

# Institute for Work & Health Accomplishments Report 2010



Institute  
for Work &  
Health

Research Excellence  
Advancing Employee  
Health





**2010 Accomplishments Report**

**Research**  
**Knowledge Transfer & Exchange**  
**Publications, Presentations & Awards**

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# 2010 ACCOMPLISHMENTS REPORT

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## Introduction

The mission of the Institute for Work & Health is to conduct research to protect, promote and improve the health of working people and to share this research with workers, labour, employers, clinicians and policy-makers including our primary funder the Workplace Safety and Insurance Board. The Institute is dedicated both to conducting high quality research and making this research evidence available, understandable and usable for decision-makers to assist in creating safer and healthier workplaces.

Our transdisciplinary research is focused in two key areas: preventing work related injuries and illnesses before they occur (primary prevention); and preventing and managing work disability should injuries or illness occur (work disability prevention and management). Prevention of work related injury and illness, evidence-based health care and return to work practices to manage disability are critical elements in an effective health and safety system. They are prominent in the Fundamentals of the WSIB's Five Year Strategic Plan: *The Road to Zero*.

The Institute has a special interest in work-related musculoskeletal conditions (which constitute approximately 70 per cent of disability compensation claims involving time lost from injury) and has acquired considerable expertise in this field. We also investigate broader matters such as labour market experiences and their population health consequences, and conduct research on the design of disability compensation systems and their behavioural consequences.

The goal of our Knowledge Transfer and Exchange (KTE) activities is to build relationships with stakeholders to enable an ongoing exchange of information, ideas and experience. This exchange allows research knowledge to flow to our stakeholder audiences so it can be used in day-to-day decision-making and, in turn, allows practice-based knowledge to flow to researchers to inform and improve the work we do. We use a range of strategies to accomplish this goal and are committed to collaborations with partners in the Ontario prevention system, and with a wide range of other health and safety stakeholders.

Since 1990 we have provided research and other evidence-based products to inform and assist clinicians, employers, labour and other researchers. We also provide evidence to support the policy development processes of federal and provincial institutions, including workers' compensation boards and other organizations in Canada. We provide training and mentorship for the next generation of work and health researchers by sponsoring Masters and PhD students and Post-doctoral fellows as well as, through our seminar and workshop programs. Over the past 19 years the Institute has hosted over 65 in-residence trainees and sabbaticants.

### Research at the Institute

A summary of our 2010 progress and accomplishments in Primary Prevention of Work Related Injury & Illness research; and in Prevention and Management of Work Disability research and in the three Foundation Programs: Data and Information Services, Measurement of Health & Function; and the Systematic Reviews which support this research portfolio are described below.

### Knowledge Transfer & Exchange at the Institute

The overall strategic direction of Knowledge Transfer & Exchange (KTE) is to engage the Institute's stakeholders in research and knowledge transfer to ensure that the research evidence that is generated is available, understandable and usable for decision-making, program planning and practice. Enhancing the visibility of the Institute through communications and marketing is also part of this goal so stakeholders know that the Institute is a dependable resource for research evidence. The KTE accomplishments in 2010 are presented in two ways. A summary of the relevant KTE initiatives in primary prevention and in work disability prevention and management completes each of these sections, providing an integrated picture of how KTE is linked to the research. In addition, there is a separate KTE section that more fully describes accomplishments in our stakeholder relationship and exchange activities, as well as our communications activities.

## **Presentations, Publications, Awards and Collaborators & Staff**

The third and fourth sections report on 2010 publications, presentations, grants and awards, and provide details on professional collaborations and staff appointments as well as information on our academic and service contributions. It is important to note that many of our scientific staff are cross-appointed to other organizations which may require a substantial time commitment. The information reported here, is therefore a reflection of IWH-related activity only.

The final pages of the report also list all IWH staff in 2010, as well as IWH adjunct scientists who have contributed to our activities in the past year.



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## Prevention of Work Related Injury and Illness

The goals in the WSIB Five Year Strategic planning document *The Road to Zero* includes identifying and prioritizing prevention activities and developing initiatives that assist employers and workers in saving lives and eliminating workplace injuries and illness to promote healthy workplaces. The strategic plan sets as a target a 23% reduction in lost time injury claims over this period and it anticipates the use of evidence-based best practices and research to achieve and demonstrate this kind of significant improvement in outcomes and performance.

Almost half of the Institute's core budget in 2010 was devoted to research and KTE activities that focus on evidence based strategies for the primary prevention of workplace injury and illness. This work spans a wide range of methodologies and issues. Our analyses of workers' compensation administrative data including no-lost-time and lost-time workers' compensation claims provide a comprehensive picture of the trends in claim rates across industries and labour force sub-groups. This information is fundamental to planning effective prevention strategies targeting those sub-groups at highest risk. We already know that some groups of workers are at higher risk than others. Workplace policies and practices have significant effects on health and safety within a company. Our research explores how OHS policies and practices in different work environments influence injury and illness. We have made significant progress this past year in several evaluation projects that are examining specific interventions and preventative strategies in the work place including testing safety climate measurement tools and evaluating participatory ergonomic interventions. These evaluations should be of value to the prevention system partners and to individual employers interested in improving their safety record. Our research also leads to the development of tools that can be used by stakeholders, such as the launching of a web based tool, for use by workplace parties interested in evaluating the cost effectiveness of prevention strategies in their workplace and a downloadable guide for participatory ergonomics.

### 2010 Quick Statistics

Completed projects (5)  
Ongoing projects (18)  
New Projects (3)  
Papers published or in press (24)  
Peer review papers submitted (6)  
Presentations of results & stakeholder consultations (20)  
External grants awarded (21)

## **Working Conditions and Health**

Projects in the area of working conditions and health include two new projects, one looking at a longitudinal examination of the relationship between immigrant labour market experiences and another generating methods for surveillance of work injury by time of day in Ontario.

Over the past 15 years, Institute researchers have gained expertise in analyzing large and complex data sets. These include population-based information, such as the Survey of Income & Labour Dynamics (SLID), National Population Health Survey (NPHS), the Canadian Community Health Survey (CCHS) and other Statistics Canada holdings. Through our special research agreements with the WSIB, IWH researchers have also developed an understanding and become adept in analyzing workers' compensation administrative data from Ontario and other provinces.

Our work on analyzing population-level data and compensation claims focuses on gaining a better understanding of working conditions and employment relationships, and risk factors for injury and disability in the labour market.

## **Working Conditions and Health in the Canadian Labour Market (0448)**

**Project Status:** Ongoing

**Introduction:** Over the past seven years, the Institute has established capacity to conduct research using Statistics Canada master files of longitudinal, repeated measure, health and labour market interview surveys (the National Population Health Survey (NPHS), the Survey of Labour Income Dynamics (SLID) and the National Longitudinal Survey of Children and Youth (NLSCY)). The longitudinal cohort in the NPHS now extends to ten years, with the most recent cycle (2004) added at the end of 2007. The SLID now contains information across four different panels from 1993 to 2005. Each survey contains detailed information on health status, disability status, labour market entry, labour market exit and labour market trajectories.

### **Objectives:**

- To apply methods to measure changes in working conditions and examine their effects on different health outcomes.
- To use path analysis examine the relationships between childhood living conditions and adult health and labour market conditions over time.
- To examine if these relationships are consistent across selected groups (e.g., gender, social class).

**Methods:** To date the work under this project has been primarily directed in two areas. The first has been on how best to measure occupational position, and discrepancies between occupational attainment and personal educational potential. These methods have been used to publish a peer-reviewed paper, and will be implemented in future papers under this project. The second area of investigation has been the measurement of change over time. There has been some work to date on how to measure change in working conditions (e.g., job control) between the 1994 and 2000 cycles of the NPHS. This work has been incorporated into a paper currently under peer-review on changes in working conditions and levels of physical activity in Canada.

**Results:** Work was completed and manuscript (S Morassaei, lead author) was submitted to Research Quarterly for Exercise and Sport. Status as of January 2011 is to revise and resubmit. Preliminary work on a study examining labour market experiences and cardiovascular markers using the NPHS has been started by Brendan Smith (PhD student at U of T). This work will focus on the relationship between occupational physical activity and leisure time physical activity in the development of hypertension and diabetes.

**Researchers:** Peter Smith (Principal Investigator), Cameron Mustard, Sara Morassaei, Brendan Smith

**Potential Audiences and Significance:** The results will interest policy-makers, workers' compensation bodies and government departments involved in settings policies related to the provision of health benefits for labour market participants and policies aimed at worker protection through employment regulations.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Publication:**

Morassaei S, Smith PM. The relationship between psychosocial working conditions, physical work demands and leisure time physical activity in Canada. Revise and resubmit: Research Quarterly for Exercise and Sport.

## **The Measurement and Surveillance of Working Conditions and Lost-Time Claims in Ontario (0417)**

**Project Status:** Ongoing

**Introduction:** In 1997, the legislative mandate of the Ontario Workplace Safety & Insurance Board (WSIB) expanded to include an increased focus on the prevention of work-related injuries. IWH has responded to this broadened mandate through an added emphasis on research which seeks to understand the nature and patterns of work and workplace injuries. This secondary surveillance of working conditions and workplace injuries is an integral part of a comprehensive prevention strategy. Effective surveillance involves the accurate reporting of working conditions and injury estimates. Both between particular labour force sub-groups as well as between time points.

Part of the work undertaken in this project is done in parallel with work undertaken in measurement methodology studies (IWH Project 925).

### **Objectives:**

- To conduct surveillance research of policy relevant to the MOL and WSIB.
- To examine differences between self-reported work-related injury information and routinely collected information (e.g., accepted claims from workers' compensation boards).
- To document trends in working conditions and work injuries across different geographical and labour market segments over time.
- To examine the measurement properties of commonly used measures examining labour market experiences (e.g., job control, job satisfaction).

**Methods:** The work performed under this project involves utilising secondary data from Statistics Canada survey and administrative claim data from WSIB. The objectives are to better understand what each data source is measuring (e.g., what do lost-time claims represent, what do "usual hours worked per week" represent), and to create time series to understand trends in particular working conditions among different labour market groups.

**Results:** In 2010 we worked on multiple studies utilising claim data from the Ontario WSIB, and secondary data from Statistics Canada, and other sources. In addition, an overview of available data sources for occupational health and safety research was accepted as part of the Canadian Association for Work and Health special issue in the Canadian Journal of Public Health on occupational health and safety research in Canada. Some of the work in this research portfolio has expanded to include analyses of other measurement related questions using other data sources.

**Researchers:** Peter Smith (Principal Investigator), Sheilah Hogg-Johnson, Cameron Mustard

**Stakeholder Involvement:** Stakeholders at the MOL and the WSIB, as well as possible stakeholders in similar positions in other provinces will be identified.

**Potential Audiences and Significance:** The results of this project will be directly relevant to policy makers at the MOL and the WSIB.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care

### **Publications:**

Breslin FC, Smith PM. A commentary on the unique developmental considerations of youth: Integrating the teenage cortex into the occupational health and safety context. *International Journal of Occupational and Environmental Health* 2010; 16(2):225-229.

Breslin FC, Smith PM, Moore I. Examining the decline in lost time claim rates across age groups in Ontario between 1991 and 2007: Descriptive and multivariate analyses. *Forthcoming: Occupational and Environmental Medicine*.

LaMontagne AD, Smith P, Louie AM, Quinlan M, Ostry AS, Shoveller J. Psychosocial and other Working Conditions: Variation by Employment Arrangement in a Sample of Working Australians. Forthcoming: American Journal of Industrial Medicine.

Morassaei S, Smith P. Switching to daylight saving time and work injuries in Ontario, Canada: 1993-2007. Occupational and Environmental Medicine 2010; 67(12):878-80.

Smith PM, Glazier RH, Sibley LM. The predictors of self-rated health and the relationship between self-rated health and health service needs are similar across socioeconomic groups in Canada. Journal of Clinical Epidemiology 2010; 63(4):412-421.

Smith PM, Morassaei S, Mustard C. Examining changes in the work environment in Quebec, Ontario and Saskatchewan between 1994 and 2003-05. Forthcoming: Canadian Journal of Public Health.

Smith PM, Stock S, McLeod CB, Koehoorn M, Marchand A, Mustard CA. Research opportunities using administrative databases and existing surveys for new knowledge in occupational health and safety in Canada, Quebec, Ontario and British Columbia. Canadian Journal of Public Health 2010; 101 (Suppl 1):S46-S52.

Wu JSY, Beaton DE, Smith PM, Hagen NA. Patterns of pain and interference patients with painful bone metastases: A brief inventory validation study. Journal of Pain and Symptom Management 2010; 39(2): 230-240.

**Presentations:**

Smith P. The changing work environment in Quebec, Ontario and Saskatchewan between 1994 and 2003-2005. 14-17 Jun 2010; Amsterdam: ICOH-WOPS Conference.

Smith P, Bielecky A. Calculating denominators for WSIB injury claim rates. 13 Oct 2010; Toronto, ON: Municipal and Education Advisory Council, Public Sector Health & Safety Association.

## Ten-year Mortality Follow-up for Occupations in the 1991 Canadian Census (0461)

**Project Status:** Completed

**Introduction:** The relationship between life expectancy and occupation has been described poorly in Canada relative to surveillance and monitoring efforts in other OECD countries. Evidence is accumulating that the cumulative impact of labour market experiences influences the initiation and progression of chronic disease processes. This research uses a new population-based longitudinal person-oriented database formed by Statistics Canada from the linkage of two existing databases: 1) respondents to the long-form of the 1991 census and 2) the Canadian Mortality Data Base. Over the ten year follow-up period of 1991 census respondents, approximately 300,000 deaths are expected to occur in this sample. The resulting database will consist of records for approximately 4.5 million persons, with approximately 45 million years of follow-up. The linkage undertaken by this project will complement the limited Canadian occupational mortality surveillance data currently available. In addition, through the integration of job exposure matrix information from health interview surveys in Canada, mortality risk in relation to position in the occupational hierarchy and in relation to adverse occupational psychosocial and physical work exposures will be estimated.

### **Objectives:**

- To provide current estimates of socioeconomic mortality differences for the Canadian population. An important emphasis will be to estimate mortality rates - by cause of death - for Canadian occupations. These estimates are currently unavailable.

**Methods:** There are two phases to this project. The first phase, conducted by Statistics Canada, involved the linkage of a 15% sample of the census records to the Canada Mortality Data Base. This phase was completed in the spring of 2008 and the analysis dataset was established at the Toronto Regional Office of Statistics Canada. The analysis phase of the project commenced in the spring of 2008, focused on the description of occupational mortality for all causes and for cancer, circulatory system disorders, accidents and avoidable mortality. Analytic work will be conducted both by Statistics Canada and by a working group at the Institute for Work & Health.

**Results:** The project has completed reports on the occupational gradient in cancer mortality in Canada, 2) the occupational gradient in suicide mortality and 3) the occupational gradient in mortality amenable to medical care. A report is in progress describing differences in mortality risk among working-age adults with disability. The project final report has been submitted to the WSIB RAC.

**Researchers:** Cameron Mustard (Principal Investigator), Jacob Etches, Kristan Aronson (Queens University), Russell Wilkins (Statistics Canada)

**Stakeholder Involvement:** Reimer Gaertner (Manager, Occupational Disease Policy Section, WSIB; S Paradis (Director, Policy and Major Projects, Health Canada); Richard Lessard (Director of Public Health, Montreal Centre Regional Health Authority)

**Potential Audiences and Significance:** There will be many audiences for this information, ranging from Health Canada and provincial ministries of health to regional health authorities and municipalities. WSIB staff with expertise in occupational disease epidemiology have joined the project team. The results will be broadly influential in policy settings concerned with the allocation of public expenditures to protect and improve the health of the population. The contribution of the project to improved understanding of occupational mortality will be important to workplace parties and to government regulatory and insurance agencies.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Publications:**

Etches J, Mustard CA. Education and mortality in Canada: Mediation by behavioural and material factors. Submitted: Journal of Epidemiology and Community Health (IWH WP# 278).



Mustard CA, Bielecky A, Etches J, Wilkins R, Tjepkema M, Amick B, Smith P, Aronson K. Cancer mortality by occupation in Canada: 1991-2001. Submitted: Journal of Occupational and Environmental Medicine

Mustard CA, Bielecky A, Etches J, Wilkins R, Tjepkema M, Amick BC, et al. (with Smith PM, Gnam W) Suicide mortality by occupation in Canada, 1991-2001. Canadian Journal of Psychiatry 2010; 55(6):369-376.

Mustard CA, Bielecky A, Etches J, Wilkins R, Tjepkema M, Amick BC, et al. (with Smith PM) Avoidable mortality for causes amenable to medical care, by occupation in Canada, 1991-2001. Canadian Journal of Public Health 2010;101(6):500-506.

**Presentations:**

Etches J, Mustard CA. Relative and absolute inequalities in cause-specific mortality among Canadian adults by socio-economic indicator. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference.

Mustard CA, Bielecky A, Etches J, Wilkins R, Tjepkema M, Amick BC et al. (with Smith PM) Avoidable mortality for causes amenable to medical care, by occupation in Canada, 1991-2001. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work & Health Conference.

Mustard CA, Etches J, Bielecky A et al. Suicide mortality, by occupation in Canada, 1991-2001. 28-29 May 2010: Toronto, ON: Canadian Association for Research on Work and Health Conference.

**Funding:**

Mustard CA, Aronson K, Amick BC. Mortality by occupation in Canada: A ten year follow-up of a 15% sample of the 1991 census. WSIB RAC: \$224,300 (2007-2010)

## **The Prevalence of Hand Disorders Amongst Hand Held Device Users (0203)**

**Project Status:** Completed

**Introduction:** Use of hand held devices is increasing: these devices may be phones, PDAs, iPods or devices combining multiple functions. Most include a mini-keyboard or stylus or thumb wheel/pad as the primary input interface. The use of such hand held devices has been linked in the press and clinical professional literature to MSDs of the hand and primarily of the thumb. However, despite these reports, there is little information in the peer-reviewed literature to help gauge the prevalence of the thumb/hand troubles.

**Objectives:**

- To describe the prevalence of hand and upper limb symptoms amongst hand held device users and the association between specific factors of device usage and symptoms.

**Methods:** A cross-sectional survey administered via the web to a sample of over 2000 hand-held device users.

**Results:** The questionnaire was refined and edited based on analysis that was conducted and then analysed the data from the completed questionnaires. We applied for a WSIB Bridging The Gap grant for further funding focusing on use of netbooks; the application was not funded. Submitted peer-reviewed paper for publication and received notice of acceptance.

**Researchers:** Richard Wells (Principal Investigator) (University of Waterloo), Ben Amick, Kiera Keown, Philip Kiff, Dylan Maccarone

**Stakeholder Involvement:** Workplace parties, clinicians, external researchers.

**Potential Audiences and Significance:** Clinicians, WSIB

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

**Publication:**

Berolo S, Wells RP, Amick BC, III. Musculoskeletal symptoms among mobile hand-held device users and their relationship to device use: A preliminary study in a Canadian university population. *Applied Ergonomics* 2010; 42(2):371-378.

**Funding:**

Wells R, Amick BC, III. The prevalence of hand disorders amongst hand held device users and their relationship to patterns of device usage. Office Ergonomics Research Committee (OERC): \$23,720 (2009-2010)

## **Healthy and Productive Workers Designing a Multidisciplinary Health Promotion and Wellness Program to Improve Presenteeism at Work (1140)**

**Project Status:** Ongoing

**Introduction:** Ontario workplaces are currently experiencing profound changes in their workforce. The changing nature of work and the significant demographic shift observed in our population may result in a workforce that is likely to be at work despite chronic disease and disability. This reality impacts the quality of life of workers and their ability to perform on the job. In an attempt to minimize this problem, workplaces are implementing health promotion and wellness programs aimed at maximizing employee health, prevent chronic health problems and optimize production.

