

# **Workplace practices to address the health effects of shiftwork: What is the current state of knowledge and what is needed from a one-day symposium?**

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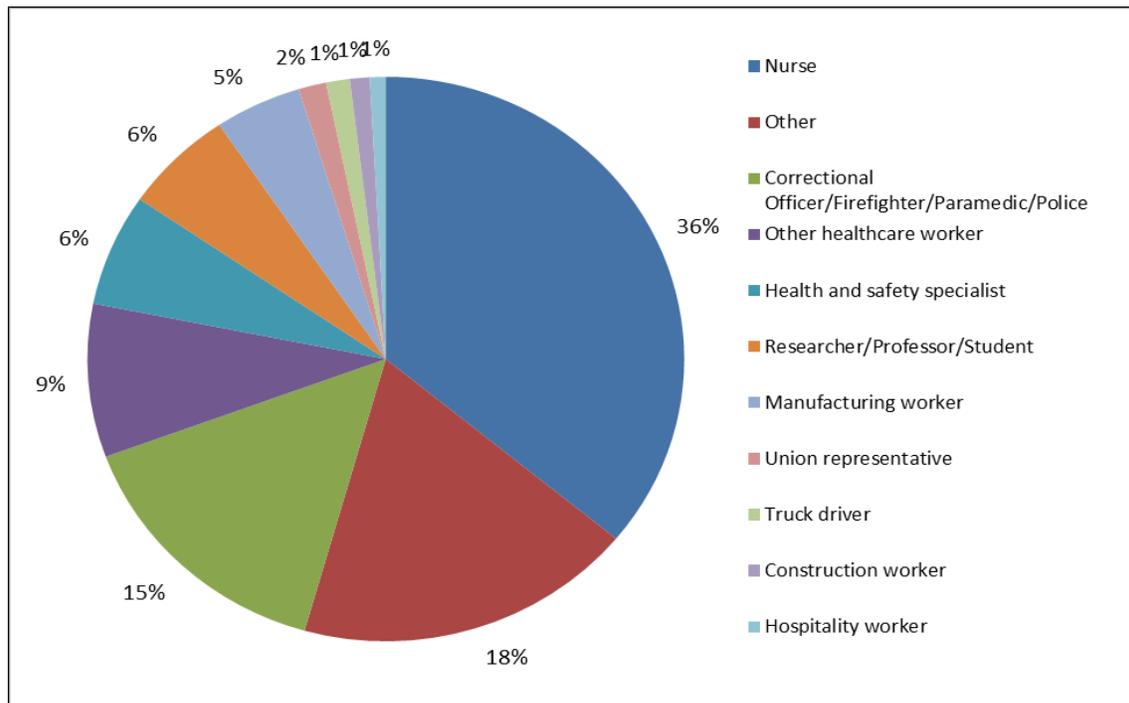
## Workplace practices to address the health effects of shiftwork: What is the current state of knowledge and what is needed from a one-day symposium?

In fall 2011, the Institute for Work and Health (IWH) and the Occupational Cancer Research Centre (OCRC) conducted a web-based survey to learn about current knowledge and needs regarding workplace practices to prevent injury and illness due to shiftwork. This 21 question survey was actively disseminated via e-mail, newsletters, and through websites in order to generate responses from a wide variety of individuals representing diverse workplace affiliations. The main results, summarized here, will be used to inform a one-day symposium entitled, "Interventions mediating health risks among shift workers: Current knowledge and workplace practices" that will be held in fall 2012 and co-organized by the IWH and OCRC.

### Demographics of survey respondents

A total of 517 individuals participated in the survey, including workers, union representatives, employers, researchers, and policy-makers from workplaces as wide-ranging as health care organizations and industry. The survey generated responses mostly from females (66%) and people living in Ontario (95%). The average age of respondents was 47.3 years. Approximately two-thirds (67%) of survey respondents were workers and 15% were managers. Thirty-six per cent of respondents were nurses (many were occupational health nurses), followed by correctional officers, firefighters, paramedics, or police (15%), other health care workers (i.e. non-nurses) (9%), and health and safety specialists (6%), (Figure 1). Government and health care organizations were the largest workplaces represented; 26% of participants were affiliated with each of these sectors. One fifth (20%) of survey respondents were employer representatives and 12% were associated with a labour union.

