-permanent workers had less access to PPE and enhanced cleaning practices.
- People in smaller workplaces (i.e. fewer than 20 employees) had less access to PPE.
- Workers who had no option to work from home had less physical distancing and less access to enhanced cleaning.

"Interestingly, we saw no differences between unionized and non-unionized workers, and no differences across racial/immigrant groups or across hourly wage levels," he said.

For the second study, on rates of workplace transmission in Ontario, Smith and the research team used the number of workplace outbreaks, defined by public health units in most sectors as instances when two or more cases were detected in a workplace over a 14-day period, and a link could be established between the cases. Smith noted, however, that this definition was not used uniformly across sectors, especially at the beginning of the pandemic (for example, single cases were considered outbreaks in long-term care homes and child-care settings). He also noted that public health units across the province could vary in how vigilant they were in identifying and following up on workplace outbreaks. Despite the inconsistencies, outbreak data did provide the team an opportunity to identify the types of workplace settings where the cases did occur—something not available in the absence of routine collection of work information by the health system.

The first study is published in the November issue of Statistics Canada's *Health Reports* (doi:10.25318/82-003-x202101100002-eng). The second study has not yet been accepted for publication but is available online in pre-publication (doi:10.1101/2021.06.30.21259770). ■

Highlights from the Congress

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World Congress delegates heard and took part in conversations about these and a vast array of other prevention topics. Knowledge sharing was often spoken of, and it was also very much on display. The conference saw the enthusiasm with which participants shared their perspectives and know-how—across national boundaries, disciplines and institutional roles.

As one Canadian OHS leader said, in describing her team's impression of the conference, "They have all described a rekindled passion for their careers and their mission of prevention. My team has been fighting an epidemiological forest fire with buckets for 18 months. So, to see the inspiration return to their spirits was the best therapy for both them and me!" ■