**Objectives:**

- To develop a wellness program for the workplace using an innovative participatory methodology that focuses on the experience and need of stakeholders.

**Methods:** There are three phases involved in the project. Phase I involves a systematic review of the literature to identify workplace interventions that improve presenteeism, to identify important health issues impacting presenteeism and the workplace and to identify characteristics of successful workplace health promotion programs. Phase II entails conducting a needs assessment with our workplace partner to identify health issues and health related risk factors that may impact workers ability to perform their work. Phase III involves the design of a workplace health promotion program using intervention mapping. An intervention mapping methodology will be used where evidence is combined with theory and practical experiences of important stakeholders in systematic way. A combination of one-on-one interviews, discussion group sessions and focus groups will be the main method of data collection. Data synthesis will be done through consensus using an iterative process.

**Results:** To date we have completed Phase I of the project. The systematic review had been submitted for publication to BMC Public Health in February 2011. We have signed an agreement with Sunlife Canada who will be our workplace partner. Ethics approval has been obtained.

**Researchers:** Carlo Ammendolia (Principal Investigator), Linda de Bruin

**Stakeholder Involvement:** Workplace unions, supervisors, employees, disability managers, health & safety personnel, decision makers and workplace health care providers will participate in the project.

**Potential Audiences and Significance:** Third party insurers, workplaces, policy makers and health care providers will be interested in an evidence-based health promotion and wellness program aimed at maximizing employee health, prevent chronic health problems and optimize work production.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Funding:**

Ammendolia C. Healthy and productive workers – designing a multidisciplinary health promotion and wellness program to improve presenteeism at the workplace. Canadian Chiropractic College: \$149,500 (Nov'09-Jan'11)

## **A Longitudinal Examination of the Relationship Between Labour Market Experiences, Health Behaviours and the Incidence of Diabetes and Hypertension (1165)**

**Project Status:** Ongoing

**Introduction:** Immigration is an increasingly important aspect of Canadian society and the Canadian labour market. One in five labour market participants is an immigrant. New immigration is expected to account for all labour market growth within the next five years. Past research has suggested that certain immigrant groups (e.g. South Asian) may be at higher risk for particular health problems such as diabetes and high blood pressure compared to people born in Canada. Examining factors associated with diabetes and high blood pressure is important as both these diseases have increased rapidly over the previous two decades.

### **Objectives:**

- To examine the relationship between immigrant status, working conditions and the incidence of diabetes and hypertension over a five- to seven-year period. This research will help us to understand the relative contribution that ethnicity, work conditions and health behaviours have on two increasingly important health outcomes, and suggest potential prevention and policy responses to decrease the numbers of Canadians, in particular immigrants, who suffer from both conditions.

**Methods:** This project will use time to event models to examine their relationships between immigrant status, ethnicity, and labour market conditions in the development of diabetes and hypertension using the linked Canadian Community Health Survey and Ontario Health Insurance Plan databases

**Results:** Work on this project was delayed due to a decision by Statistics Canada to limit access to the dataset to researchers sponsored by the Ministry of Health. Through the second half of 2010 this issue was resolved. Analytical work has been completed for a manuscript examining hypertension as an outcome, with work underway for a paper examining diabetes as an outcome. These two manuscripts will be submitted for publication in the first half of 2011.

**Researchers:** Peter Smith (Principal Investigator), Cameron Mustard, Richard Glazier (ICES)

**Stakeholder Involvement:** Limited stakeholder involvement given the use of secondary data.

**Potential Audiences and Significance:** The results of this project are directly relevant to policy makers at the Ministry of Health and Long-Term Care. They are also of interest to immigrant agencies in Ontario.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Funding:**

Smith P, Glazier R, Mustard CA. A longitudinal examination of the relationship between immigrant labour market experiences, health behaviours and the incidence of diabetes and hypertension. CIHR: \$64,995 (2009-2010)

## **Shift Work Symposium (1170)**

**Project Status:** Completed

**Introduction:** The Occupational Cancer Research Centre and the Institute for Work & Health co-hosting a scientific symposium on the health effects of shift work in Toronto on April 12, 2010. Researchers have explored possible health effects of shift work, including sleep disturbance, injury risk, cardiovascular disease, pregnancy complications, and cancer.

**Objectives:**

- To review the state of evidence for possible health effects arising from shift work, and
- To provide a foundation for subsequent discussions concerning research priorities and policy initiatives.

**Results:** The symposium was held on April 12, 2010 with over 100 participants. A summary report, presentation slides and other information about the symposium were posted on the IWH website in early May.

An evaluation of the symposium, through an on-line questionnaire sent to participants, was also completed in early May, 2010. The ratings were strong, including an average rating of 4.68 on a 5-point scale for overall organization of the event.

**Researchers:** Ron Saunders (Coordinator), Anita Dubey, Lyudmila Mansurova, Cameron Mustard, Shanti Raktoe

**Potential Audiences and Significance:** Approximately 120 participants attended the symposium, invited from the Ontario research community and from representatives of organized labour, business, and provincial government agencies.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Publication:**

Summary Report. Scientific symposium on the health effects of shift work. Toronto, April 12, 2010. Occupational Cancer Research Centre and the Institute for Work & Health. [www.iwh.on.ca/shift-work-symposium](http://www.iwh.on.ca/shift-work-symposium)

**Presentation:**

Chambers A, Mustard CA, Smith P. Shift work and health: estimating the population attributable risk. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference.

## **Support to the Expert Advisory Panel, Ministry of Labour (1175)**

**Project Status:** Ongoing

**Introduction:** On January 27, 2010, the Minister of Labour announced the appointment of the Chair of an Expert Advisory Panel, Mr Tony Dean, to review the design and delivery of prevention services in occupational health and safety in Ontario. The Expert Advisory Panel, comprising representatives of organized labour, employers and academic experts, reported to the Minister of Labour in December 2010.

**Objectives:** To provide support to the Expert Advisory Panel through:

- The secondment of Dr Ron Saunders as Scientific Officer to assist the secretariat of the Expert Advisory Panel.
- A review of the operational coordination of prevention services in seven international jurisdictions, to be provided to the Panel in May 2010.
- Commissioned research on specific issues, at the direction of the Expert Advisory Panel.

**Results:** Secondment of Dr. Ron Saunders was seconded to the panel on a part time basis as a scientific advisor. The review of seven international jurisdictions was completed in the spring of 2010. Members of the Institute's scientific staff provided a series of invited briefings to Working Groups supporting the development of options for the Expert Advisory Panel. Many of the recommendations provided by the Expert Advisory Panel were informed by research provided by the Institute for Work & Health.

**Researchers:** Cameron Mustard (Principal Investigator), Ron Saunders

**Potential Audiences and Significance:** The Expert Advisory Panel recommendations address legislative, regulatory and administrative reforms that promise to improve the effectiveness and efficiency of public services devoted to the protection of the health of Ontario workers.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

### **Publications:**

A set of seven papers, prepared by the Institute for Work & Health for the Expert Advisory Panel, provides descriptions of the OHS system and delivery of prevention services in seven jurisdictions (three Canadian provinces: Ontario, Quebec, and British Columbia; the state of Victoria in Australia; the United Kingdom; Germany; and New Zealand). <http://www.iwh.on.ca/interjurisdictional-review>

### **Presentations:**

Mustard CA, Saunders R. Trends in the incidence of occupational injury and illness. 29 Mar 2010; Toronto, ON: Expert Advisory Panel, Ministry of Labour.

Mustard CA. Review of the occupational health and safety prevention and enforcement system: Jurisdiction summaries. 15 Jun 2010; Toronto, ON: Expert Advisory Panel, Ministry of Labour.

## Methods for the Surveillance of Work Injury by Time of Day in Ontario (1185)

**Project Status:** Ongoing

**Introduction:** About 25% of full-time workers aged 19-64 in Canada worked shifts in 2005. Research evidence has identified a number of potential health risks associated with shift work. There is particularly strong evidence that night, evening, rotating and irregular shifts are associated with an elevated risk of occupational injury. As many as 6-7% of workplace injuries can be attributed to the higher risk of injury associated with shift work schedules. In Ontario, there is currently no adequate method for monitoring the differences in work injury risk according to the time period of work. This project will address this gap in occupational health surveillance capacity by developing methods to estimate the association between the rate of work-related injury and time of injury for labour force participants in Ontario for the period 2004-2008. This project will evaluate emergency department encounter records as a source of information for the surveillance of work-related injury and illness in Ontario.

### Objectives:

- To compare the incidence of work-related injury and illness presenting to Ontario emergency departments to the incidence of worker's compensation claims filed with the Ontario Workplace Safety and Insurance Board over the period 2004-2008
- To use both data sources to estimate the incidence of work-related injury in relation to time of day of injury occurrence.

**Methods:** Information on the hour of work injury, measured across the 24 hour clock, will be obtained from two sources of administrative records in Ontario for the period 2004-2008: workers' compensation lost-time claims (N=422,200) and records of non-scheduled emergency department visits where the main problem is attributed to a work-related exposure (N=704,300). Denominator information required to compute the risk of work injury per 200,000 hours, stratified by age, gender, occupation and industry, for eight three-hour periods over the 24 hour clock, will be estimated from labour force surveys and population surveys conducted by Statistics Canada.

**Results:** Progress to date on this project has determined that the number of emergency department visits for all work-related conditions was approximately 60% greater than the incidence of accepted lost-time compensation claims. When restricted to injuries resulting in fracture or concussion, injury incidence was similar in the two data sources. Between 2004 and 2008, there was a 17.3% reduction in emergency department visits attributed to work-related causes and a 17.8% reduction in lost-time compensation claims. There was evidence that younger workers were more likely than older workers to seek treatment in an emergency department for work-related injury.

**Researchers:** Cameron Mustard (Principal Investigator), Peter Smith, Ron Saunders, Christopher McLeod (University of British Columbia)

**Stakeholder Involvement:** The project team has consulted with representatives of the Ontario Ministry of Labour and representatives of labour unions.

**Potential Audiences and Significance:** The results of this work are expected to identify characteristics of workers, occupations, industries and injury events that are associated with the risk of work injury by time of day. These findings will be of interest to prevention authorities. Prevention authorities will also be interested in a detailed assessment of the validity of emergency department records as a source of surveillance information on the health of workers in Ontario.

**Links to WSIB Policy & Program Priorities:** Health and Safety, Effective Prevention of Injury & Illness

### Publication:

Mustard CA, Chambers A, McLeod C, Bielecky A, Smith PM. Submitted: Comparison of two data sources for the surveillance of work injury.

## **Vulnerable Workers**

For the past several years, new and young workers have been a key population of interest to IWH researchers. These workers are most at risk of injury during the first month on a job. In 2008, we broadened our interest in young workers to examine the relationships between learning disabilities, type of job held and work injury risk. We also explored the level of risk among young workers who had not finished high school.

Another population that may be considered vulnerable to workplace injury or illness are immigrants, who make up an increasing segment of the Canadian labour force. IWH researchers initiated a WSIB RAC funded study with focus on the labour market experiences of immigrant workers in Ontario and Canada using a number of secondary data sources originally collected by Statistics Canada in 2007. This project compared immigrant workers' risk of workplace injury with Canadian-born workers. IWH researchers investigated the nature of these risks or protective factors relating to immigrant workers, including characteristics related to workers themselves (e.g. ethnicity, gender), type of occupations (physical demand), and organizational factors (workplace size, industry).



## **Geographic Distribution of Work Injury (0437)**

**Project Status:** Ongoing

**Introduction:** Previous research shows the work injury rates differ by province and regions within a province. These geographic differences in work injury risk may be related to provincial work safety policies, regional demographics, the region's socioeconomic status and social capital, and the region's labour market characteristics (e.g., industrial mix, unionization rates). We will use a national survey to describe the work injury risk by province and regions within a province, as well as to identify the correlates of the variability. We will also determine the degree to which geographic variation in work injury risk differs for men and women. This project will provide some of the most detailed information on the geographic distribution and correlates of work injury.

### **Objectives:**

- To describe and map geographic variation in work injuries at the provincial and sub-provincial level, with sub analyses by gender and industry;
- To examine the association between injury risk and the regional socioeconomic indicators (e.g., household income, residential stability), regional labour market characteristics (e.g., firm size, unionization density), province of residence, demographic, and work-related characteristics;
- To specifically examine gender differences in the individual- and place-level factors predicting men's and women's work injuries. As part of these analyses we also plan to examine rate of repetitive strain injuries. These analyses will be completed with particular attention to gender differences, given the strong gender segregation of the labour market.

**Methods:** The primary data will be the combined Canadian Community Health Survey 2003 and 2005 cycles, cross-sectional surveys that include over 110,000 respondents who reported working in the past 12 months as well as reports of work injury. Additional data to operationalize constructs such as regional labour market characteristics, and regional socioeconomic status will be obtained from Census data, other Statistics Canada surveys, and provincial Ministries of Labour.

**Results:** Workers in Western Canada are more likely to sustain work related acute and repetitive strain injuries than workers in similar occupations elsewhere in the country. British Columbia has the highest provincial self-reported rate for work-related repetitive strain injuries.

**Researchers:** Curtis Breslin (Principal Investigator), Ben Amick, Selahadin Ibrahim, Sara Morassaei, Kathy Padkapayeva, Jeremy Petch, Peter Smith, James Dunn, Ketan Shankardass (St. Michael's Hospital)

**Stakeholder Involvement:** WSPS, CAW, Ministry of Labour

**Potential Audiences and Significance:** This project will provide some of the most detailed information on the geographic distribution and correlates of work injuries. This knowledge could, for example, help the preventions system efficiently target resources and activities on regional "hot spots".

**Links to WSIB Policy & Program Priorities:** Health and Safety, Effective Prevention of Injury & Illness

### **Presentation:**

Breslin FC, Ibrahim S, Smith P, Shankardass KJ, Amick BC. Regional variation in self-reported work injuries among Ontario service sector workers. 16 Nov 2010; Toronto ON: IWH Plenary.

### **Funding:**

Breslin FC, Amick BC, Dunn JR, Ibrahim S, Shankardass K, Smith PM. Geographic variation in occupational injury and its correlates among Canadian men and women. CIHR: \$127,112 (Oct'09-Sep'11)

## **Prevention is the Best Medicine (1155)**

**Project Status:** Ongoing

**Introduction:** New immigrants to Ontario have a greater probability of being employed in jobs with a higher number of occupational health and safety hazards. In addition, recent immigrants may have higher risks of work injuries and be less likely to access compensation after injury. Despite these occupational health and safety risks, information provided to new immigrants about occupational health and safety or workers' compensation is often informal and fragmented. The goal of this project is to develop an information and training module on workplace rights, occupational health & safety and workers' compensation which could be systematically delivered through settlement agencies and integrated into existing language, job search and employment programs for new immigrants. While acknowledging that employers and regulatory bodies also have responsibility for occupational health & safety, new immigrants must know how to protect themselves from harm in the workplace, what to do in the event of an injury and how to access services and supports. The development of the proposed module has the potential to improve existing services offered to new immigrants and increase immigrant worker knowledge about health and safety before a workplace problem or injury occurs. Such knowledge can help reduce the risk of injury and lead to more positive social, health and economic outcomes.

### **Objectives:**

- To develop an information and training module on workplace rights, occupational health & safety and workers' compensation.

**Results:** A scan has been conducted of workplace rights, occupational health & safety and workers' compensation information which is currently provided to new immigrants in Ontario via settlement agencies and programs; Health and Safety Associations, WSIB, etc. Lists of organizations, sources, etc. have been compiled and a searchable database developed. In consultation with project partners, we will discuss how a tool can best be integrated into their existing work, and we will begin developing the module.

**Researchers:** Agnieszka Kosny (Principal Investigator), Curtis Breslin, Ron Saunders, Peter Smith

**Stakeholder Involvement:** Project advisory committee will assist in the development of the tool: Roland Rhooms (Skills for Change); Kiran Kapoor (Workplace Safety and Prevention Services); Laura Pascoe & Tom Parkin (Workers Health and Safety Centre); Ann Missetich, Nick Robins, Maria Papoutsis (Ministry of Labour); Leslie Piekarz (OHCOW); Marion Endicot, John McKinnon, Rebecca Lok (Injured Workers' Consultants).

**Potential Audiences and Significance:** The project will provide up-to-date, relevant information and resources to settlement service providers, workers advocates and their clients about OHS, workplace rights and responsibilities and workers' compensation.

**Links to WSIB Policy & Program Priorities:** Health and Safety, Effective Prevention of Injury & Illness

### **Funding:**

Kosny A, Smith PM, Breslin FC, Saunders R. Prevention is the best medicine: Developing a tool to share information about workplace rights, occupational health and safety and compensation with new immigrant workers in Ontario. WSIB BTG: \$34,900 (Sep'10-Aug'11)

## **Preventing Musculoskeletal Disorders**

These research projects will assess the effectiveness of approaches to the prevention of non-traumatic musculoskeletal disorders in two economic sectors. We will aim to produce new knowledge about the effectiveness of in-person training programs compared with computer-based training programs for workers in seated office environments.

## **Development and Evaluation of a Computer-based Training Program to Prevent and Manage Musculoskeletal Injuries in Computer-based Work Environments (1150)**

**Project Status:** Ongoing

**Introduction:** Ontario's growing knowledge and service industries are driven by computing and communication technologies. Consequently, more workers will be exposed to computer-based health and safety hazards. Conducting in-person training (IPT) as a prevention action is time and cost intensive. Computer-based training (CBT) has been shown to be just as effective as IPT in knowledge transfer/acquisition and changing behaviours. CBTs can be delivered quickly with minimal cost. With changing office work environments, however, it is important for office ergonomic training to be as up-to-date as possible with science and standards (e.g. CSA, ANSI and ISO). An office ergonomic expert panel will be convened to ensure the CBT is standard-compliant and comports with recent evidence. Instructional system design theory and usability assessment methods will guide the CBT design and development. The final product will be an evidence-based/standards-compliant office ergonomics CBT program that can be used by workplace parties in combination with other office ergonomic hazard control methods.

### **Objectives:**

- To partner with the Centre for Addiction and Mental Health.
- To develop an evidence-based/standard-compliant office ergonomics CBT program.
- To test the program's effectiveness in transferring the knowledge and skills required to reduce musculoskeletal disorder symptoms/injuries.

**Methods:** The research team will conduct a longitudinal study at CAMH where a group of 50-60 workers will be followed over time. Data will be collected using internet-based self-administered questionnaires to assess health and self-efficacy, in-person self-administered knowledge test before and after the training, observational data to assess ergonomic risk and appropriate ergonomic adjustment. To develop the CBT we will conduct a preliminary assessment of whether the CBT is designed based on the current standards and the scientific evidence using an expert panel of ergonomists. We will conduct two formative user assessments with one focus group of the expert panel and two focus groups of CAMH employees. The CBT will be based on a successful in-person office ergonomics training.

**Results:** Organization and confirmation of the work plan, budget, roles and responsibilities with all team members was finalized. Commenced creating content base for the CBT. Obtained ethics approval. Met with CAMH Joint Health & Safety Committee (JHSC) to discuss the pilot project. Content was released to ergonomics experts for review. Development based on reviewed content commenced. Usability testing was completed at the University of Waterloo. Met with the JHSC to discuss recruitment for focus groups.

**Researchers:** Ben Amick (Principal Investigator), Lynda Robson, Ivan Steenstra, Dwayne Van Eerd, Betty Dondertman (Centre for Addiction & Mental Health), Michelle Robertson (Liberty Mutual Research Institute for Safety)

**Stakeholder Involvement:** CAMH, Liberty Mutual, University of Waterloo

**Potential Audiences and Significance:** Ergonomists, clinicians, external researchers, employers.

**Links to WSIB Policy & Program Priorities:** Health and Safety, Effective Prevention of Injury & Illness

### **Funding:**

Amick BC, III, Dondertman B, Robertson M, Robson L, Steenstra I, Van Eerd D. Development and evaluation of a computer-based training program to prevent and manage musculoskeletal injuries in computer-based work environments. WSIB BTG: \$56,680 (Jan'10-Dec'10)

## **A Randomized Control Trial of the Effectiveness of Two Office Ergonomic Training Approaches for Seated Environments: Comparing an In-person to Computer-based Training (0261)**

**Project Status:** Ongoing

**Introduction:** As the Canadian economy shifts to a service industry base, questions about how to reduce musculoskeletal injuries among knowledge workers become more important. Numerous studies have documented the role of occupational health and safety training in improving workplace health. While many companies offer computer-based training there is little evidence on the effectiveness of computer-based training compared to in-person training.