Figure 1: Job titles of survey respondents (n=467)

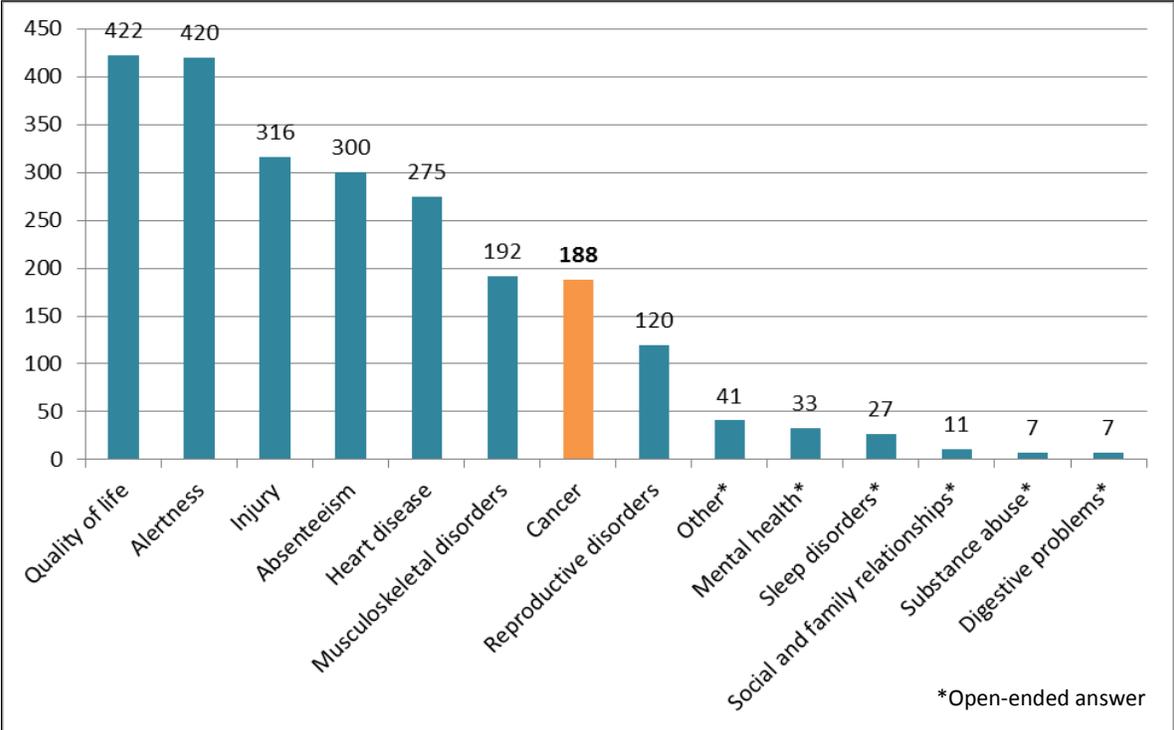


The types and distribution of job positions, job titles, and workplace affiliations of the individuals who responded to this survey reflect how the survey link was disseminated online. Almost half (48%) of participants reported that they heard about the survey through an email from their labour union or professional association; of this fraction, 24% received an email with the survey link from the Ontario Occupational Health Nurses Association. This may explain the large representation of nurses and other health care workers in the survey and subsequently, responses that may be more specific to their workplace environment. Nevertheless, the respondents were fairly heterogeneous in their job positions, job titles, and workplace affiliations which generated results that are valid in representing a variety of workers and workplace settings across Ontario and Canada.

**Knowledge**

Survey respondents demonstrated a good degree of knowledge about shiftwork. Approximately three quarters (72%) felt that the economy is “very” or “extremely” dependent on shiftwork. Less than 10% of survey respondents correctly estimated that 20% of the workforce participates in shiftwork (1), which may be due to the different ways in which people define “shift”. Most (71%) participants were “moderately” or “very” aware of the health impacts of shiftwork, with a greater proportion of nurses (77%) reporting these levels of awareness compared to all participants. The three highest-ranking concerns were quality of life, alertness, and injury. Nurses ranked absenteeism higher than injury, but this difference was very small. Many participants described other concerns open-endedly, ranging from mental health to social and family relationships (Box 1). Around 36% of people were concerned about cancer related to shiftwork (Figure 2).

Figure 2: If you think shiftwork is a health and safety issue among people in your industry/union/group, what are your concerns? (Check all that apply) (n=2359)



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**Box 1: If you think shiftwork is a health and safety issue among people in your industry/union/group, what are your concerns?**

“Sleep disorders, stress/guilt due to family issues- not seeing children before bed/helping with homework etc.” - Worker

“fatigue -related illness and chronic illness in older workers” - Manager

“sex drive, obesity, sleep disorders, depression, use of drugs, alcohol etc. to sleep, hormone disturbances” - Worker

“Retention of skilled workforce”

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**Interventions**

To better characterize the types of interventions that have been implemented to help reduce the health effects of shiftwork, participants indicated which strategies have been attempted in their workplaces (Figure 3). Of the 517 people who responded to the survey, 292 (56%) reported any intervention and of these individuals, the most common intervention identified was a change in shift patterns (30%).

Twenty-eight per cent of all participants stated that their workplaces provided health promotion to encourage sleep when off work; among nurses, this figure was 47%. Fewer people (1%) reported that their workplaces made melatonin accessible or provided fatigue awareness and sleep promotion during shifts (e.g. napping chair/room at the workplace). The range of intervention types is exemplified in Box 2, as well as the lack of recognition of shiftwork as a health hazard which impedes improvement in many workplaces.

Despite any attempted changes, there were relatively few people who reported that they had a positive effect. Only 37 survey participants said that a change in shift patterns was helpful and 36 people felt that all of the other interventions in Figure 3 had a positive impact. Furthermore, the majority (87-88%) of respondents could not identify an employer that is actively involved in the proposal, implementation, or evaluation of preventive interventions for shift workers.

Although half (50%) of the participants strongly thought that shiftwork is a health issue among people in their industry/union/group, only 27% assigned shiftwork a high level of priority in their industry/union/group relative to other health and safety issues. The same results were found when nurses were analyzed separately. Eighty-five per cent of all respondents identified employers as being responsible for addressing potential risks associated with shiftwork, closely followed by unions (71%), workers (70%), government (70%), and supervisor/manager (69%). Nurses in this survey had slightly different responses, as 90% thought that employers are responsible for addressing potential shiftwork-related risks, followed by workers (85%), supervisor/manager (77%), unions (74%), and government (65%).

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**Box 2: Have any attempts been made to change shift patterns or in other ways to reduce the health impacts of shiftwork in your workplace?**

“we have very few employees who work night shift – we changed the way we process our product so that it doesn’t have to be manufactured into the night to get the day’s shipment done” - Manager

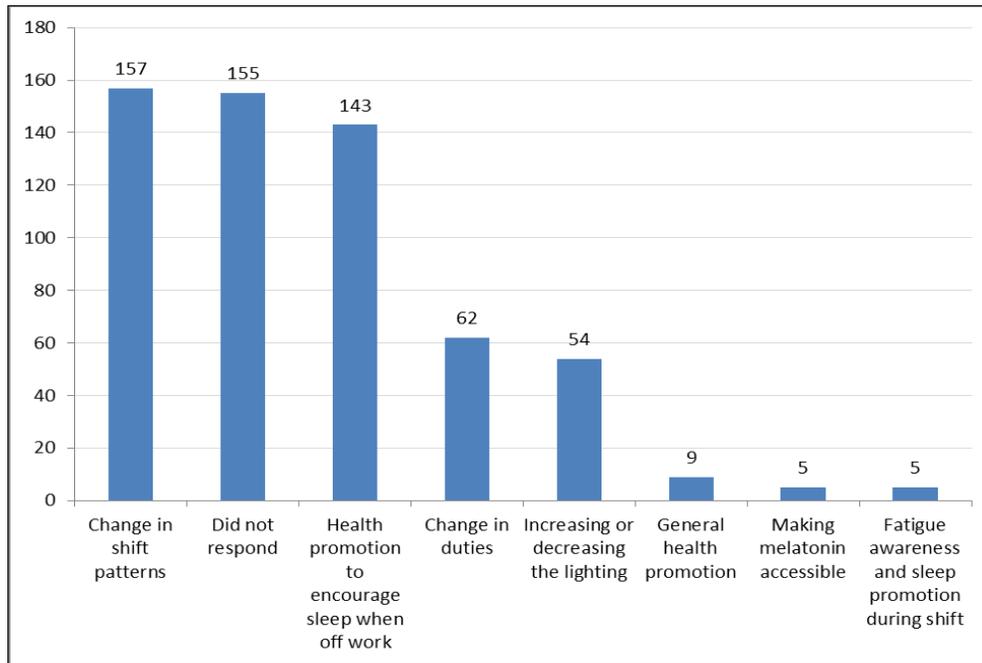
“not really any recognition that it is a hazard – it is just the way it is. The only thing I’ve seen is running a voluntary night shift” - Worker

“We are at the very beginning of looking at developing a policy to encourage our staff to recognize fatigue as a health risk. I could use some help.” - Manager