### **Objectives:**

- To produce new knowledge about the effectiveness of in person training programs as compared with computer-based training programs for knowledge workers in seated environments. Specifically: 1) to contribute to the nascent intervention effectiveness literature in office environments by identifying key pathways for reducing MSK injury risk and demonstrate economic benefits; 2) to provide evidence to support Ontario in progressing along to *The Road to Zero*; 3) to contribute to the evidence base on the effectiveness of worker health and safety training in office ergonomics.

**Methods:** To test the primary health and lost productivity outcome hypotheses, the research team will conduct a longitudinal study at OPG where groups will be randomly assigned to either intervention or control. Cluster randomization will be used to avoid contamination.

**Results:** Developed all the measures and tools for the project including the development of the training and the on-line survey and observational tools. All tools have been pilot tested.

**Researchers:** Ben Amick (Principal Investigator), Dorcas Beaton, Philip Bigelow, Donald Cole, Peter Smith, Ivan Steenstra, Emile Tompa, Michelle Robertson (Liberty Mutual Research Institute for Safety)

**Stakeholder Involvement:** Ontario Power Generation, Liberty Mutual

**Potential Audiences and Significance:** MOL, WSIB, HSAs, Employers, Labour, Training Companies

**Links to WSIB Policy & Program Priorities:** Health and Safety, Effective Prevention of Injury & Illness

### **Funding:**

Amick BC, Van Eerd D, Steenstra I, Smith P, Cole DC, Ibrahim S, Tompa E, Bigelow P, Robertson M, Beaton DE. A randomized controlled trial of the effectiveness of two office ergonomic training approaches for seated environments: Comparing an in-person to computer-based training. WSIB-RAC: \$235,047 (2008-2010)

## **Effective Occupational Health and Safety Practice**

IWH has initiated a number of research projects to refine the measurement of organizational policies and practices that support optimal workplace practices. In 2010 we started to benchmark leading organizational indicators for the prevention and management of injuries and illnesses, in addition to, examining leading Indicators from OHS Audit Data.

## Development of Leading Indicators for the Prevention of Injuries and Illness (1105)

**Project Status:** Completed

**Introduction:** It is recognized that to better understand how the occupational health and safety system is performing in protecting workers from injury and in helping injured workers to return to work and function effectively in their job, Ontario Prevention System Partners must know about the characteristics of the firms that are leading the observed injury and illness rates in the Province. However, information on these leading indicators is not readily available in administrative data. To resolve this information gap, OHSCO has led the development of a survey to be administered by HSAs to measure key organizational performance indicators. The focus of this effort is on safety culture.

**Objectives:**

- To conduct a pilot study to demonstrate the feasibility of collecting this information from employers, the types of reports needed by the WSIB, MOL and the HSAs to make the information useful and to determine how well the safety culture measures are associated with injuries and illnesses.

**Methods:** HSAs were invited to participate in a survey of organization benchmarking indices. A simple two-page questionnaire was constructed to be completed by a representative of a workplace. The questionnaire contained eight questions about health and safety practices within the firm and also was designed to gather information about who the respondent was and the size of the company. Participating HSAs were asked to sample 100 firms each - with the sampling strategy left up to the HSA. Hard copy questionnaires were returned to IWH for data entry. Firm level claims information for each of the participating firms (at least those providing a firm number) were extracted to give information about claim history from January 1, 2006 to December 31, 2008. Psychometric properties of the eight questions were evaluated. Comparisons of the eight health and safety items and claims statistics will be conducted.

**Results:** The team developed an eight-item questionnaire that was then administered to over 800 workplaces. One respondent in each workplace was asked to assess the degree to which their organization adhered to optimal occupational health and safety policies and practices. Respondents' answers were scored and matched to their organization's injury rates over the previous three-plus years. Workplaces where respondents reported higher scores had lower injury claim rates. Although more work needs to be done to determine the reliability and best use of this eight-item questionnaire, it is an important step in the development of a "leading indicator" measurement tool that could be of benefit to occupational health and safety stakeholders in Ontario and beyond.

**Researchers:** Ben Amick, Sheilah Hogg-Johnson (Principal Investigators), Michael Swift

**Stakeholder Involvement:** WSIB, MOL, HSAs, Employers, Labour, Clinicians, Disability Managers, Injured Workers.

**Potential Audiences and Significance:** There is very keen interest in the prevention system partners now for establishing leading indicators of health and safety. The questions used on this questionnaire may provide valuable information about prevention performance in firms.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Publication:**

Benchmarking organizational leading indicators for the prevention and management of injuries and illnesses. Final Report. Institute for Work & Health, 2010,

## **High Risk Firm Initiative: Assessing the Impact of Targeted Prevention Consultation Services (0432)**

**Project Status:** Ongoing

**Introduction:** In 2005, the Ontario Ministry of Labour (MOL) led the development of the Ontario High Risk Firm Initiative, a comprehensive approach to workplace health and safety that aligns the efforts of the MoL inspectorate and the technical consulting and training staff of the Health and Safety Associations (HSAs). Under this initiative, the Ontario government committed to the goal of reducing workplace injuries by 20 per cent over a four-year period. The initiative features two core elements: 1) enhanced inspection and enforcement of health-and-safety systems in Ontario workplaces; and 2) the delivery of education, training and consultation services. The initiative targets Ontario workplaces with the poorest health-and-safety performance. Early in 2005, the Institute for Work & Health was invited to lead in the development of options for an evaluation of the High Risk Firm Initiative. These evaluation options were discussed at a workshop held in Toronto on June 23, 2005 with participation from program staff at the MOL, the WSIB and the HSAs. At this workshop, Dr. Ben Amick, Dr. Barbara Silverstein and Dr. John Mendeloff participated as external discussants. They gave a strong endorsement of the value of a rigorous evaluation of the Ontario High Risk Firm Initiative.

### **Objectives:**

- To assess whether the High Risk Firm Initiative (HRFI) produces changes in health and safety practices and final outcomes (claims rates; costs and consequences of the initiative) in Ontario firms with costs appropriate to effectiveness and benefits. Specific research questions include:
- Is there an overall reduction in firm level lost time (LT) and no-lost time (NLT) claims rates (frequency) and durations (severity) corresponding to implementation of the initiative over time?
- Do firms receiving different aspects of the intervention (inspection & enforcement, consultation & education) show differential changes in LT and NLT claims rates and durations and in organizational policies and practices for health and safety, as compared to each other and to untargeted firms?
- What are the firm level and system level costs and consequences associated with responding to different aspects of the intervention?
- How do interveners (inspectors and health & safety association staff) implement the intervention process and what practical strategies are used to enhance firm compliance or positive responses? Correspondingly, what processes of organisational change and learning occur in firms receiving different interventions?

**Methods:** A detailed evaluation protocol was developed, based on the recommendations of the June 2005 workshop. This protocol had four components: 1) plan to evaluate the system as a whole using secondary data sources; 2) primary data collection within a sample of firms, plus randomization of some firms to different components of the intervention; 3) economic evaluation of how firms react to intervention; 4) two qualitative studies - one studying firms and how they respond to the intervention and one studying the inspectors and HSA staff delivering the intervention. There were 6814 firms in the study sample, 3616 from the manufacturing sector (1463 high risk, 600 HSA targeting, 619 Priority Inspection, 934 Referent) and 3198 from the service sector (2026 high risk, 510 HSA targeting, 250 Priority Inspection, 412 Referent). From the service sector, 3005 of the 4177 firms on the last chance list were excluded from the randomization process, while 978 of the 3131 firms on the manufacturing last chance list were excluded. For each of the four study arms within each sector, we compared different firm-level measures of yearly claim activity from 2002 to 2008 inclusive, including counts of total claims registered, lost-time allowed claims, no-lost-time allowed claims, and days of disability compensated. Negative binomial models were used to compare study arms while controlling for firm size, geographic location, number of years in business and number of branches.

**Results:** Over the course of 2010, analyses have been completed to estimate the impact of the intervention on the incidence of lost-time and no lost time claims. The project team has also received funding to conduct supplementary analysis related to high risk group.

**Researchers:** Sheilah Hogg-Johnson (Principal Investigator), Donald Cole, Cam Mustard, Lynda Robson, Peter Smith, Emile Tompa, Dwayne Van Eerd, Philip Bigelow (University of Waterloo)



**Stakeholder Involvement:** MOL and WSIB continue to be involved with the project by providing data, and helping with interpretation of findings.

**Potential Audiences and Significance:** The results of this research project will have major and broad implications for policy makers interested in the prevention of work-related injuries and the communication and enforcement of workplace safety standards at a system-wide level, both within and outside of Canada. This project will, for the first time, provide policy makers with detailed information on the differential impact of both increased inspections and enforcement and increased intensive education on lost-time and no-lost-time work injuries and firm-level safety practices. Further, we will also estimate the economic costs and benefits of these different approaches to work injury prevention at both the workplace and province-wide level.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Presentation:**

Hogg-Johnson S, Robson LS, Dolinschi R, Amick B, Bigelow P, Cole DC, Mustard CA, Smith P, Tompa E. Evaluation of the Ontario High Risk Firm Initiative. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference.

**Funding:**

Hogg-Johnson S, Robson LS, Cole DC, Amick BC, Smith P, Tompa E, Mustard CA. A randomized controlled study of targeted OHS education, training and consultation in Ontario workplaces - High Risk Firms. WSIB RAC: \$59,700 (2008-2010)

Hogg-Johnson S, Amick BC, Cole DC, Mustard CA, Robson LS, Smith P, Tompa E, Van Eerd D. Firm selection algorithms-comparison over time. WSIB RAC: \$72,650 (2010-2011)

## **Organizational Policies & Practices (0277)**

**Project Status:** Ongoing

**Introduction:** This project extends the work of Renee Williams and Ben Amick in examining the measurement and distribution of organizational policies and practices for the prevention of injuries and illnesses and the management of disability in the following sectors of the Ontario labour market: education, health care, hotel and entertainment. The research will examine the relationship between seven organizational policies and practices (people-oriented culture, active safety leadership, safety training, safety diligence, ergonomics policies and practices, disability management and labour management climate) and workers' compensation based injury rate calculations to determine which, if any, predict injuries and illnesses.

**Objectives:**

- To describe the relationship between organizational policies and practices and future workers compensation claim rates.

**Methods:** The seven scales representing organizational policies and practices (OPPs) will be derived from the data collected from each of the firms in the study. Claims rates data have already been extracted and prepared for five years prior to and three years post collection of the OPPs. The relationship between these seven scales of OPPs and both past- and future- injury claims rate will be examined. The research team will examine the relationship between past injury and illness experiences as measured by claims rates over the previous five years and current operational policies and practices using multivariate linear regression. The relationship between current organizational practices and policies and future claims will be assessed using multiple Poisson regression or negative binomial regression as appropriate.

**Results:** We submitted an ethics protocol. Upon receipt of ethics the team will clean the Organizational Policies and Practices (OPP) data - link the OPP data to workers compensation data. The team will then analyze the relationship between OPPs and workers compensation data and prepare the report. Finally we will engage in stakeholder consultations and then prepare peer-reviewed papers.

**Researchers:** Ben Amick (Principal Investigator), Arold Davilmar, Sheilah Hogg-Johnson, Peter Subrata, Michael Swift, Harry Shannon and Renee Williams (McMaster University)

**Stakeholder Involvement:** HSAs: WSPS, PSHSA, WSN

**Potential Audiences and Significance:** WSIB, MOL and HSAs who are interested in trying to capture firm-level behaviour in a meaningful way and this will contribute valuable information to the on-going OHSCO initiative on safety culture.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Presentations:**

Tang K, Amick III BC, MacDermid J, Beaton DE. Validation of the 11-item Organizational Policies & Practices scale (OPPs) for injured workers recovering from work-related upper-limb disorders. 31 Aug-3 Sep 2010; Angers, France: 7<sup>th</sup> International Conference on Prevention of Work-related Musculoskeletal Disorders

Tang K, Amick III BC, MacDermid J, Beaton DE. Validation of the 11-item Organizational Policies & Practices scale (OPPs) for injured workers recovering from work-related upper-limb disorders. 27-29 May 2010; Toronto, ON: Canadian Association for Research in Work and Health

## **Understanding the Management of Injury Prevention and Return to Work in Temporary Work Agencies (1125)**

**Project Status:** New

**Introduction:** Temporary work agencies (TWAs) are a growing phenomenon and are a part of new flexible labour markets, where the labour forces of organisations can be quickly and easily increased or decreased in response to demand for their product. There are over 700,000 temporary workers in Ontario and 1,300 or more TWAs. TWAs pose special challenges for the management of labour and health and safety. While the TWA is the worker's legal employer, the three-way employment relationship between the worker, TWA, and client employer creates difficult conditions for the management of workers' job conditions, injury prevention, and return to work after injury. Also, temporary workers are, in general, at greater risk for occupational accidents and diseases than permanent workers.

### **Objectives:**

- To gain an understanding of how TWAs are organised and how they manage injury prevention and return to work in light of their non-standard organization, and to examine industry-specific policy, legislation, industry norms and practices.
- To identify practices that can help protect and restore the health of TWA workers.

**Methods:** This study will use qualitative methods which are suited to the examination of experience and process, and exploratory topics about which little is known. The method will consist of five parts: 1) analysis of legislation, case law, and policy governing Ontario temporary work agencies and their approaches to workplace health; 2) focus groups with workers employed by TWAs; 3) focus groups with employers who hire labour from temporary work agencies; 4) in-depth interviews with TWA managers who interact with workers and clients across a representative range of Ontario industries; 5) situational grounded theory and discourse analysis of focus group and interview data considered together with the legal-policy analysis. An Advisory Group consisting of WSIB, Health & Safety Associations, Ministry of Labour, and Worker and Employer representatives will guide the research.

**Results:** A coordinator was recruited and the Advisory Committee convened in January. Worker interview/focus groups began March. The Ottawa research assistant was recruited and legal analysis began. The employer interviews started and data analysis was ongoing. There were key informant interviews and the completion of focus groups. Data and legal analysis ongoing.

**Researchers:** Ellen MacEachen (Principal Investigator), Agnieszka Kosny, Liz Mansfield, Ron Saunders, Katherine Lippel (Université du Québec a Montréal (UQAM))

**Stakeholder Involvement:** Colin Appleby (Workplace Safety & Prevention Services); Michael Zacks (Office of the Employer Adviser); Nicholas Robins (Ministry of Labour); Elisabeth Mills (Workplace Safety & Prevention Services); Deena Ladd (Workers Action Centre); Kate Lamb (Ministry of Labour); Judy Geary (WSIB); Cindy Trower (Office of the Worker Adviser).

**Potential Audiences and Significance:** This study is expected to help WSIB and Ministry of Labour policy makers, case managers and inspectors to understand, conceptualize, and respond to workplace health and safety challenges in this growing and non-standard work arrangement. The study will have implications for workers, unions, employers, compensation system parties and researchers who are interested in understanding and better managing work and health in the changing labour market.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Funding:**

MacEachen E, Kosny A, Lippel K, Saunders R. Understanding the management of injury prevention and return to work in temporary work agencies. WSIB RAC: \$208,854 (Dec'09-Jun'12)

## **The Safety Case for Business: A Multi-stakeholder Examination of Best Practices and Health and Safety Outcomes (0429)**

**Project Status:** New

**Introduction:** By employing a multiple stakeholder perspective this study endeavors to provide empirical support for the safety case for business. Some literature suggests that practices that harm safety may also harm other business outcomes. Unfortunately, the comprehensive and compelling empirical research needed to reach conclusions as to the nature of the relationship between safety outcomes and economic outcomes is rare. This study simultaneously examines best practices in safety and business operations and the effects of these best practices on both economic and safety outcomes.

### **Objectives:**

- To empirically explore key relationships between safety and other organizational outcomes to address the following questions: 1) What is the relationship between health and safety outcomes and other operational outcomes i.e. costs, operating revenues etc.? 2) How do best practices in operations affect health and safety outcomes? 3) How do best practices in health and safety affect operational outcomes?

**Methods:** In Phase 1 workplace parties will be interviewed in about 10 plants/facilities in the manufacturing and transportation sectors in Ontario. The information from Phase 1 will be used to develop a questionnaire for surveying a larger number of organizations by telephone. In Phase 2, the survey will be administered by phone to over 250 plants/facilities across Ontario. In both Phases data will be collected from multiple respondents at each organization. For Phase 2, health and safety outcomes will primarily be measured with WSIB data. Statistical modeling will be undertaken to estimate the impact of health and safety on operational outcomes, and vice versa.

**Results:** The qualitative analysis of Phase 1 was completed. The analysis shows that it is possible for organizations to develop management systems that simultaneously measure, control and improve both H&S and business operations. When they do so they need not face trade-offs between being safe and being productive. These organizations form 40% of the sample and are in a variety of industries, some of which are inherently dangerous and or under significant competitive pressure.

**Researchers:** Mark Pagell (Principal Investigator, York University), Emile Tompa (Institute Coordinator), Ben Amick, Sheilah Hogg-Johnson, Sara Macdonald, Ian Moore, Lynda Robson, Anna Sarnocinska-Hart, Markus Biehl, David Johnston (York University), Robert Klassen (University of Western Ontario), Anthony Veltri (Oregon State University)

**Stakeholder Involvement:** We will have a stakeholder workshops consisting of labour representatives.

**Potential Audiences and Significance:** Workplace parties (employers, workers, unions), WSIB

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Presentations:**

An advisory committee meeting was held in October 2010 to present the result of the Phase 1 analysis.

Pagell M, Tompa E, Biehl M, Johnston D, Klassen R, Veltri A, Hogg-Johnson S, Robson LS, Amick B. Poster: The safety case for business: A multi-stakeholder examination of best practices and health and safety outcomes. May 2010; Toronto, ON: Canadian Association for Research on Work and Health.

### **Funding:**

Pagell M, Tompa E, Biehl M, Johnston D, Klassen R, Veltri A, Hogg-Johnson S, Robson LS, Amick B. The safety case for business: A multi-stakeholder examination of best practices and health and safety outcomes. WSIB-RAC: \$387,300 (2008-2011)

## **Benchmarking Leading Organizational Indicators for the Prevention and Management of Injuries and Illnesses (1160)**

**Project Status:** Ongoing

**Introduction:** The proposed research involves a cross-sectional survey of a series of organizational metrics considered important predictors of injury and illness rates and claims duration in a random sample of firms served by two Health and Safety Associations (HSAs) (WSPS), and a full enumeration of firms served by three HSAs (PSHSA, WSN). The total sample is expected to be 4,500-5,000 firms. The key organizational metrics (70 items) are: five measures of organizational policies and practices developed by Amick (2000) (people-oriented culture, active safety leadership, safety practices, ergonomic policies and practices and disability management programs and practices); one measure of safety culture developed by OHSCO (2008); eight measures for assessing the occupational health and safety (OHS) management system (safety policy, incentives for participation, training, communication, prevention planning, emergency planning, internal controls and benchmarking) developed by Fernandez-Muniz (2007); and one measure of employee relations/joint health and safety committee functioning developed by Shannon (1996) and Amick (2000). The firm-level survey data will be linked to five years of retrospective injury and illness claims data and one year of prospective injury and illness claims to determine which organizational metrics are related to injury and illness claims. We will use this information to describe what the most reliable and valid leading indicators are for use in benchmarking organizational and management behaviour in Ontario firms.

### **Objectives:**

- The long-term objective of this research is to build a scientifically grounded evidence base for benchmarking leading indicators of firm organizational and management behaviour in OHS that is relevant to all sectors and all firms. In so doing, this will support the Ontario WSIB Road to Zero initiative, as well as prevention efforts in other jurisdictions. To do this we propose three specific objectives:
- To identify a reliable and valid set of firm level measures of organizational and management metrics relevant to OHS and usable by the OHS community.
- To examine the relationships between WSIB claim rates and organizational and management metrics.
- To demonstrate a scientifically-grounded procedure for collecting valid firm-level estimates of organizational metrics, aggregating the data and disseminating benchmarking information to all key stakeholders.

### **Methods:**

We anticipate that organizational policies and practices, safety culture, and OHS management systems may vary depending on the sector of the firm, its geographical location, and its size. Therefore, to obtain more precise estimates of population quantities (Lohr 1999), and to obtain reasonably precise estimates within subgroups, we will use a stratified sampling strategy with strata defined by a combination of sector/HSA affiliation, firm size (< 20 versus 20+ FTE), and geographic region (defined by first digit of Ontario postal code: K,L,M,N, P). We will strive to have representative samples of firms within each of these  $5 \times 2 \times 5 = 50$  strata.

Overall, we determined that 4,500-5,000 firms would be adequate to meet our sample size needs. If all strata were sufficiently large, we could try to sample 100 firms per strata to obtain 5,000 firms overall. However, the strata within the Municipal, Pulp & Paper, and Electrical & Utilities sectors are much smaller than those within the Service and Manufacturing sectors – and indeed, usually don't have 100 firms.

We propose targeting all firms in all 30 strata of the Municipal, Pulp & Paper, and Electrical & Utilities sectors, and 200 firms within each of the strata within the Service and Manufacturing sectors. Therefore we will be targeting 5,457 firms overall, allowing for some (between 500 and 1,000) to refuse participation or to have closed prior to the survey, while still maintaining our targeted sample size of 4,500 overall. We will strive for as little non-response as possible to ensure a representative sample within each stratum.

Since the sampling scheme uses different sampling probabilities depending on which stratum a firm is in, sampling weights will be used for some of the analyses we propose. The weights will be constructed to

represent the inverse of the probability of being sampled (Lohr 1999), and can be used when we wish to make inferences that apply to the population as a whole (e.g., when we wish to make statements about organizational policies and practices, safety culture, and OHS management systems in the province of Ontario, or when we are trying to understand the relationship between organizational policies and practices, safety culture, and OHS management systems and claims rate). Analyses focusing on the measurement properties of our survey instruments will not use sampling weights since we are more interested in how the survey items relate to one another. Sampling weights assume we have achieved 100% response within each stratum. The actual weights used will be adjusted to reflect the actual numbers recruited in each sample.

We also recognize that firms will not agree to participate or not participate randomly (e.g., we expect smaller firms or firms with significant on-going injury and illness problems to be less likely to participate). Therefore we will develop some post-sampling stratification weights as a result of answering Research Question 6.

Our overall goal in the development of this sampling strategy is two-fold: 1) to ensure that we have enough power to analyze research questions 3-5; and, 2) to develop a model (scientifically credible) strategy that can be used as Ontario Prevention Partners goes forward with benchmarking initiatives.

In our nested studies, we plan to seek 60 participating firms for the test-retest and to determine who the best informant is. Firms will be selected to maximize the generalizability of the findings (e.g., having small and large firms). Sample size calculation indicates that 60 is the desired number.

**Results:** Initial consultation meetings with HSA partners and IHSA partner to discuss overall project, firm sampling, recruitment of firms, and materials for consultants and firms. Developed web-based questionnaire and tested web-based recruitment tracking database. Conducted recruitment training to HSA partners (MHSA & WSN). Created mail-out survey, finalized web-based recruitment tracking database and on-line questionnaire

**Researchers:** Ben Amick (Principal Investigator), Sheilah Hogg-Johnson, Cameron Mustard, Lynda Robson, Colette Severin, Peter Smith, Ivan Steenstra, Emile Tompa, L. Tetric (George Mason University)

**Stakeholder Involvement:** WSPS, PSHSA, WSN.

**Potential Audiences and Significance:** WSIB and HSAs (WSPS, PSHSA, WSN).

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Funding:**

Amick III BC, Hogg-Johnson S, Mustard CA, Smith P, Tompa E, Robson LS, Steenstra I. Benchmarking leading organizational indicators for the prevention and management of injuries and illnesses. WSIB RAC: \$363,072. (2010-2012)

## **Regulation and Incentives**

In the thematic area of regulation and incentives, Institute scientists will continue their work evaluating the Ontario prevention system. Specifically, work initiated in 2010 looked performing an economic evaluation of the resource needs for the health care sector in British Columbia. We continue to examine the impact of experience rating on the incidence of workers' compensation claims.

## Causes and Nature of Injuries Reported as No-lost Time Claims in Ontario, 1991-2005 (0419)

**Project Status:** Completed

**Introduction:** Between 1991 and 2005 the number of claims submitted to Ontario's Workplace Safety and Insurance Board (WSIB) for work related injuries requiring time off work (lost-time claims) decreased by approximately 42%. However, over the same time period work-related injuries that required health care, but not time off work (no-lost-time claims) only declined by 4%. As a result, there are currently over twice the amount of no-lost-time claims (NLTCs) reported to the WSIB, than lost-time claims (LTCs); with the health care spent on NLTCs by the WSIB in the year 2000 in excess of \$20 million. Unfortunately, no information on the types of injuries reported as NLTCs is routinely stored and/or reported by the WSIB. Therefore, little is known about why these claims have not decreased or how they might be prevented. The goal of this project is to extract detailed information from the injury reports submitted with NLTCs over four time periods between 1991 and 2005. We will also examine the overall trends in the rates and health care costs of NLTCs between 1991 and 2005 across different labour force subgroups. The results of this study will provide stakeholders in workplace safety with valuable information on how NLTCs might be prevented.

### Objectives:

- To examine trends in rates of NLTCs, and the ratio of NLTCs to LTCs between different labour force sub-groups (e.g., gender, industry or age groups).
- To examine the health care expenditures associated with no-lost-time claims over time; and to examine if these trends in health care expenditures have been consistent across different labour force subgroups.
- To examine the types of injuries that are reported as no-lost-time claims to the WSIB, and examine if these injury types have changed over time.
- To report if certain types of no-lost-time claims increased over time (e.g., have certain types of injuries been less affected, or not affected at all, by previous and current prevention initiatives in Ontario)
- To examine if there are differences in the nature of injuries reported as no-lost-time claims from firms who get premium rebates, firms who pay premiums surcharges and firms who do not pay premiums (i.e., Schedule 2 employers)

**Methods:** This project used a mixture of descriptive and multivariate regression analyses to examine the trends in NLTCs. Initial descriptive analyses examined differences in the trends in NLTCs, and the health care expenditures associated with NLTCs, across different industry, gender and age sub-groups. These analyses were extended to examine differences in the reporting of NLTCs relative to LTCs across firms with better than average safety performance, as assessed by the WSIB's experience rating program, compared to firms with worse than average safety performance; and to firms covered under Schedule 2. A final series of analyses used detailed information extracted from a random selection of 9,228 NLTCs, from four different periods between 1991 and 2005.

**Results:** This project has been completed with the final report sent to the Workplace Safety and Insurance Board. The first paper found that the factors associated with no-lost-time claims and lost-time claims differed, with differences in associations found between models examining no-lost-time claims and lost-time claims present among all independent variables used. Noteworthy differences were those observed among industry groups. In our fully adjusted models, relative to the reference industry of retail trade, mining and utilities and the construction industry were associated with an increased probability of reporting no-lost-time claims, but a decreased probability of reporting lost-time claims. Differences in probability estimates for lost-time and no-lost-time claims were also observed across gender and age groups.

Focusing on health care expenditures for no-lost-time claims between 1991 and 2006, the second paper reported a decline in health care expenditures between 1991 and 1997, followed by an increase in health care expenditures between 1998 and 2006. These trends were generally similar across demographic and industrial subgroups. In addition this study found that the probability of receiving subsequent health care also increased over time, as did the probability of receiving health care between 31 and 180 days after the injury.



The results of the third paper suggest that there have been surprisingly limited changes in the types of injuries (using event and nature of injury) that are submitted as no-lost-time claims across the years 1991, 1996, 2000 and 2006. While systemic diseases and trauma to muscles, tendons and ligaments caused through repetitive events increased across survey years, the largest percentage of no-lost-time claims remained traumatic injuries to muscles, tendons and ligaments, or surface wounds or open wounds, caused through contact with equipment or body reaction and overexertion.

The results of the final paper showed no significant effects of daylight savings time (DST) on the incidence of work injury claims (no-lost-time and lost-time); either for the loss of one hour sleep in the spring transition, or the gain of one hour sleep in the fall transition period. We also found no differential effects of DST on work injury claims across industry, age, gender and job tenure groups.

**Researchers:** Peter Smith (Principal Investigator), Cynthia Chen, Sheilah Hogg-Johnson, Cameron Mustard, Michael Swift, Marjan Vidmar, Linda Kacur (WSIB)

**Stakeholder Involvement:** WSIB, HSAs

**Potential Audiences and Significance:** This research project will provide a comprehensive overview of the type of work-related injuries that result in no-lost-time claims in Ontario, and trends in these claims over the last 15 years. This overview will be of interest to numerous policy portfolios, both at the provincial and federal levels, various provincial health and safety partners such as Health and Safety Associations (HSA's), as well as management and workplace groups. Given the limited information currently available on claims that do not require time off work, these results will also be of interest to other Workers Compensation Boards across Canada.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Publications:**

Morassaei S, Smith P. Switching to daylight saving time and work injuries in Ontario, Canada: 1993-2007. *Occupational and Environmental Medicine* 2010; 67(12):878-880.

Smith PM, Chen C, Hogg-Johnson S, Mustard CA, Tompa E. Trends in the health care associated with no-lost-time claims in Ontario: 1991 to 2006. Forthcoming: *Injury Prevention*

Smith P, Hogg-Johnson S, Mustard CA, Chen C and Tompa E. Comparing the factors associated with lost-time versus no-lost-time claims in Ontario between 1991 and 2006. Submitted: *American Journal of Industrial Medicine*.

Smith P, Mustard CA, Hogg-Johnson SA. Examining changes in injuries submitted as no-lost-time claims in Ontario between 1991 and 2005. Final Report to the WSIB RAC (#07016). Project 419

**Presentation:**

Smith P, Mustard C, Hogg-Johnson S, Chen C, Tompa E, Kacur L Examining trends in no-lost-time claims (NLTCs) in Ontario: 1991 to 2006. 12 Oct 2010; Toronto, ON: IWH Open Plenary; 30 Nov 2010; Toronto, ON: WSIB; 13 Dec 2010; Toronto, ON: Injured Workers Consultants

**Funding:**

Smith PM, Mustard CA, Hogg-Johnson S. Examining changes in injuries submitted as no-lost-time claims in Ontario between 1991 and 2005. WSIB-RAC: \$204,650. (Feb 2008- Jan 2010)

## **A Comparative Analysis of the Occupational Health and Safety Incentives of Workers Compensation Premium Setting in Ontario & British Columbia (1130)**

**Project Status:** New

**Introduction:** Tying workers' compensation premiums of firms to their claims burden to varying degrees (known as experience rating) is a principal policy lever that insurance providers use to encourage firm-level investment in health and safety. The mechanics of how premiums are experience rated can vary quite dramatically from jurisdiction to jurisdiction, though few studies have investigated the effects of experience rating with direct measures of program features, and even fewer have undertaken comparative analysis of different approaches to experience rating. To respond to these research gaps, we plan to undertake a comparative analysis of workers' compensation premium setting in British Columbia and Ontario using micro-data at the firm level (from 2000-2008) to investigate the impact of various features of the two programs.

### **Objectives:**

- To assess the incentive effects of prospective (British Columbia) versus retrospective (Ontario) experience rating programs.
- To assess the incentive effects of other features of the programs such as the degree of experience rating (using direct measures such as the rating factor), the maximum per claim and per firm costs considered in the program, the weight given claims costs from previous years, and the graduated participation aspect of the BC program.

**Methods:** We will use regression modeling techniques to identify the effects of experience rating features and other contextual factors on measures of safety performance. Since the outcome measures will be rates or counts of claims by type, we will consider the Poisson and the negative binomial regression models. Another modeling approach we will consider is multi-level modeling, because some categories of firm characteristics such as size or industry may have less variability within than across categories. Time period, jurisdiction, industry, and firm-level contextual factors that bear on outcomes will be controlled for in the analyses. We plan to use a range of outcome measures at the firm level based on claims data that provide insight into safety and claims management activities. To overcome the fact that claims are not synonymous with injuries, we will use categories of claims that are less likely to be affected by reporting bias such as permanent impairments, acute trauma injuries and fatalities and compare them to those more likely to be affected.

**Results:** There are no results to date. We received the data in 2010 and have completed cleaning of the data. Some preliminary models have been tested and regression modeling analysis is ongoing.

**Researchers:** Emile Tompa (Principal Investigator), Cameron Mustard, Christopher McLeod (University of British Columbia), Enqing Shen

**Stakeholder Involvement:** Senior policy makers at WorkSafeBC to serve on an advisory committee.

**Potential Audiences and Significance:** The findings of this study will provide information on the type, magnitude and consequences of behavioural incentives created by features of experience rating programs. WorkSafeBC and workplace parties in BC will be particularly interested in the study findings. The findings will also be of interest to policymakers at the WSIB and at workers' compensation boards across Canada and the US. Researchers investigating work and health issues, and particularly system level incentives for health and safety, are another target audience of this research.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Funding:**

Tompa E, Mustard C, McLeod C, Moore I. A comparative analysis of the occupational health and safety incentives of workers' compensation premium setting in British Columbia and Ontario. WorkSafeBC: \$201,342 (2009-2011)

## **The Impact of Experience Rating and Occupational Health and Safety on Claims Experiences in Ontario (0416)**

**Project Status:** Ongoing

**Introduction:** Experience rating of workers' compensation insurance premiums is a common practice in North America. It is meant to create incentives for firms to invest in safety by varying their premiums based on their claims activity. Though experience rating is a principal policy lever of workers' compensation insurance providers, few studies have investigated its effects with direct measures of program features. The principal experience rating program in Ontario is called the New Experimental Experience Rating (NEER) program.

### **Objectives:**

- To investigate the impact of various features of the NEER program on safety and claims management.
- To assess the incentive effects of the degree of experience rating.
- To assess the incentive effects of the retrospective aspect of the program.
- To assess the impact of programmatic changes introduced in 2004 and 2006.

**Methods:** Regression modelling techniques based on micro data at the firm level to be undertaken using panel data methods.

**Results:** Analysis of Phase 2 of the study-- impact of policy changes and assessment of claims management was completed. Manuscripts have been prepared on the impact of policy changes and claims management issue.

**Researchers:** Emile Tompa (Principal Investigator), Ben Amick, Miao Fang, Sheilah Hogg-Johnson, Lynda Robson, Enqing Shen, Ian Moore

**Stakeholder Involvement:** Paul Casey, Terrence D'souza, Roger Cecchetto, Nella Orsini, Richard Burton (WSIB).

**Potential Audiences and Significance:** This project is relevant to the WSIB and workers' compensation boards in other jurisdictions. It is also of interest to employers and injured worker representatives, since both groups have strong beliefs about the merits of experience rating.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Publication:**

Tompa E, Fang M. The impact of experience rating and firm size dynamics on occupational health and safety performance. Revise and resubmit: Relations Industrielles/Industrial Relations.

### **Presentation:**

Tompa E, Moore I, Fang M, Hogg-Johnson S, Amick BC, Robson LS. Analysis of the impact on claim rates of CAD-7 and NEER experience rating programs: WSIB Advisory Panel Presentation, March 2, 2010.

### **Funding:**

Tompa E, Amick BC, Hogg-Johnson S, Robson LS. The behavioural incentives of experience rating: An investigation into the health and safety consequences of the new experimental experience rating program in Ontario. WSIB RAC: \$122,016 (2009-2010)

Tompa E, Mustard CA, Amick BC, Clune L, Dewa C. OHS economic evaluation resource needs for the health care sector in Ontario. WSIB RAC: \$29,960 (2010-2011)

## **Accounting for all the Benefits: How Should We Judge the Worth of Occupational Health and Safety Programs in the Healthcare Sector (1135)**

**Project Status:** Ongoing

**Introduction:** In this project we plan to work with employers and unions to develop a jointly supported framework (a set of detailed tools and methods) to conduct comprehensive rigorous economic evaluations of occupational health and safety (OHS) programs in the healthcare sector.

### **Objectives:**

- To identify the relevant costs and consequences that should be included in a comprehensive economic evaluation of an OHS intervention in the healthcare sector.
- To determine how these costs and consequences be measured and integrated in the economic evaluation, given data availability and stakeholder preferences.
- To apply the economic evaluation framework to ceiling lift intervention to assess the feasibility of the framework.

**Methods:** The primary methodology is participatory action research supported by mixed qualitative and quantitative methods. Research questions will be answered in collaboration with an 18-member working group and answers to the initial questions will inform subsequent questions. 12 to 24 key-informant interviews with decision-makers will be conducted to assess what costs and consequences they typically consider, the types of economic evaluations they are familiar with, and their preferred ways of expressing the results. A 60-member 3-round email-based Delphi panel will be performed to prioritize costs and consequences that should be included for each stakeholder group, and preferred ways of measuring them. The working group will use nominal group techniques to reach final agreement on the costs and consequences that should be included and on how they should be measured. The resultant framework will be applied and refined through its use in the case of ceiling lift programs in BC.

**Results:** An economic evaluation lay document, environmental scan, and in-depth interviews were completed. A Delphi panel was held to prioritize costs and consequences. A draft framework monograph was prepared and first and second partner retreats held to finalize the monograph and templates within the framework. Guidelines for using the framework have been drafted. Meetings were held to plan the pilot testing of the framework.

**Researchers:** Jaime Guzmán (Principal Investigator) (University of British Columbia), Sara Macdonald, Emile Tompa, Hasanat Alamgir, Mieke Koehoorn (University of British Columbia)

**Stakeholder Involvement:** Stakeholders include key decision makers from WorkSafeBC, Health Authorities, Union Representatives, Ministry of Labour, and Ministry of Health Services, as well as worker and patient representatives.

**Potential Audiences and Significance:** OHS directors of health authorities and four major healthcare unions in BC are part of the working group. They can work to develop and endorse the framework that best serves their constituents and best accounts for all the benefits of such initiatives for the healthcare workers they represent. WorkSafeBC and the Ministry of Health Services will be better informed in identifying effectiveness, and in allocating resources.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

### **Publications:**

An economic evaluation lay document and a draft Framework report have been completed.

### **Funding:**

Guzmán J, Keen D, Alamgir H, Tompa E. Accounting for all the benefits: How should we judge the worth of occupational health and safety programs in the health care sector? WorkSafeBC: \$222,976 (2009-2011)

## **Breakthrough Change in Workplace OHS Performance (1145)**

**Project Status:** Ongoing

**Introduction:** This project will address the need of workplaces and their stakeholders to understand better the degree to which large change in a workplace's rate of injury and illness (breakthrough change) is possible and what factors are critical to making such change (e.g., new technology, senior management commitment, an OHS management system, or worker participation). New research on breakthrough change is needed because there is little research to date that focuses on such change, although there are reports in the lay literature.

**Objectives:**

- To determine the incidence of breakthrough change (BTC) in Ontario firms.
- To determine the critical success factors involved in BTC changes within individual firms.
- To determine the critical success factors common across BTC firms.