“change in shift patterns that increased health impacts due to lack of understanding of circadian rhythms” - Worker

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Figure 3: Have any attempts been made to change shift patterns or in other ways to reduce the health impacts of shiftwork in your workplace? (Check all that apply) (n=659)



### Needs

When asked what they would like to receive from a one-day symposium on shiftwork interventions, participants provided open-ended responses that mainly expressed the need for practical resources and evidence about how shiftwork affects health. Almost half (43%) requested “best practice” information to understand which interventions work and to use these examples to facilitate tangible changes in their workplaces. Twenty-six per cent would like to learn about research that shows associations between shiftwork and cancer, among other health effects. About 15% of respondents wanted to gain coping skills, particularly around work-life balance and transitioning between shifts or from work to home. Fewer people (9%) expressed the need for educational resources and health promotion while 7% wanted to enhance their communication skills in order to effectively discuss the health effects of shiftwork and shiftwork interventions with their employers, families, political representatives, and communities (Figure 4). This distribution of answers from all participants was the same for nurses alone. Selected responses that highlight these findings are shown in Box 3.

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#### Box 3: What would you like to receive from a one-day symposium on shiftwork interventions?

“facts, figures and recognized studies that I can take back to management and wsib to prove that shift work can be harmful to a workers heath” - Worker

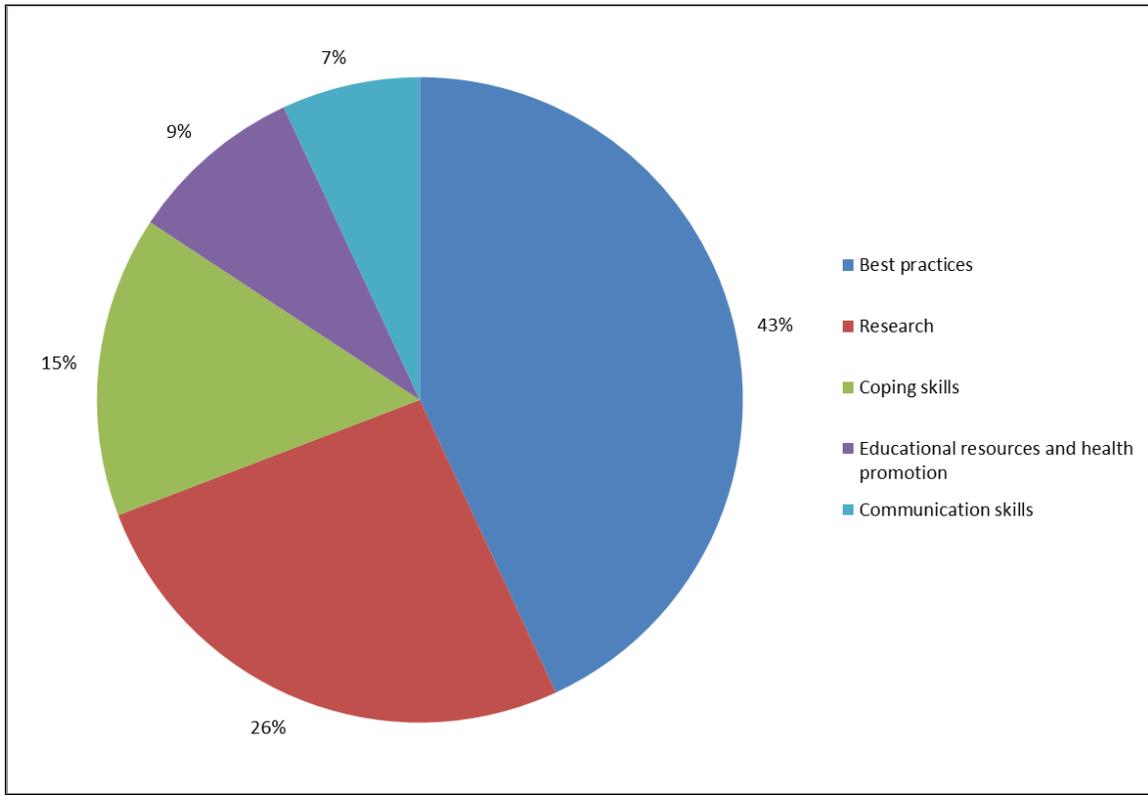
“[Strategies] to encourage employers to work with Health and Safety Committees to create and healthier workplace” - Worker

“Short review on shiftwork issues/effects on the employee as an individual. What important changes does the employee need to make in order to have quality of life. Also feel that looking at the life balance issues for families of shiftworkers as basically they live "outside the norm". How can they work shiftwork and still remain a family a fit into the "norm". - Manager