**Methods:** Quantitative analysis of the WSIB claims database, coupled with telephone interviews of a random sample of firms that appear from claims statistics to have experienced BTC, in order to define BTC and describe its incidence in Ontario firms. Secondly, a multiple case study technique will be used to identify success factors critical to BTC in individual firms and across firms.

**Results:** None to date. Data collection will be completed in Q1 2011. Analysis and report will be completed in Q2 2011.

**Researchers:** Lynda Robson (Principal Investigator), Ben Amick, Sheilah Hogg-Johnson, Liz Mansfield

**Stakeholder Involvement:** Project partners are: MOL, IHSA, WSN, WSPS, WHSC, BCOHS. They will advise the team on research protocols, may assist in the recruitment of firms to be case studies, will assist in the interpretation of results, and will be involved in developing and disseminating research products.

**Potential Audiences and Significance:** Research products are the following: description by sector of the incidence of BTC, well documented stories of BTC, and a preliminary list of critical success factors for BTC. Partners may choose to disseminate product documents to their membership; e.g., HSA news magazine.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Preventions of Injury & Illness

**Funding:**

Robson LS, Amick BC, Hogg-Johnson S, Mansfield L, Pagell M, Shannon HS. Breakthrough change in workplace OHS performance. WSIB BTG: \$57,668 (Nov'09-Dec'11)

## **Evidence Guides and Tools**

Stakeholders are always interested in seeing research information developed into highly practical and applied tools. Some primary prevention projects at IWH lead to this type of product, such as the “Smart Planner” and the PE guide. Others focus more on the validation of existing tools. Included also in this section are projects assessing the measurement properties (e.g., reliability and validity) of an existing tool, and developing a prevention system monitoring report.

## **Economic Evaluation Software for Workplace Parties (1180)**

**Project Status:** Ongoing

**Introduction:** After completing a systematic literature review of workplace occupational health and safety (OHS) interventions with economic evaluations, we have become aware of how underdeveloped the methods are in this literature. Though we found a fair number of intervention studies with economic evaluations undertaken in a variety of sectors, many were of low quality. The greatest number of studies was undertaken in the healthcare sector, yet we were unable to make a strong statement about the evidence on the economic merits interventions in that sector due to the quality of studies. We also found that most intervention studies do not undertake an economic evaluation. Consequently, workplace parties are often not provided evidence on the resource implications of work-related injuries and illnesses or the returns from undertaking health and safety initiatives to prevent them. To fill the gap, we plan to develop sector-specific economic evaluation workbooks for workplace parties, starting with the healthcare sector, in order to provide them with high level summaries of the existing evidence, assist them in being informed consumers of economic evaluation research, and provide them with guidance on how they might themselves apply the methods in their workplaces.

### **Objectives:**

- To develop industry-specific economic evaluation workbooks to serve the information needs of workplace parties and systems partners on the resource implications of OHS interventions.

**Methods:** To develop the workbook software, we will draw on existing tools developed by others, and research undertaken on the economic evaluation of health and safety interventions. We will also draw on research we have undertaken, which includes a systematic review of workplace interventions with economic evaluations, a methods text for occupational health and safety researchers, and several economic evaluations of workplace interventions. The one-year time period of the grant will be used to develop the software and field test it with the assistance of the partners participating in the grant.

**Results:** Field testing in Ontario and BC was completed in Q1 2010. Report back to WSIB-RAC and WorkSafeBC Research Secretariat completed in early 2010. Since release of the Ontario software in the spring of 2010, there have been more than 500 downloads. We have also had numerous requests for presentations of the software at workshops. Currently we are planning the development of a training workshop on economic evaluation and are exploring tools development for the health care sector.

**Researchers:** Emile Tompa (Principal Investigator), Ben Amick, Roman Dolinschi, Anita Dubey, Emma Irvin, Kiera Keown, Dylan Maccarone, Sara Macdonald, Cindy Moser, Hasanat Alamgir, Chris McLeod (University of British Columbia), Bruce Minor (Lakehead University)

**Stakeholder Involvement:** The workbook was prepared in conjunction with system partners from Workplace Safety & Prevention Services (WSPS) in Ontario, and with senior administrators from regional health authorities in British Columbia.

**Potential Audiences and Significance:** Workplace parties (employers, workers, unions), researchers undertaking interventions studies, WCBs, Ministries of Labour.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Preventions of Injury & Illness

### **Publication:**

The Ontario Economic Evaluation Software was released in the spring of 2010.

### **Presentations:**

Keown K, Macdonald S, Tompa E, Maccarone D, Dubey A, Irvin E, Amick BC. The health & safety smart planner: Introducing cost-benefit analysis software. 10-12 Feb 2010; Markham, ON: The Canadian National Ergonomics Conference

Keown K, Tompa E, Macdonald S, Gibson J, Maccarone D, Dubey A, Irvin E, Amick BC. The Health & Safety Smart Planner software – A cost benefit analysis workshop for OH&S. 29 Oct 2010; Burlington, ON: CBI Health Network Breakfast Networking Meeting

Keown K, Tompa E, Macdonald S, Gibson J, Maccarone D, Dubey A, Irvin E, Amick BC. The Health & Safety Smart Planner software – A cost benefit analysis workshop for OH&S. 2 Nov 2010; Thunder Bay, ON: Forum North Meeting

Tompa E, Keown K, Macdonald S, Maccarone D, Dubey A, Irvin E, Amick BC. Health & Safety Smart Planner: Introducing cost-benefit analysis software. 24 Mar 2010; Toronto, ON: Consultants Business Meeting. Health & Safety Association for Government Services.

Tompa E, Keown K, Macdonald S. Health & Safety Smart Planner: Introducing a cost benefit analysis software. Mar 2010; Mississauga, ON: Centre for Health & Safety Innovation Research Exchange Series.

Tompa E, Keown K. Health & Safety Smart Planner: Introducing a cost benefit analysis software. Mar 2010; Toronto, ON: Monthly meeting of the Ontario Safety Association for Community and Healthcare.

Tompa E, Keown K, Macdonald S. Health & Safety Smart Planner: Introducing a cost benefit analysis software. Mar 2010; Mississauga, ON: Centre for Health & Safety Innovation Research Exchange Series.

Macdonald S, Tompa E, Keown K, Maccarone D, Dubey A, Irvin E, Amick BC. Economic evaluation for health & safety using the Health and Safety Smart Planner. 24 Mar 2010; Toronto, ON: Topics in Health and Safety course workshop, Ryerson University

Tompa E, Macdonald S, Keown K, Maccarone D, Dubey A, Irvin E, Amick BC. Health & Safety Economic Evaluation Workshop. Introduction of the Health & Safety Smart Planner: A cost-benefit tool. 4 Jun 2010; Toronto, ON: GTA Environmental, Health and Safety Network Meeting

Tompa E, Macdonald S, Keown K, Maccarone D, Dubey A, Irvin E, Amick BC. H&S Economic Evaluation Workshop. Introduction of the Health & Safety Smart Planner: A cost-benefit tool. 14 Sept 2010; Mississauga, ON: Food and Beverage Group Meeting, Workplace Safety & Prevention Services, CHSI.

Tompa E, Macdonald S, Keown K, Maccarone D, Dubey A, Irvin E, Amick BC. The Health & Safety Smart Planner software: A cost benefit analysis Workshop for OHS. 29 Sep 2010; Mississauga, ON: Peel Workplace Health Network Meeting, Golder & Associates.

Tompa E, Macdonald S, Maccarone D, Keown K, Dubey A, Irvin E, Amick BC.. The Health & Safety Smart Planner Software – A cost benefit analysis tool for OH&S. 25 Nov 2010; Toronto, ON: Tripartite Singapore Delegation.

#### **Funding:**

Tompa E, Amick BC, Keown K, Dubey A, Irvin E. Economic evaluation software for Manitoba workplaces. Manitoba Workers Compensation Board: \$69,453 (2009-2010)



## **Development and Evaluation of MSD Pictograms for the Ontario Prevention System (1110)**

**Project Status:** Ongoing

**Introduction:** This project will address the needs of the English as a Second Language (ESL) population in Ontario's service sector. The initial focus of the project will be MSD's, which account for 30% of long-term claims, 53% of lost time days and 49% of benefit costs in Ontario's service sector. The pictogram approach has been proven to be a successful way to share important messages across various barriers, including cultural, language, age and education. Workplace Safety & Prevention Services (WSPS) members need support in effectively communicating ergonomic hazards in their workplaces. This project will continue to support WSPS's alignment with other system partners and initiatives. (Specifically, extending the reach of the MSD Guidelines and Tool Kit).

**Objectives:**

- To increase the accessibility of the MSD Guideline and Tool Kit to small businesses.
- To provide tools that would be suitable for vulnerable workers (youth, aging, immigrant, ESL).
- To provide health and safety in a manner that is simplified and easily understood.
- To ensure an evaluation component is developed.
- To transfer knowledge into the health and safety system.

**Methods:** In each phase of the project literature scans will be conducted to identify best practices in, for example, tailoring training to or developing measurement tools for low literacy and English as a second language workers. Our goal in the scan is to inform the work and the stakeholder dialog. Intervention development will use focus groups for pictogram and training development. The development of the measurement tools including the self-efficacy measure will be supported by one-on-one interviews and if possible focus groups. Finally, the observational tool and training will be developed internally and pilot tested to examine inter-rater reliability.

**Results:** Commenced recruiting sites for implementation. Initiated implementation and data collection. Continued with recruitment of sites and implementation and data collection.

**Researchers:** Ben Amick, Curtis Breslin (Principal Investigators), Emma Irvin, Kiera Keown, Trevor King

**Stakeholder Involvement:** Kim Grant, Sandra Miller (WSPS), Anne Duffy (MOL), WSIB

**Potential Audiences and Significance:** WSPS, WSIB, MOL, Prevention partners,

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness

**Funding:**

Amick BC. Training and evaluation of pictograms. Ontario Service Safety Alliance. \$10,000. (2009-2010)

Amick III BC, Grant K, Breslin FC, Van Eerd D, Steenstra I, Keown K, Robson L, Robertson M. Developing an intervention to reduce occupational health and safety risk among vulnerable workers: Pictograms and training for low-literacy hotel/motel workers. WSIB RAC: \$29,760 (2010-2011)

## **KTE Focus on Prevention of Work-Related Injury and Illness**

**Introduction:** KTE have taken a lead role in facilitating stakeholder engagement in the Prevention Reviews program, preparing summaries and developing strategies to disseminate and discuss their results.

KTE has continued to sustain relationships with workplace parties (employers, organized labour, health and safety associations (HSAs), ergonomists and kinesiologists) to ensure their early participation in formulating primary prevention research, and to ensure we have well established communication channels for disseminating findings. Creating stronger employer relationships will be a focus for IWH and the Centres of Research Expertise via the KTE Hub.

**Audience:** Workplace parties, prevention partners WSIB, MOL, and HSAs (Public Services Health & Safety Association, Infrastructure Health & Safety Association, Workplace Safety & Prevention Services), OHCOW

**Focus and messages:** Evidence-based messages on the prevention of workplace injury with emphasis on MSDs.

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## **Prevention and Management of Work Disability**

The WSIB has a stated vision in The *“Road to Zero”* of eliminating all workplace fatalities, injuries and illnesses with the aim of reducing the lost time injury rate and the number of traumatic fatalities by 35% from 2007 levels. There is however ongoing recognition of the importance of evidence based strategies to manage and prevent further disability when injury and illness do occur. As the second of five fundamentals in the WSIB Strategic Plan 2008-2012, return to work is a critical focus and the Institute is well aware of the WSIB’s considerable interest in evidence on the quality and effectiveness of interventions to support safe sustainable return to work. Addressing the challenge of optimal return to work outcomes which support the functional recovery of injured workers and minimize workplace and societal costs requires coordination between workplace parties, the compensation insurer and healthcare system institutions and providers.

The Institute has been committed to the study of return to work issues for over a dozen years. Its research portfolio in this area includes systematic reviews, observational studies based on primary data collection, and observational studies using administrative or secondary data. This portfolio of work has led to the development of tools for practical application in workplace parties and the compensation system.

In 2010, our portfolio of research included the continued examination for the risk factors for chronicity and understanding the phenomenon of claims persistency as well as the examination of several interventions designed to improve the process and sustainability in return to work. As part of our focus in disability management and prevention our research in the measurement of health and function continued to engage the clinical staff of the WSIB specialty clinics.

### 2010 Quick Statistics

Completed projects (1)  
Ongoing projects (22)  
New Projects (0)  
Papers published or in press (26)  
Peer review papers submitted (4)  
Presentations of results and stakeholder consultations (44)  
External grants awarded (17)

## **Measuring Health and Function**

Over the past 17 years the Institute has focused on several aspects of research relevant to clinical care: the measurement of health and function includes understanding the course of disability and recovery; and the development of a clinical evidence base on the effectiveness of clinical interventions. These measurement tools and evidence on the clinically effective interventions for work related disability should assist the WSIB in their goal of increasing their capacity to measure other return to work and health care outcomes to improve the effectiveness of their business management.

Through 2010 researchers undertook a longitudinal cohort of injured workers who are attending the WSIB specialty clinic in Toronto and in London with the goal to understanding the usual course of persons attending the specialty clinic and to identify modifiable and non-modifiable factors that could predict likely course of injured workers.

## Measurement Methodology Studies (0925)

**Project Status:** Ongoing

**Introduction:** This is a group of studies with primary focus on measurement issues and the development of measurement instruments. The data for much of this work comes from projects initiated for other research objectives within this theme and are described subsequently in greater detail.

### Objectives:

- To advance our understanding of the measurement of longitudinal data collection (change versus trajectories).
- To advance our understanding of transitions in health (pain becoming a problem and recovery)  
Note: Overlaps with project 115, its measurement and its interpretation, Minimal Clinically Important Difference (MCID), comparisons, Jacobson approach).
- To disseminate our findings through peer-review publications, presentations, and Continuing Medical Education activities.

**Methods:** This project involves multiple methods aimed at advancing the science of measurement. This involves development and testing of instruments, and efforts to improve the interpretability of their scores (analytic approaches, Rasch/IRT, MCID and benchmarking). Our work has resulted in several methodological papers, theoretical frameworks, and tools to help clinicians or stakeholders to make the best use of instruments.

**Results:** Continue to work on instrument database and pain as a problem work. Maintain involvement in measurement course and run workshop. Submit paper on fear avoidance test including option for other measures of this attribute. Publish instrument database and work on developing website to support its use.

**Researchers:** Dorcas Beaton (Institute Coordinator), Claire Bombardier, Cynthia Chen, Sheilah Hogg-Johnson, Carol Kennedy-Yee, Peter Smith, Peter Subrata, Gabrielle van der Velde, Dwayne Van Eerd, Pierre Côté (University Health Network), Jeffrey Katz (Brigham and Women's Hospital, Harvard University), Sherra Solway (Toronto Rehabilitation Institute), Jeff Wright (Hospital for Sick Children)

**Stakeholder Involvement:** Users of the instrument database, clinicians, researchers, trainees, students.

**Potential Audiences and Significance:** Primarily directed at researchers at the Institute, the research community at large, and the clinical community who apply these instruments.

**Links to WSIB Policy & Program Priorities:** Health Services: Effectiveness & Efficiency of Clinical Care

### Publications:

Beaton DE, Cullen K, Hogg-Johnson S, Kennedy CA, Smith P, Van Eerd D, van der Velde G. Interpretability of serial changes of health status: A direct comparison of three approaches suggests final state or combined change and final state are most accurate. Submitted: *Journal of Clinical Epidemiology*.

Beaton DE, Van Eerd D, Smith P, van der Velde G, Cullen K, Kennedy CA, Hogg-Johnson S. Minimal change is sensitive, less specific to recovery: a diagnostic testing approach to interpretability. *Journal of Clinical Epidemiology* 2010; [Epub ahead of print].doi: 10.1016/j.jclinepi.2010.07.012 (Project 925: Measurement Methodology).

Beaton DE, Tang K, Gignac MAM, Lacaillle D, Badley EM, Anis AH, et al. Reliability, validity, and responsiveness of five at-work productivity measures in patients with rheumatoid arthritis or osteoarthritis. *Arthritis Care Res (Hoboken)* 2010;62(1):28-37.

Turner D, Schunemann HJ, Griffiths LE, Beaton DE, Griffiths AM, Critch JN, et al. The minimal detectable change cannot reliably replace the minimal important difference. *J Clin Epidemiol* 2010 Jan;63(1):28-36.

## **Managing the Tail of the Curve: Work-related Outcomes of Injured Workers Attending WSIB Specialty Clinics for Upper Limb Disorders (0113)**

**Project Status:** Ongoing

**Introduction:** It is known that the majority of disability and costs associated with lost time claims comes from those workers with the longest duration of lost time, the proverbial "tail of the curve". One access point to injured workers in the "tail" is through the WSIB specialty clinics that usually see workers only after about six months post injury. In this study we will be examining the usual course of work-related outcomes (absenteeism and at-work productivity losses) in workers recruited from two upper extremity specialty clinics. We will also examine the predictors of this course, and potentially identify those which are amenable to intervention/modification. This is a longitudinal cohort of injured workers who are attending the WSIB specialty clinic in Toronto and in London.

### **Objectives:**

- To understand the usual course of persons attending the specialty clinic;
- To identify modifiable and non-modifiable factors that could predict likely course;
- To join two specialty clinics (OAI and London) to coordinate and collaborate on this type of data collection and analysis with the view of establishing a network of research across specialty clinics in Ontario.

**Results:** Members of the Measurement Group and external researchers were open to the opportunity to conduct their own analyses and lead their own related projects. Manuscript writing and submission is in progress.

**Researchers:** Dorcas Beaton (Principal Investigator), Claire Bombardier, Kim Cullen, Sheilah Hogg-Johnson, Ivan Steenstra, Pierre Côté (University Health Network), Renée-Louise Franche (Vancouver General Hospital), Joy MacDermid (McMaster University), Sonia Pagura and Robin Richards (Sunnybrook & Women's Health Sciences Centre)

**Stakeholder Involvement:** WSIB specialty clinics are integrally involved in the project. We are also in regular contact with the staff at the WSIB regarding our progress and research interests. We have received funding to allow us to link to additional clinics and we will be doing so with some of our specialty clinic partners.

**Potential Audiences and Significance:** WSIB policy-makers, clinicians treating injured workers, researchers interested in the application of research findings directly into clinical practice.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

### **Presentations:**

Beaton DE, Jiang D, Tang K, MacDermid J, Richards R, Côté P, Franche R-L, Hogg-Johnson S, Bombardier C. Predicting injured workers' experience of "absenteeism at-work productivity loss" over one year after WSIB Specialty Clinic attendance. 28-29 May 2010; Toronto, ON: CARWH Conference.

Tang K, Beaton DE, Gignac MAM, Bombardier C. "Work instability" predicts greater work disability and down transitions in work status for injured workers with upper-limb disorders after one-year attendance at a WSIB specialty clinic. 31 Aug-3 Sep 2010; Angers, France: 7<sup>th</sup> PREMUS.

### **Funding:**

Beaton D, MacDermid J, Richards R. Managing the "tail of the curve": The course, predictive factors and work-related outcomes of injured workers one year after attending the WSIB Specialty Clinics for upper limb disorders. WSIB RAC: \$287,332 (2005-2007)

## **The Measurement of Work Disability/Disability at Work (0117/0121)**

**Project Status:** Ongoing

**Introduction:** This project includes five elements all aimed at improving our ability to measure the impact of limitations in health status on work productivity. The measures identify the impact of an injury or illness on work activities through self-reported limitations in job tasks. These measures may be markers for changes in productivity, may be precursors to disability resulting in work absence and may also serve as indicators of productivity-related costs in an economic appraisal.

### **Objectives:**

- To understand the development, use and measurement properties of currently existing measures of work disability and work productivity.
- To conduct a concurrent comparison of different measures of at-work disability.
- To provide leadership in the Outcome Measures in Rheumatological Clinical Trials (OMERACT) workshop and Canadian Arthritis Network (CAN-IWH) Strategic Service Resource (SSR) initiative.
- To make recommendations for the role of self-report measures of work disability in workplace studies at IWH and in the broader community.

**Methods:** These set of projects will be using scale development and measurement methods, such as factor analysis and Item Response Theory. The study of measurement properties of existing scales will include validity and reliability analysis, and examining sources of potential bias in self-report, survey administration.

**Results:** A planning meeting regarding collaborations in Worker Productivity in Europe was successfully held. Drs Bombardier and Beaton successfully led a special interest OMERACT work group on productivity in Borneo. Trainee began PhD with focus on measurement of worker productivity.

**Researchers:** Dorcas Beaton (Principal Investigator), Ben Amick, Claire Bombardier, Sheilah Hogg-Johnson, Emma Irvin, Cameron Mustard, Dwayne Van Eerd, Elizabeth Badley (University of Toronto), Monique Gignac (ACREU), Mieke Haase, Dianne Lacaille, Peter Tugwell and Douglas Veale (OMERACT), Shanley Pitts (OT Student), Robin Richards (Sunnybrook & Women's Health Sciences Centre), Sherra Solway (Toronto Rehabilitation Institute)

**Stakeholder Involvement:** The WSIB is a stakeholder, and is also coordinating the WSIB Shoulder and Elbow Specialty Clinic. The OMERACT and CAN initiatives both integrate stakeholders into the process.

**Potential Audiences and Significance:** A thorough understanding of work disability and the level of production lost from injured workers in the workplace, including how to measure this construct optimally, will be of particular interest to many stakeholders.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

### **Publication:**

Beaton DE, Tang K, Gignac M, Lacaille D, Badley E, Anis A. Reliability validity and responsiveness of five at work productivity measures in persons with rheumatoid arthritis or osteoarthritis. *Arth Care Res* 2010; 62(1):28-37.

### **Funding:**

Beaton D, Bombardier C. Disability while at work: measuring the progression of at-work disability and workplace productivity loss. Canadian Arthritis Network (CAN): \$250,600 (Apr '05-Mar '07)

Bombardier C. Disability while at work: A comparison of different measures in persons with arthritis. Canadian Arthritis Network (CAN): \$76,488 (May '04-Mar 31 '06)



## **Developing Standardized Metrics for Work Disability Benchmarking (0237)**

**Project Status:** Ongoing

**Introduction:** The WDB project involved IWH researchers and workplace parties working together to develop a Workplace Disability Benchmarking (WDB) application in order to compare and improve the disability management processes, health and safety outcomes and supervisor and employee satisfaction with the disability management process.

**Objectives:**

- To develop an ongoing workplace-level information system with workplace parties in Ontario.
- To monitor work disability management policies, practices and the outcomes of these practices such as satisfaction and Short Term Disability (STD) or workers compensation claims.
- To improve the measurement properties of metrics on absence and disability that will lead to valid and reliable tools as part of standardized benchmark.

**Methods:** Over a number of years, the project team worked with large employers in the financial services / banking sector to define the core elements of a standardized set of metrics to measure the process and outcome of disability management programs. Over the course of the period 2007-2008, the project team implemented a pilot project with seven employers to assess the feasibility of the Work Disability Benchmarking application. Following the pilot project, the WDB Advisory Committee recommended that the Institute launch an effort to expand the number of sectors participating in WDB.

**Results:** Over the course of the period 2009-2010, the Institute actively recruited large employers and public sector disability benefit trusts to participate in the Work Disability Benchmarking program. While the program's objectives and benchmarking products were acknowledged as useful to employers and disability benefit trusts, the Institute was not successful in meeting recruitment targets. Active recruitment of participants in the WDB was suspended in December 2010.

**Researchers:** Ben Amick (Principal Investigator), Roman Dolinschi and Bev Lever (Coordinators), Jason Busse, Anita Dubey, Philip Kiff, Cindy Moser, Cam Mustard, William Gnam (CAMH)

**Stakeholder Involvement:** Seven financial services organizations participated in the pilot phase of the Work Disability Benchmarking project.

**Potential Audiences and Significance:** Employers and human resources professionals.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

**Publication:**

Busse JW, Dolinschi R, Clark A, Scott L, Hogg-Johnson S, Amick III BC, Rivilis I, Cole DC. Attitudes towards disability management: a survey of employees returning to work and their supervisors. Accepted: Work.

**Presentations:**

Amick BC, Dolinschi R, Lever B, Bruce C. Benchmarking your organization's disability management performance. Nov 2010; San Diego, CA: 43<sup>rd</sup> Annual Canadian Employee Benefits Conference.

Amick BC, Dolinschi R. Work disability benchmarking in a Canadian context. Jun 2010; Halifax, NS: The Canadian Pension & Benefits Institute Forum: Navigating the New Normal.

Dolinschi R. Findings and insights from your disability benchmarking report. Sep 2010; Halifax, NS: Health Association Nova Scotia: Long Term Disability Trustees' Forum.

## **Clinical Treatment**

Injured workers, health care providers, payers, such as the WSIB and the public, are increasingly asking for system-wide processes to improve the quality of care provided and to measure the success of care delivery. High quality care implies practices that are consistent with the best evidence of efficacy and effectiveness (from randomized trials or observational studies) as well as systematic assessment of actual health outcomes. The Institute for Work & Health has made major contributions towards evidence-based practice (EBP) for the most burdensome musculoskeletal conditions: low back pain, neck pain, upper extremity conditions and chronic back pain. In 2010, we initiated a project to conduct an economic evaluation of low-intensity pulsed ultrasound in patients with tibial shaft fractures.

Much of the current work of our researchers in EBP is related to the Institute's role as an international Cochrane Collaboration Review site.

**Project Status:** Ongoing

**Introduction:** The Cochrane Collaboration is an international network of individuals and institutions committed to preparing, maintaining, and disseminating systematic reviews of the scientific literature on the effects of health care. The Institute hosts the Cochrane Back Review Group (CBRG), one of 52 review groups in the Cochrane Collaboration. The editorial and central coordinating activities associated with the CBRG are described here. The activities associated with Institute researchers who are conducting Cochrane reviews are described in project 670. The work of the Cochrane BRG remains closely aligned with the systematic review program initiated at IWH in 2005.

**Objectives:**

- To prepare, maintain and disseminate systematic reviews of the scientific literature on spinal disorders.
- To maintain a specialized database of trials on spinal disorders as a resource for those conducting literature searches; to help identify gaps in the literature and to suggest areas for further studies.
- To communicate regularly with our CBRG stakeholders.

**Methods:** Varies according to product, but generally involves a literature search, synthesis of the evidence and publication of a paper.

**Results:** Website and editorial office support survey completed and reported in poster (How to make a little go a long way: are we as helpful to others as we think we are? V Pennick, R Couban, A Kelly) at Canadian Cochrane Symposium, May 19-20. Discussions and preliminary work on update of website and author support services ongoing. CIHR granted 5-yr funding (\$9.6M) for all Canadian Cochrane Entities; Ontario MOH-LTC funding remains outstanding.

**Researchers:** Claire Bombardier (Principal Investigator), Vicki Pennick, Rachel Couban, Andrea Furlan, Allison Kelly, Pierre Côté (University Health Network), Jill Hayden (NSHRF), Maurits Van Tulder (Vrije Universiteit, Amsterdam)

**Stakeholder Involvement:** Clinical stakeholders: Participate in Cochrane activities at their own level of interest and expertise. This varies by individual, but may involve attending a systematic review workshop, conducting a review, or helping with strategies to make Cochrane reviews more accessible to clinical colleagues, students and the general public. (See KTE project #617 for more details).

**Potential Audiences and Significance:** Patients, health care professionals, policy-makers and payers. Updated systematic reviews of the literature provide the most current information on the effectiveness of treatment modalities and therapies, thereby assisting evidence-based treatment and payment decisions.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

**Publications:**

Dryden T, Furlan AD, Imamura M, Irvin E. Chapter 12 on low back pain and massage therapy in Christopher A Moyer and Trish Dryden, editors. Text book of Integrating Massage Therapy Research and Practice, Champaign, Illinois: Human Kinetics.

Fregni F, Imamura M, Lew HL, Boggio P, Kaptchuk TJ, Chien HF, et al. (with Furlan AD) Challenges and recommendations for placebo controls in randomized trials in physical and rehabilitation medicine: a report of the international placebo symposium working group. *Am J Phys Med Rehab* 2010; 89(2): 160-172.

Furlan AD, Pennick V, Ammendolia C, Hayden J. Non-surgical treatments for non-specific low-back pain in: Busse J (ed). *Evidence-Based Orthopaedics* by BMJ (submitted)

Furlan AD, Imamura M, Dryden T, Pennick V. In response. *Spine* 2010; 35(7):844.

Furlan AD, Imamura M, Dryden T, Pennick V. Massage for low back pain: An updated systematic review within the framework of the Cochrane Back Review Group. *Spine* 2010; 35(7): 843-844.

Furlan A, Yazdi F, Tsertsvadze A, Gross A, van Tulder M, Santaguida L, et al. Complementary and alternative therapies for back pain II. Evidence report/Technology assessment. No.194. Rockville, MD: Agency for Healthcare Research and Quality; 2010. Report No.: AHRQ Publication No. 10(11)-E007.

Pennick V, Schelkanova I, Furlan AD. Informing your practice with reviews published by the Cochrane Back Review Group: Conservative interventions for neck and back pain. *Physiotherapy Canada* 2010; 62(1):81-85.

Waseem Z, Boulias C, Gordon A, Ismail F, Furlan AD. Botulinum toxin for low-back pain. *Cochrane Database Syst Rev* 2010;(1):Art. No.: CD008257.

**Presentation:**

Pennick V, Couban R, Kelly A. How to make a little go a long way: are we as helpful to others as we think we are? 19-20 May 2010; Ottawa. Canadian Cochrane Symposium.

**Funding:**

Grimshaw J, Beyene J, Bombardier C, Feagan BG, Klassen TP, Lavis JN, Moayyedi P, Moher D, Tugwell P, Wright JM. Knowledge Synthesis and translation by Cochrane Canada. CIHR: \$9,600,000 (2010-2015)

## Evidence-Based Practice (0670)

**Project Status:** Ongoing

**Introduction:** Many researchers at the Institute are authors (or co-authors) of systematic reviews of health care interventions, including Cochrane, non-Cochrane reviews and Clinical Practice Guidelines. These reviews offer opportunities for partnerships with other systematic review teams and with local, national and international communities and stakeholders. While conducting these reviews, Institute researchers are exposed to various challenges on the methodology of conducting reviews, and the expertise of the Institute in solving these challenges is developed and strengthened.

**Objectives:**

- To conduct and update systematic reviews of health care interventions for musculoskeletal pain.

**Methods:** Systematic reviews – see Cochrane Back Group #440 for editorial process.

**Results:** Acupuncture and dry-needling for low-back pain. (Furlan) has been split into three protocols in preparation for updating. Complementary and Alternative Therapies for Back Pain II. Evidence Report/Technology Assessment No. 194 completed.

**Researchers:** Andrea Furlan (Principal Investigator), Claire Bombardier, Emma Irvin, Vicki Pennick, Rhoda Reardon (College of Physicians and Surgeons)

**Stakeholder Involvement:** Cochrane and non-Cochrane systematic reviews form the evidence basis of clinical practice guidelines worldwide and of evidence-based clinical tools for practitioners.

**Potential Audiences and Significance:** Up-to-date systematic reviews of the literature provide the most current information on the effectiveness of treatment modalities and therapies, thereby assisting evidence-based treatment and payment decisions by patients, health care professionals, policy makers and payers. Furlan and Irvin have been actively involved with the College of Physicians and Surgeons of Ontario in developing clinical practice guidelines of opioid use for chronic non-cancer pain. These guidelines will be disseminated by all Colleges in Canada to all primary care physicians and specialists dealing with pain.

Furlan has been involved with the Chalmers Institute in Ottawa to do a comprehensive review of CAM therapies (acupuncture, massage and spinal manipulation) for neck and low-back pain, looking at efficacy, adverse events and cost-effectiveness. These reviews will inform funding decisions at the NIH-NCCAM (National Centre for Complementary and Alternative Medicine).

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

**Publications:**

Furlan AD, Carnide N. Opioids for workers with an acute episode of low back pain. *Pain* 2010; 151(1): 1-2.

Furlan A, Chapparo LE, Irvin E, Mailis-Gagnon A. Undertreated pain and opioid misuse: Can we kill two birds with one guideline? Submitted: *Canadian Medical Association Journal*.

Furlan AD, Reardon R, Weppler C. Opioids for chronic non-cancer pain: a new Canadian practice guideline. *Canadian Medical Association Journal* 2010; 182(9): 923-930.

Furlan AD, Irvin E. Co-editors: Guidelines: Use of analgesics for non-cancer chronic pain for NOUGG.

**Presentations:**

Furlan AD, Irvin E, Reardon R. The Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain. 16 Feb 2010; Toronto: College of Physicians and Surgeons of Ontario

Furlan AD. The Canadian Opioid Guideline. 11 Mar 2010; Victoria General Hospital, Victoria British Columbia

Furlan AD, Chou R. The Canadian Opioid Guideline and the American Opioid Guideline. 12 Mar 2010; Vancouver British Columbia: 23rd Annual Pain and Suffering Symposium of The Foundation of Medical Excellence

Irvin E, Furlan AD. The Canadian Opioid Guideline. 20 Apr 2010; Toronto Rehab, Team Optimize.

Furlan AD. The Canadian Opioid Guideline workshop. 5 May 2010; Calgary, AB: 2010 Annual Conference of the Canadian Pain Society.

Furlan AD, Mailis-Gagnon A, Weppler C. The Canadian Opioid Guideline. 13 May 2010; Calgary, AL: Annual Conference of the Canadian Pain Society.

Furlan AD, Reardon R, Clarence W, Irvin E, Mailis A, Meldon K. (Abstract/Poster) National guideline development – Safe and effective use of opioids for chronic non-cancer pain. 15 May 2010: Calgary, AB: Canadian Pain Society.

Furlan AD. The Canadian Opioid Guideline. 27 May 2010; Toronto, ON: WSIB Drug Advisory Committee.

Furlan AD. The Canadian Opioid Guideline. 1 Jun 2010; Mississauga, ON: Advisory Board of the Canadian Pain Coalition.

Furlan AD. Canadian pain coalition: Advisory Board Meeting. The Canadian Opioid Guideline. Toronto, Ontario, June 1, 2010.

Furlan AD, Reardon R, Weppler C, Irvin E, Mailis-Gagnon, Kahan M. (Abstract/Poster) The Canadian guideline for safe and effective use of opioids for chronic non-cancer pain. 30 Aug 2010; Montreal, PQ: 13th World Congress on Pain (IASP).

Furlan AD. Intracity Conference Rounds: Division of Rheumatology, University of Toronto. The Canadian Opioid Guideline, September 14, 2010.

**Funding:**

Furlan AD, Flannery J, Reardon R. Opioid Guidelines Dissemination amongst Ontario physiatrists. AFP Innovation Fund \$45,604 (Jan 2009-Dec 2010).

## **Back Guide/Ontario Occupational Health Nurses' Association Journal (0830)**

**Project Status:** Ongoing

**Introduction:** The Institute has developed a number of evidence-based products in response to clinical stakeholders' requests for critiques of the research literature. *From the Research Frontier* is a regular feature of the Journal of the Ontario Occupational Health Nurses' Association (OOHNA), the official publication of the Association. Published three times a year, the column highlights the work of Institute researchers and colleagues that may be important to our occupational health stakeholders. The BackGuide™ is an educational web site for health-care providers who are involved with the management of low-back pain. Based on research conducted by the U.S. Agency for Health Care Policy and Research (AHCPR) and developed by the Institute in collaboration with the University of Calgary, it is designed to improve patient care and foster better use of valuable health-care resources.  
(this includes projects 830 and 345)

**Objectives:**

- To make the knowledge gained through high quality research both accessible and useful to our stakeholders.

**Methods:** Varies according to product, but generally involves a literature search, synthesis of the evidence and publication of a paper. BackGuide updates will involve updating the literature supporting the management of the clinical cases and possibly the development of another clinical case.

**Results:** References for BackGuide have been updated with recent guidelines for the management of LBP. No articles were submitted to OOHNA journal. We will submit a series of papers on Epidemiology for Occupational health nurses and a paper on Cochrane and the new Cochrane Occupational Safety and Health Review Group.

**Researchers:** Vicki Pennick (Institute Coordinator), Claire Bombardier, Anita Dubey, Allison Kelly, Philip Kiff

**Stakeholder Involvement:** Clinical network members, clinical stakeholders and the general public: Stakeholder feedback, obtained through needs assessment and contacts made by our KTE associate and scientific personnel, will guide product development.

**Potential Audiences and Significance:** By developing and distributing evidence-based clinical products, we support professional excellence and improved quality of health care for workers.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

## **A Randomized Control Trial of Bone Stimulators for Fracture Healing (2110)**

**Project Status:** Ongoing

**Introduction:** Tibial fractures, the most common long bone fractures, are usually treated operatively. These injuries are associated with a substantial amount of time off work and delay in return to full function. Some surgeons prescribe low-intensity, pulsed ultrasound to speed healing. The impact of ultrasound treatment on fracture healing thus remains uncertain.

### **Objectives:**

- To conduct a prospective, multi-centre, randomized, blinded, placebo-controlled trial to determine the effect of low-intensity pulsed ultrasound on the functional recovery from closed or open tibial shaft fractures, treated operatively, in skeletally mature adults of at least 18 years of age.
- To evaluate the impact of low-intensity, pulsed ultrasound, applied to operatively treated tibial shaft fractures, on functional status and time to return to normal activities.
- To assess time to radiographic healing of tibial fractures, rates of malunion and non-union of tibial fractures, and rates of secondary procedures (operative and non-operative).

**Results:** Worked on the trial protocol and compared the relative gains from joint administration of the SF-36 and SMFA to tibial fracture patients. Developed and validated the somatic pre-occupation and coping questionnaire among tibial fracture patients. Recruited patients and collected data.

**Researchers:** Jason Busse (Principal Investigator), Mohit Bhandari, Gordon Guyatt (McMaster University), James Heckman, Kwok Leung, David Saunder, Emil Schmitsch (St. Michael's Hospital), Paul Tornetta III (Boston University)

**Stakeholder Involvement:** The trial is co-funded by the Canadian Institutes of Health Research and Smith & Nephew, and supported by the CLARITY Methods Centre at McMaster University.

**Potential Audiences and Significance:** Tibial fractures are a common and costly injury - both in terms of direct and indirect (time lost at work) costs thus it is of relevance to employers, clinicians, insurers.

**Links to WSIB Policy & Program Priorities:** Health Services: Effectiveness & Efficiency of Clinical Care; Work Reintegration: Prevention & Management of Work Disability

### **Publications:**

Kooistra BW, Dijkman BG, Busse JW, Sprague S, Schemitsch EH, Bhandari M. The radiographic union scale in tibial fractures: reliability and validity. *Journal of Orthopaedic Trauma* 2010; 24(Suppl 1): S81-S86.

Busse JW, Bhandari M, Guyatt GH, Heels-Ansdell D, Kulkarni AV, Mandel S, et al. Development and validation of an instrument to predict functional recovery among a sample of tibial fracture patients. Submitted: *Journal of Orthopaedic Trauma*.

### **Presentation:**

Busse JW. The Somatic Pre-Occupation and Coping (SPOC) Questionnaire predicts return to work in tibial fracture patients. 28-29 May 2010; Toronto, ON: CARWH.

### **Funding:**

Busse JW, Bhandari M, Briel M, Einhorn T, Gnam WH, Guyatt GH, Schemitsch EH, Tornetta P. An economic evaluation of low-intensity pulsed ultrasound in patients with tibial shaft fractures. CIHR: \$60,000 (Oct'10-Sep'11).