“Presentation of evaluation from shift work interventions - so that we know what is effective. I have a specific interest in the health effects of shift work - particularly the effect on cancer.” - Worker

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Figure 4: What would you like to receive from a one-day symposium on shiftwork interventions? (n=318)



### ***Knowledge and needs gaps***

Overall, this survey provides rich information from a large number of participants representing many jobs and workplaces across Ontario and elsewhere, with the results mainly driven by health care workers. Those who responded appear to be closely affected by shiftwork and are seeking to build upon their knowledge and abilities to help mitigate the health effects of shiftwork. Survey respondents thought that a substantial proportion of the workforce participates in shiftwork and that the economy is highly dependent on shiftwork. This reflects the significant value that shiftwork brings to workers, employers, the public, and the economy. It is also evident from this survey that there is a high awareness of health impacts of shiftwork and that these effects are wide-ranging in scope. For example, quality of life ranked equally with alertness of the dozen major health concerns expressed in the survey (Figure 2). In addition, cancer was ranked as a lower health concern relative to several others. These results suggest that shift workers are in need of a variety of interventions that broadly prevent illnesses and injury and promote well-being.

A major gap that emerged from this survey was between the importance of shiftwork and the lack of effective interventions occurring in workplaces. While half of the participants reported that some type of intervention had been attempted in their workplace to help reduce the health effects of shiftwork (Figure 3), 73 people in total stated that these interventions resulted in positive changes. This could be due to many factors such as a lack of understanding of how shiftwork affects circadian rhythms and other physiological processes, little and ambiguous scientific evidence of the association between shiftwork and health effects (including cancer) in humans, designing and implementing interventions to suit operational needs rather than to prevent and

mitigate health effects in workers, and the low level of priority of shiftwork relative to other health and safety issues in industries, unions, and groups, according to survey participants. As one manager remarked, “It is totally an uphill battle. I’m fighting history as well as perceptions”.

The challenges of changing long-standing practices and views were also echoed by workers. However, compared to the managers and supervisors who responded to the survey, workers open-endedly described feelings of powerlessness to determine their shiftwork schedule, and subsequently, the health and safety of others and themselves. One worker stated that they were concerned with “too many double shifts in a row, endangering yourself and other employees, [and] being ordered to stay double shifts”. Another expressed that “some workers have complained but union and management haven’t budged on changing it”. These comments underscore the need to address these difficulties so that the design of interventions and control of shifts can be equally shared by workers, managers, supervisors, and other relevant stakeholders. Accordingly, survey respondents thought that the responsibility for addressing potential risks associated with shiftwork should be nearly equally distributed among companies, workers, unions, government, and supervisors/managers.

This survey revealed the need for practical resources and research to support such dialogue and change. Almost half of the survey participants requested that a one-day symposium about shiftwork interventions provide them with information about best practices (Figure 4). Many asked for specific examples of interventions that were both effective and ineffective so that they could take this information and inspire healthy changes to be implemented in their workplaces. Some wanted evidence of the link between shiftwork and disease, particularly pertaining to shiftwork and cancer but also other to conditions such as musculoskeletal disorders. And at a more basic level, approximately a quarter of survey respondents wanted tips to better cope with shiftwork and advice about how to communicate the experience of being a shift worker with their families, management, and others. As one worker asserted, upper management “all work normal hours and do not understand the difficulties encountered with shift work”. This gap, whether real or perceived, emerged as an important need to bridge.

### ***Focus of the shiftwork interventions symposium***

The understanding gained from the results of this survey will help to focus the discussion at an upcoming symposium about shiftwork interventions. This one-day event aims to bring current knowledge and workplace practices to workers, managers, union representatives, researchers, and other stakeholders from a variety of industries and workplaces and hold a space for interaction among stakeholders. The state of research between shiftwork and health will be briefly summarized as this information has been shared at a [previous symposium](#) hosted by the IWH and OCRC in 2010. Based on the needs illustrated in this survey, the symposium will address interventions for the most important stakeholder-identified health issues such as quality of life, alertness, and mental health, with a lesser emphasis on cancer. We will present the results of a literature review of shiftwork interventions and these will be further explored as case studies led by several guest speakers. Overall, this symposium will increase awareness of the health effects of shiftwork, present the most current research about shiftwork interventions, and offer a platform for constructive dialogue and action.

### ***References***

1. Statistics Canada. *Survey of Labour and Income Dynamics (SLID)*. Statistics Canada: 2006.