## **Return to Work Practices**

The WSIB has identified improved return to work outcomes as a priority in reducing costs to the system. They articulate the need to fully support workplace parties in achieving more successful return to work outcomes and to reduce the costs of claims while respecting injured workers. Approximately 20% of disability episodes compensated by the WSIB involve duration disability longer than twelve weeks. There is some emerging evidence that the persistency of long duration disability episodes is increasing. Understanding the factors which may lead to or which may predict this long duration disability and poor return to work outcomes is a significant part of the IWH portfolio both in our observational and qualitative research studies described below. In 2010, we initiated a project to look at the “Skills for job recovery” which tests the feasibility of an online program for developing self efficacy and the skills needed for the job of returning to optimal work. In addition, working with some of our stakeholders we began to examine the role of co-workers in the return to work process.

## **Recurrence and Persistence of Work Absence: Understanding their Risk Factors and Long-term Impact on Workers' Health, Work Limitations, and Non-work Role Participation (0341)**

**Project Status:** Ongoing

**Introduction:** Following an occupational injury and work absence, recurrence of work absence is a critical outcome to consider when assessing sustainability of RTW. It is also associated with future persistent work absence. Indeed, 20% of injured workers with a musculoskeletal (MSK)-related lost-time claim have one recurrence or more of work absence in the first six months post-injury, and they are more than twice as likely as workers without recurrences to be still be off work. Our study seeks to identify the risk factors of long-term RTW trajectories of injured workers, and to describe the long-term health, work limitations, and non-work role participation consequences of such trajectories, with a focus on recurrent and persistent work absence.

### **Objectives:**

- To identify modifiable workplace, insurer, healthcare provider (HCP), and worker risk factors for recurrent and persistent work absence over 24 months post-injury.
- To describe the differences in, and identify the determinants of, the health status, work limitations, and role participation in parenting and care giving of injured workers over 24 months post-injury, associated with four RTW trajectories:
  - 1) Sustainable first RTW: No recurrence(s) of work absence with sustainable first RTW;
  - 2) Recurrence(s) with sustained RTW;
  - 3) Recurrence(s) without sustained RTW;
  - 4) Persistent work absence.
- To determine the impact of variations in definitions of recurrence of work absence (e.g., using administrative data vs. self-report) on rates of recurrences.
- To provide a comprehensive and long-term assessment of RTW trajectories by extending our cohort follow-up period up to 24 months.

**Methods:** We conducted a prospective cohort study of 632 injured workers, who had filed WSIB lost-time claim for an MSK-related work injury of the back or upper extremity (UE). Data was collected via telephone interviews at 1 month, 6 months, 12 months, and 24 months post-injury. Linkage of the interview with WSIB data allowed data extraction on compensation duration and history, leading to a comprehensive picture of the RTW trajectory.

**Results:** The four RTW trajectories have been operationalized using both self-report of working status and duration of WSIB wage replacement benefits at 12 and 24 month post-injury. We have examined the following modifiable risk factors for recurrent and persistent work absence, using logistic regressions: Workplace-based disability management practices, organizational culture, job characteristics, healthcare provider communication with worker/workplace, insurer factors, worker psychological/physical factors. In addition, quality of life was compared across the four RTW trajectory groups using MANOVAs, as indexed by physical and mental health (SF-12), work limitations (WL-16), depressive symptoms (CES-D), and pain medication consumption.

**Researchers:** Sheilah Hogg-Johnson (Principal Investigator), Colette Severin (Institute Coordinator), Jane Brennehan Gibson, Curtis Breslin, Nancy Carnide, John Frank, , Hyunmi Lee, Cameron Mustard, Ivan Steenstra, Marjan Vidmar, Renée-Louise Franche (Vancouver General Hospital), Pierre Côté (University Health Network), C. Gail Hepburn (University of Lethbridge)

**Stakeholder Involvement:** WSIB staff have been involved in determining the main areas of research focus from the beginning of the project. They were also involved in the recruitment process of the study. WSIB has been involved from the beginning of this project in identifying objectives, participating in recruitment, and in knowledge exchange and transfer.

**Potential Audiences and Significance:** Current RTW interventions do not focus on preventing recurrence and persistent work absence. Our study will provide evidence to guide future RTW interventions, whether they are provided by WSIB or by other insurers/companies.

The outcomes of this study will be relevant to current and planned activities in return-to-work at WSIB. Specifically, the findings will strengthen WSIB case assessment ability, and assist in the design and selection of appropriate interventions. Furthermore, the study findings can be incorporated into WSIB's external education initiatives.

An important focus of our study is the assessment of work accommodation not merely as an "offer" but also a "process" and the consideration of its role in RTW trajectories. Our assessment incorporates both organizational and interpersonal aspects of the process, as well as type, timing, and process of the work.

Returning an injured worker to work following an occupational injury is the shared responsibility of the worker, employer, health-care provider, and the WSIB. This study will provide compelling evidence to support effective workplace-based disability management, integrated with insurer and health-care provider activities, to prevent recurrent and persistent work absence and facilitate sustainable RTW. We anticipate that the importance of involving all RTW parties will be supported, with the main locus of action being the workplace.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

**Publications:**

Brouwer S, Franche R-L, Hogg-Johnson S, Lee H, Krause N, Shaw WS. Return-to-work self-efficacy: development and validation of a scale in claimants with musculoskeletal disorders. *Journal of Occupational Rehabilitation*. [Epub ahead of print].

Steenstra IA, Ibrahim SA, Pransky GS, Franche R-L, Hogg-Johnson S, Shaw WS. Validation of a risk factor-based intervention strategy model using data from the Readiness for return to work cohort study. *Journal of Occupational Rehabilitation* 2010;20(3):394-405.

**Funding:**

Franche RL, Breslin C, Cote P, Hogg-Johnson S, Mustard C, Reardon R. Recurrence and persistence of work absence: Understanding their risk factors, and long-term impact on workers' health, work limitations, and non-work role participation. WSIB RAC: \$246,674 (2006-2008)

## **Skills for Job Recovery: Testing the Feasibility of an Online Program for Developing Self Efficacy and the Skills Needed for the Job of Returning to Optimal Work (2125)**

**Project Status:** Ongoing

**Introduction:** Injured workers can lack the skills and experience to navigate their way through the potential obstacles to successful return to work (RTW). Varekamp (2009) described the skills workers need for RTW as (having a realistic view of abilities, problem solving skills, maintaining social relationships) – Skills for the Job of Recovery. But outreach to dispersed workers, across workplaces is challenging. Lorig found an internet-based support and education program reduced disability and health care utilization by developing some of these same or related skills in back pain patients and chronic diseases. The transfer to injured workers failed due to logistical issues, including sampling too early in recovery.

### **Objectives:**

- To determine the behaviours and / or beliefs injured workers need to learn in order to move them towards successful return to work
- To assess the level of access specialty clinic attendees have to the internet and their sense of confidence interacting with a web-based information system
- To test the potential outcomes that would be used in a study of the effectiveness of this learning system
- To review the platforms available for this type of learning system and determine the feasibility and cost related to its development

**Results:** Review interview guide for focus group, pilot focus group, begin REB process for survey module, begin focus groups. In depth coding of focus groups, survey preparation and conduct survey. Write manuscripts on focus groups and paper on survey and focus groups.

**Researchers:** Dorcas Beaton (Principal Investigator), Ben Amick, Carol Kennedy-Yee, Ellen MacEachen, Cynthia Neilson, Peter Smith, Ivan Steenstra, Kenneth Tang, Gabrielle van der Velde, Dwayne Van Eerd, William Gnam (Centre for Addiction and Mental Health), Kate Lorig (Stanford University), Joy MacDermid (McMaster University), Iona MacRitchie Robin Richards (Sunnybrook & Women's Health Sciences Centre)

**Stakeholder Involvement:** We propose using the Shoulder and Elbow clinic (Holland Orthopaedic and Arthritic Centre) with partners in the Hand and Upper Limb clinic and the post-traumatic stress clinic. The WSIB specialty clinic programs will be used as the source of longer term injured workers for our study. Focus groups will be coordinated by trained members of the knowledge translation staff at the Institute for Work & Health.

**Potential Audiences and Significance:** Our study will lay the foundation for a program that helps workers develop the “Skills for the Job of Recovery”. At the end of this project we will deliver a report on the target content needed in a self-management program, levels of literacy and computer use/access in injured workers attending our clinic, data on the outcomes we would likely use in a future study, decisions by the investigative team as to the overall feasibility of developing and evaluating a web-based platform weighting the costs, potential benefits, and ability to reach the injured workers in need. The need for programs such as this is well recognized by the WSIB, as evidenced by its Low Back Pain Program of Care.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

### **Funding:**

Beaton DE, Smith PM, Van Eerd D, Kennedy C, Tang K, Steenstra I, Gnam W, MacRitchie I, Lorig K, van der Velde G. Skills for the job of recovery: Testing the feasibility of an online program for developing self efficacy and the skills needed for the job of returning to optimal work. WSIB BTG: \$58,145 (Oct '09-Oct'10)

## Training Initiatives in Work Disability Prevention (0144)

**Project Status:** Ongoing

**Introduction:** The Institute is recognized for its expertise in evidence-based practice and work disability prevention. It has received an increasing number of requests to share its expertise and to contribute to the education and training of educators, clinicians and future researchers. The IWH supports the CIHR Work Disability Prevention (WDP) Program, which is now based at the University of Toronto, by contributing Scientist's time and expertise. We also encourage our students to participate in the program. The WDP program has attracted international attention and recognition, and many non-Canadian students apply.

**Objectives:**

- To influence the next generation of health-care professionals and research trainees by participating in the development and execution of the CIHR Work Disability Prevention training initiative.

**Methods:** Many scientists at the IWH are involved as mentors or committee members for this CIHR training initiative in work disability prevention.

**Results:** This initiative draws high calibre work disability prevention students and young academics from around the world. IWH participation offers a two-way learning initiative. We share our expertise with students. At the same time, we keep up to date about international OHS issues and disciplinary variation in the field.

**Researchers:** Ellen MacEachen (Principal Investigator), Curtis Breslin, Donald Cole, Sheilah Hogg-Johnson, Emile Tompa, Pierre Côté (University Health Network), Renée-Louise Franche (Vancouver General Hospital), Jaime Guzmán (University of British Columbia)

**Stakeholder Involvement:** A Program Advisory Committee consisting of policy-makers, employers, union reps, students, and injured workers provides advice to the Program Executive Committee. Stakeholders are also involved in educational activities during the summer session.

**Potential Audiences and Significance:** The IWH training initiatives will be of particular interest to health-care professional students, educators, clinicians, and research trainees.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

**Publications:**

Tjulin A, MacEachen E, Ekberg K. Exploring the meaning of early contact in return-to-work from the workplace actor's view. *Disability and Rehabilitation* 2010;33(2): 137-145.

Tjulin A, MacEachen E, Edvardsson S, Ekberg K. The social interaction of return to work explored from co-workers experiences. Accepted: *Disability and Rehabilitation*.

Loisel P, Anema H, MacEachen E, Pransky G, editors. *Managing work disability in the 21<sup>st</sup> century*. Accepted: Springer Press.

**Presentations:**

Bernhard D, MacEachen E, Lippel K, Ekberg K. What impact has legislation on disability management expert's practice? 20-22 Sep 2010; Los Angeles, CA: International Forum on Disability Management.

Tjulin A, MacEachen E, Ekberg K. The social challenges of a time-scheduled early contact at the workplace in return-to-work. 14-17 Jun 2010; Amsterdam: ICOH-WPOS Scientific Committee on Work Organisation and Psychosocial Factors of the International Commission on Occupational Health.

MacEachen E. What is causation? A sociological view. 1 Jun 2010: Toronto, ON: Symposium for CIHR Work Disability Prevention Training Program.

MacEachen E, Tompa E, Dewa C. Symposium on socio-political challenges of chronic pain and work disability prevention. 9-11 Jun 2010; Toronto, ON: CIHR Work Disability Prevention Training Program.

MacEachen E. Cause is contextual. CIHR Work Disability Prevention Training Program. 1 Jun 2010; University of Toronto.

**Funding:**

Loisel P, Breslin C, Hogg-Johnson S, MacEachen E, Tompa E, Smith P, Lippel K, Franche RL, Bultmann U, et al. CIHR strategic training program in work disability prevention. CIHR: \$1,950,000 (2009-2015)

## **Compensation and Benefits**

Over the course of regular meetings with WSIB staff, the Institute has identified a number of opportunities for our research to contribute to understanding the factors related to long-duration disability episodes. This includes analyses of the markers of claims persistency under two different sets of legislation Bill 162 and more recently Bill 99.

The examination of wage replacement benefits is another area of IWH research which is highly relevant to workers' compensation policy in managing work disability in Ontario and other jurisdictions. One of the objectives of our research is to understand the adequacy and equity of long term disability income loss compensation programs. This work attempts to answer questions about earnings loss post-injury and the impact of workers' compensation system policies on the lives of injured workers. This ongoing research program considers the post-accident experience of individuals who have sustained permanent impairment due to a work-related accident occurring in Ontario and British Columbia. This research is supported by grant funding from the U.S. National Institute of Occupational Health & Safety (NIOSH) and WorkSafeBC.

A third area of study follows the Institute's long standing commitment to conduct research that informs compensation policy and practice that responds to the needs of seriously injured workers and other particular groups of workers. One of the key objectives in this area is to provide evidence based research that responds to the knowledge gaps in understanding the consequences of work injury and to understand the impact of legislation, policies and programs on these consequences within different groups of workers.

## Adequacy and Equity of British Columbia Workers' Compensation Benefits (0418)

**Project Status:** Ongoing

**Introduction:** Prior to June 30, 2002, WorkSafeBC had a bifurcated award system for compensating long-term work disability arising from work-related accidents. Two methods of benefits calculation were considered with each claim—a loss-of-function/permanent-impairment benefit and a loss-of-earning-capacity benefit. A worker was eligible for whichever benefit was higher. Bill 49, effective June 30, 2002, introduced a single award system for long-term work disability benefits based on loss-of-function.

There are concerns that the change in benefits policy will have an adverse impact on some beneficiaries, particularly those who would have received a loss-of-earning-capacity benefit under the old system. Other changes to the short- and long-term disability benefit programs may also have an adverse impact on the adequacy and equity of wage-replacement benefits received by injured workers. These include a change of the benefit formula from 75% pre-tax to 90% after tax of pre-injury earnings, changes to cost-of-living adjustment, integration of CPP disability benefit into the benefits formula, and changes to benefits received after age 65.

**Objectives:**

- To investigate the impact of changes in benefits calculation on the financial circumstances of workers' compensation beneficiaries. It will investigate the adequacy and equity of wage-replacement benefits provided by the pre- and post-Bill 49 benefit programs.
- To investigate: 1) earnings and earnings losses; 2) lost earnings replacement; 3) differences or earnings losses between women and men; 4) regional differences in earnings losses; 5) principal income sources post accident; 6) marital formation/dissolution post accident.

**Methods:** We enrolled a sample of long-term disability claimants from the pre-June 2002 claimant cohort to undertake a counterfactual analysis, i.e., the benefits the cohort would have received if they were to receive benefits under Bill 49. The sample frame comprised claimants who had a work accident between 1990 and 1994. This frame was linked to the Longitudinal Administrative Databank (LAD), which is a 20% random sample of Canadian tax filers.

Actual benefits received by claimants were linked along with an identifier indicating the type of benefits received (i.e., loss-of-function or loss-of-earning-capacity benefit). We identified approximately 18-19% of this frame in the LAD. For each claimant identified in the LAD we estimated on a yearly basis: 1) the after-tax labour-market earnings before and after the accident year, 2) the pre- and post-Bill 49 benefits, 3) the earnings recovery rate post-accident, and 4) the lost wage-replacement rate with pre- and post-Bill 49 benefits.

Earnings recovery and wage-replacement rates were calculated in two ways: 1) a comparison with pre-injury, after-tax earnings, and 2) a comparison with a sample of uninjured counterparts that have similar socio-demographic characteristics and earnings profiles prior to the accident year. Linkage and analyses for short-term disability claimants was based on frames from calendar years 1996, 1998, 2000, and 2002.

**Results:** Overall, the move to Bill 49 has resulted in reduced replacement rates for long-term disability claimants. The pre-Bill 49 policy had adequate and equitable individual-level earnings replacement rates. Most strata had rates above 100%, suggesting that benefits were more than adequate. Only the two oldest age brackets (35-49 and 50-59) had rates less than 100%, with the rate notably lower for the 50-59 age bracket (83%). With the introduction of Bill 49, this stratum appeared to be a particularly vulnerable group. Its rate dropped to 78% with the three key changes introduced with Bill 49.

**Researchers:** Emile Tompa (Principal Investigator), Cynthia Chen, Jacob Etches, Miao Fang

**Stakeholder Involvement:** A key knowledge transfer and exchange activity for this study will be frequent consultations with WorkSafeBC policymakers and worker representatives over the course of the project. Ongoing consultation over the duration of the research will ensure that the analyses undertaken and results



obtained are framed appropriately and address all the relevant issues. Two meetings with British Columbia stakeholders have held during the two-years of funding. At the request of senior staff of WorkSafeBC, the Institute has proposed a follow-up project to describe benefit adequacy in a recent cohort of workers' compensation claimants in British Columbia.

**Potential Audiences and Significance:** This project is of interest to both workers and workers' compensation insurance providers. WorkSafeBC policy-makers are interested in the comparison of the two benefit programs. Other jurisdictions will also be interested in this study, since the benefits programs in British Columbia are quite unique, particularly the long-term disability program in existence prior to the introduction of Bill 49.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

#### **Publications:**

IWH Issue Briefing: Examining the adequacy of workers' compensation benefits.

Tompa E, Mustard C, Koehoorn M, Scott-Marshall H, Fang M, Chen C. 2010. WorkSafeBC Study Report 1: The impact of Bill 49 on benefits adequacy and equity.

Tompa E, Scott-Marshall H, Fang M, Mustard C. 2010. WorkSafeBC Study Report 2: Comparison of three distinct workers' compensation programs.

Tompa E, Scott-Marshall H, Fang M, 2010. WorkSafeBC study report 3: Work disability and marital breakup.

Tompa E, Scott-Marshall H, Fang M, Mustard C. Comparative benefits adequacy and equity of three Canadian workers' compensation programs for long-term disability. IWH Working Paper #350.

#### **Presentations:**

Tompa E, Scott-Marshall H, Fang M, Mustard C. Comparative benefits adequacy and equity of three Canadian workers' compensation programs for long-term disability. Dec 2010; Toronto, ON: IWH Meeting of the Board of the Directors.

Mustard C, Tompa E. The impact of Bill 49 on benefits adequacy and equity. 22 Sep 2010; WorkSafeBC Senior Policy Makers.

Tompa E, Scott-Marshall H, Fang M, Mustard C. Work disability trajectories after permanent impairment: Evidence from three Canadian long term disability compensation programs. Aug 2010; Angers, France: Work Disability Prevention Initiative Conference.

Tompa E, Scott-Marshall H, Fang M, Mustard C. Comparative benefits adequacy and equity of three Canadian workers' compensation programs for long-term disability. Jun 2010; Toronto, ON: Research Action Alliance on the Consequences of Work Injury (RAACWI) Community Forum.

Tompa E, Scott-Marshall H, Fang M, Mustard C. Comparative Benefits Adequacy and Equity of Three Canadian workers' compensation programs for long-term disability. May 2010; Toronto, ON: Canadian Association for Research on Work and Health (CARWH) Worker Health in a Changing World of Work Conference.

#### **Funding:**

Tompa E, Mustard C, Saunders R, Koehoorn M (Co-investigators). Adequacy and equity of benefits for workers' compensation claims, 1999-2005. Submitted: WorkSafeBC Research at Work, January 2011. Requesting \$252,620 for 2 years.

## **Examining Explanations for the Increasing Frequency of Long Duration Compensation Claims (0327)**

**Project Status:** Ongoing

**Introduction:** There has been growing concern among the Ontario prevention partners about the increase in days on benefits among Ontario WSIB claimants, including the increasing numbers of claims being locked in at the six year time point.

**Objectives:**

- To identify markers of claims persistence under two different sets of legislation - Bill 162 and Bill 99.

**Methods:** A core data file of cohorts of claimants from 1990 to 2001 inclusive will be created to be used by all members of the working group for exploration. These cohorts will be identified using an agreed upon set of inclusion/exclusion criteria for these cohorts. All working groups will use the core data file when extracting different measures.

Denominators to be considered for the first hypothesis include all claimants and the entire labour force. For case mix, we will consider age, sex, occupation, industry, injury descriptors, pre-injury wage, etc. Other markers related to the change from Bill 162 to Bill 99 will be extracted and may include: 12 consecutive months on TT/LOE benefits, changing status from NLT to LT, claim re-opens, health care utilization, VR/LMR activity, locked-in status, FEL and NEL awards. Time trends for various markers will be explored in population of all claimants in cohort and in population of those locking in.

**Results:** Finalized the list of claims milestones in the milestones inventory, and to identify data sources for those milestones we do not have in our data yet, and then to extract those additional data and add to study database. To prepare manuscripts of milestones, duration within windows, narcotic use and deliver final report to WSIB.

**Researchers:** Sheilah Hogg-Johnson (Principal Investigator), Ben Amick, Cynthia Chen, Arold Davilmar, Andrea Furlan, Hyunmi Lee, David Tolusso, Emile Tompa

**Stakeholder Involvement:** We hope to continue to work with the WSIB working group on claims persistence under the guidance of Judy Geary.

**Potential Audiences and Significance:** The WSIB is interested in understanding the reasons for the recent increase in claims persistence.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

**Funding:**

Hogg-Johnson S, Tompa E, Amick B. The problem of claims persistency – What is driving increases in persistent and locked-in claims? WSIB-RAC: \$182,583 (2008-2010)

## **Immigrant Workers' Experience after Work-related Injury and Illness (0273)**

**Project Status:** Ongoing

**Introduction:** Immigrants are very important to the Canadian labour force. Between 1991 and 1996 immigrant workers accounted for 70% of all labour force growth and are expected to account for almost all net labour force growth by 2011. Immigrants make up 27% of Ontario's and 44% of Toronto's population. Immigrants, particularly visible minorities, tend to be concentrated in precarious, low waged jobs (processing, services, manufacturing) and many hold jobs incommensurate with their education and experience. Immigrant workers may have problems getting their qualifications recognized and although most new immigrants have competency in English, they may not be fully fluent. In order to support dependents, sponsor family members or send financial aid to their country of origin, new immigrants may keep jobs even when faced with poor working conditions or injury. Those workers with high job insecurity, poor language skills, and a lack of familiarity with Canadian social programs may face particular challenges when injured at work. They may fear reporting an injury if they think doing so will jeopardize their job; they may not know their rights; and they may have trouble accessing, understanding and navigating the compensation system. While other research has investigated risks faced by immigrant workers, little is known about their experiences post-injury, including how they manage, cope and access workplace support, workers' compensation and health-care systems.

### **Objectives:**

- To examine the experiences of injured immigrant workers in Toronto – a city with the highest level of immigration in Canada. The study will examine workers' experiences as they navigate the workers' compensation system, as well as, their knowledge of and willingness to invoke workplace rights after injury. This study will provide important information about the experiences of a group of workers that represent an important and growing segment of our labour force. We hope that the study can speak to the ways in which workplace practices, health-care services, and compensation policies can best serve these workers.

**Methods:** This study will involve in-depth interviews with 30 injured immigrant workers and 10 service providers. We will first interview service providers (worker advocates, health care providers, settlement counselors, etc.) who can speak to key issues facing immigrant workers, challenges encountered after injury and potential systemic problems and barriers. Next, working closely with worker groups, multicultural organizations, and health care providers, we will recruit two groups of injured immigrant workers – those who have not filed a claim and those who have experience with the compensation system.

In our analysis we will pay special attention to how education, ethnicity, gender, age and language-knowledge shape workers' experiences and trajectories.

**Results:** Intensive coding and analysis has continued. Papers have been prepared and this has been presented in British Columbia as well as an IWH plenary.

**Researchers:** Agnieszka Kosny (Principal Investigator), Marni Lifshen, Ellen MacEachen, Peter Smith

**Stakeholder Involvement:** The following individuals are involved in the development of the project and on the study advisory committee: Basil Boolis, Injured Worker Representative, Bright Lights Group c/o Injured Workers' Consultants; Brian Gibson, LAMP Community Health Centre; Carl Kaufman, Toronto Workers' Health and Safety Legal Clinic; Constanza Duran, Community Legal Worker, Injured Workers' Consultants; Gail Lush, Communications Coordinator, National Network on the Environments and Women's Health, Institute for Health Research, York University; Luise Mitschele, WSIB; Marion Endicott, Injured Workers' Consultants; Orlando Buonastella, Injured Workers' Consultants; Rebecca Lok, Community Legal Worker, Injured Workers' Consultants.

**Potential Audiences and Significance:** The study research team is well connected to a diverse range of research groups and stakeholders. Drs. Kosny and MacEachen are part of a Research Action Alliance on the Consequences of Work Injury which brings together academic and community researchers studying

compensation systems and the effects of injury on workers. Results will be shared with this group and their KTE activities will include information about this study. Dr. Shields is the Co-Director of the Centre of Excellence on the Study of Immigrant and Settlement, one of five such centres across Canada. Through him, our study results will be disseminated to a network of researchers and policy-makers working in the area of immigration and settlement services. Results will be presented at conferences.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

**Presentations:**

Kosny A. New immigrants experiences after a work-related injury – preliminary findings. Jun 2010; Toronto, ON: Occupational Health and Safety Expert Panel Review, Vulnerable Workers Group.

Kosny A, Lifshen M, MacEachen E, Neilson C, Jafri G, Smith P, Shields J. Immigrant workers' experiences after a work-related injury. 14-17 Jun 2010; Amsterdam: ICOH-WOPS Conference.

Kosny A, MacEachen E, Lifshen M, Smith P, Neilson C, Jafri G, Pugliese D, Shields J. Lost in translation? How language knowledge shapes immigrants' experiences after a work-injury. The case of constrained choices in Ontario, Canada. 2-3 Sep 2010; Angers, France: First International Conference Work Disability Prevention and Integration Conference.

Kosny A, MacEachen E, Lifshen M, Smith P, Neilson C, Jafri G, Pugliese D, Shields J. Lost in translation? Methodological messes and lessons learned using interpreters during interviews with injured, immigrant workers. 3-5 Oct 2010; Vancouver, British Columbia: International Institute for Qualitative Methodology's 2010, Qualitative Health Research Conference.

**Funding:**

Kosny A, MacEachen E, Smith P, Shields J. Immigrant workers' experiences after work-related injury and illness. WSIB RAC: \$164,971 (Jan'08-Nov'10)

## RAACWI - Compensation and Consequences of Work Injury (0428)

**Project Status:** Ongoing

**Introduction:** A group of researchers, injured workers, community representatives and organizations is investigating the workers' compensation system and its influence on the lives of injured workers. The research agenda of the Research Action Alliance on the Consequences of Work Injury (RAACWI) will look at how the system helps and protects, or negatively impacts, injured and ill workers. The project will focus on injured workers' financial situations, their employment opportunities and their health and well-being. Under this umbrella, there will be a number of different, but linked research projects - some located at IWH and others at our partner institutions.

### **Objectives:**

- To undertake the five-year program supported by a Social Sciences and Humanities Research Council of Canada (SSHRC) grant.
- To conduct innovative, community-based research that responds to knowledge gaps in understanding the consequences of work injury and the impact of legislation, policies, programs and practices on these consequences.
- To increase research capacity in the social and health sciences on occupational health and safety and workers' compensation through training and mentoring of new researchers.
- To build strong community-researcher links in the course of undertaking the research.
- To encourage evidence-based policy decision making in the workers' compensation arena through ongoing linkage and exchange with key stakeholders.
- To equip injured workers and their representatives with the skills to continue the involvement in research and the dissemination of evidence building sustainable representation of workers' needs in the development of legislation, policies and programs.

**Methods:** RAACWI research is divided into four themes: 1) Legislation, policies, programs & practices; 2) Financial security & employment experiences; 3) Health & well-being; 4) History and social/political movements. The initiative also includes academic and community capacity building. The former includes recruitment of new researchers at the MA, PhD and Post-doctoral level to participate in the various activities of the initiative. The latter consists of community forums, and a speakers school, as well as active engagement of injured workers in all aspects of the initiative. More recently RAACWI members have been engaged in dialogue with policy makers.

**Results:** Several Blue Sky (Policy dialogue) meetings on 1) stigma, 2) RTW, and 3) tracking injured worker outcomes were held with the WSIB over the course. The health and economic well-being survey data collection was completed and analysis is underway. A number of other research projects were completed or are near completion. Several other KTE activities were executed, including e-newsletters History Bulletins, website updates, and participation at the Work Disability Prevention Program. Several capacity building activities are ongoing, including speakers school and community forums. The fifth post doctoral fellow was recruited in the Spring of 2010. Planning sessions have also been held for the second Stakeholder Symposium, a book on the RAACWI initiative, and the future of RAACWI. Steering committee meetings and team meetings were also held over the year.

**Researchers:** Emile Tompa (Principal Investigator), Ellen MacEachen, Sara Macdonald, Cindy Moser, Cynthia Neilson, Peri Ballantyne (Trent University), Claire de Oliveira, Alice De Wolf (Consultant), Marion Endicott (Injured Workers' Consultant), Renée-Louise Franche (Vancouver General Hospital), Alina Gildiner (McMaster University), Jaime Guzmán (University of British Columbia), Bonnie Kirsh (University of Toronto), Katherine Lippel (Université du Québec à Montréal (UQAM)), Steve Mantis (Ontario Network for Injured Workers Groups), Liz Mansfield, Heather Scott-Marshall, Fergal O'Hagen, Sabrina Puccini and Pat Vinneau (Injured Workers' Consultants/Bright Lights), Sharon Dale Stone (Lakehead University), Robert Storey (McMaster University)

**Stakeholder Involvement:** We began a dialogue with policy-makers at the WSIB in 2006, and this has continued. The research program was developed in conjunction with the community of injured workers and

their representatives. The lead partner organizations are McMaster University, IWH, the Bancroft Institute, and Injured Worker Consultants. There are several other university and community partners and supporters.

**Potential Audiences and Significance:** Injured workers, their families and their representatives, WCBs, MOLs and workplace parties.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

**Publications:**

The Blue Sky on Stigma initiative completed a Stigma Framework, a training program on stigma, and a brochure on stigma. The stigma initiative was also written up as a case study. Currently we are developing a book about the RAACWI initiative, which will consist of an overview of the initiative and its activities, research presentations, and descriptions of capacity building efforts. A number of research projects undertaken by academic researchers in the RAACWI initiative have their core funding from other sources, therefore publications for these projects are reported elsewhere.

**Presentations:**

Following is an abbreviated list of RAACWI presentations in 2010:

- 1) The Blue Sky on Stigma initiative was presented at CARWH and AWCBC;
- 2) E Tompa presented the benefits adequacy and equity study at a community forum;
- 2b) E MacEachen presented the LMR study at a community forum;
- 3) P Ballantyne and F O'Hagen presented preliminary Poverty Survey results at CARWH;
- 4) Several Blue Sky discussion meetings were held with the WSIB on Stigma, RTW, and Injured Worker Outcomes; and
- 5) Several research presentations were given at two RAACWI team meetings. A number of research projects undertaken by academic researchers in the RAACWI initiative have their core funding from other sources, therefore presentations for these projects are reported elsewhere.

**Funding:**

Tompa E, Endicott M, de Wolff A, Franche R-L, Guzmán J, MacEachen E, et al. CURA: Workers' compensation and the consequences of work injury. SSHRC: \$997,322 at McMaster University (2006-2010)

## **Immigrant Workers Experiences after Work-related Injury in British Columbia: Identifying Key Questions and Building Research Capacity (0258)**

**Project Status:** Completed

**Introduction:** Immigrant workers represent the majority of labour force growth in Canada, yet there is indication that their experiences can be problematic. Immigrant workers are more likely to work in poor-quality, low wage jobs, and to face employment insecurity, language barriers and difficulty navigating Canadian social programs. Immigrant workers may face particular challenges when injured on the job, including poor knowledge of their rights, fear of losing their job or reporting their injury, and difficulty accessing compensation.

### **Objectives:**

- To identify key research gaps around injured immigrant workers in the British Columbia context through literature review.
- To conduct community consultations and service provider interviews in British Columbia.
- To link and connect with researchers, policy makers and community stakeholders in British Columbia, creating a network of potential research partners.
- To produce a report detailing research themes and policy/service gaps.
- To develop a feasible, methodologically sound research proposal to examine immigrant workers' experiences after a work-related injury in British Columbia.

**Methods:** Research and policy forum, interviews/consultations with stakeholders

**Results:** All service provider interviews were conducted. Networking with research and community groups was nurtured and maintained and key themes, research and service gaps were identified. All interviews were completed and networking continued. The final report for WorkSafeBC is complete and partners have been identified for future grant proposals.

**Researchers:** Agnieszka Kosny (Principal Investigator), Ellen MacEachen, Peter Smith, John Shields (Ryerson University)

**Stakeholder Involvement:** Unions, community organizations, settlement agencies, academics, policy makers (Ministry of Labour, WorkSafeBC)

**Potential Audiences and Significance:** community organizations, settlement agencies, Dr. Shields is the Co-Director of the Centre of Excellence on the Study of Immigrant and Settlement, one of five such centres across Canada. Through him, our study results will be disseminated to a network of researchers and policy-makers working in the area of immigration and settlement services. Results will be presented at conferences.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

### **Funding:**

Kosny A, MacEachen E, Smith P, Shields J. Immigrant workers' experiences after work-related injury in BC: Identifying key questions and building research capacity. WorkSafeBC: \$30,042 (Sep'08-Sep'09)

## **Examining Trends in the Incidence and Cost of Workers Compensation Claims in the Ontario and British Columbia Long Term Care Sectors 1998-2007 (0439)**

**Project Status:** Ongoing

**Introduction:** The goal of this study is to examine trends over time in compensation claim activity and benefit expenditures for work-related health conditions among employees in the long-term care sectors in the Canadian provinces of British Columbia and Ontario. There are more than 60,000 full-time equivalent workers in the long-term care sector in Ontario and more than 14,000 workers in British Columbia. The study has a particular interest in understanding the influence of insurance premium experience rating programs and other policy initiatives in the two provinces on practices within the long-term care sector related to the prevention of work-related injury and illness and separately, practices related to the management of work disability.

### **Objectives:**

- To assess evidence that the effectiveness of primary and secondary prevention of work-related injury has differed in British Columbia compared to Ontario.
- To describe disability management practices in a representative sample of long-term care facilities in British Columbia and Ontario in 2008.

**Methods:** The study design was a time series analysis of workers' compensation claims for the long-term care sectors in two Canadian provinces over the ten year period 1998-2007. In both Ontario and British Columbia, the study team obtained electronic abstracts of compensation claim records for workers employed in long term care facilities. In British Columbia, the long term care sector is classified as a unique rate group (Classification Unit Number 766011), representing a range of institutions providing long-term care. The study team manually excluded those British Columbia facilities in CU 766011 that provide services other than long-term care for the aged. Similarly, in Ontario, the large majority of long term care facilities are classified to a unique rate group (851).

**Results:** This study described trends in workers' compensation benefit expenditures in the long term care sectors in the Canadian provinces of Ontario and British Columbia over the ten year period 1998-2007. The long term care sectors in the two provinces are broadly similar on a range of indicators: both provinces have a mix of publicly and privately owned facilities, the proportion of facilities that have collective agreements is approximately similar and the amounts of per diem funding and estimated staffing levels are comparable. Despite these broad similarities, this study found substantial (and unexpected) differences in the incidence and duration of workers' compensation claims between the two provinces. The incidence of workers' compensation claims for work-related injury and illness among workers in the long-term care sector in British Columbia is approximately twice as high as are reported in the province of Ontario. The median duration of disability episodes among long-term care sector staff in British Columbia is approximately twice as long as are reported in Ontario. The consequence of a higher incidence of compensation claims and the longer compensated durations of disability result in benefit expenditures per 100 full-time equivalents approximately four times greater in British Columbia than in Ontario.

**Researchers:** Cameron Mustard (Principal Investigator), Jeremy Petch, Peter Smith, Emile Tompa, Mieke Koehoorn and Christopher McLeod (University of British Columbia)

**Stakeholder Involvement:** This project had regular interactions with key stakeholder groups, including representatives of the Healthcare Employees Union, the Occupational Health & Safety Agency for Healthcare and WorkSafeBC in British Columbia.

**Potential Audiences and Significance:** Audiences who may be interested in the results include representatives of organized labour organizations, policy-makers in federal and provincial Ministries of Health, policy audiences in provincial Workers' Compensation authorities, trade associations representing propriety and non-profit operators of long-term care facilities, and accreditation bodies such as the Canadian Council on Health Services Accreditation. Research findings will be disseminated to our non-research partners using a range of approaches. The KTE group will prepare plain language summaries of the study



findings for the IWH website. Other dissemination methods will include newsletter articles (e.g., for the IWH newsletter AtWork, OHS Canada newsletter, CCOHS e-newsletter) and individual briefings interested representatives of workers, employers and policy-makers in the long-term care sector. Research findings will also be published in academic journals.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability

**Publication:**

Mustard CA, Steenstra I, Smith PM, Amick BC, Kalcevich C. Disability management outcomes in the Ontario long-term care sector. *Journal of Occupational Rehabilitation* 2010; 20(4): 481-488.

**Presentations:**

Mustard CA, Smith P, Tompa E, McLeod C, Koehoorn M. Examining trends in the incidence and cost of workers' compensation claims in the long-term care sectors of British Columbia and Ontario. 28-29 May 2010: Toronto, ON: Canadian Association for Research on Work and Health Conference.

Mustard CA, Smith P, Tompa E, Petch J, McLeod C, Koehoorn M. Trends in the incidence and cost of workers' compensation claims in the Ontario and British Columbia long-term care sectors. 11 Jun 2010; WorkSafeBC,

**Funding:**

Mustard CA, Tompa E, Smith PM, Koehoorn M, McLeod C. Examining trends in the incidence and cost of workers' compensation claims in the Ontario and British Columbia long term care sectors: 1998-2007. WorkSafeBC: \$327,500 (2008-2011)

## **A Prediction Rule for Duration of Disability Benefits in Workers With Non-Specific Low Back Pain (2105)**

**Project Status:** Ongoing

**Introduction:** The ability to distinguish between injured workers at high and low risk of chronicity and recurrence is very appealing and could lead to improved outcomes and cost savings. Some prediction rules have been developed for low back pain, although they have not been validated in different jurisdiction. This study aims to build prediction rules and a computer-based prediction tool for key disability outcomes for injured workers in Ontario with low back pain lost time claims.

### **Objectives:**

- To study what combination of factors measured early in the life of the claim predicts whether a worker will remain on benefits beyond six months post-accident.
- To study what combination of factors best predicts the length of the first episode of wage-replacement benefits.
- To study what combination of factors best predicts who may have a recurrence of benefit receipt, after the first episode has ended.
- To study what combination of factors best predicts how long it will be until a recurrence, after the first episode has ended.
- To study whether the same combination of factors predict the length of first episodes and of subsequent episodes of wage replacement (and of the gaps between them).

**Methods:** To answer the five research questions we will access WSIB administrative data and the IWH Readiness for Return to Work Cohort (R-RTW). Each question will be answered by developing a statistical predictive model for the specific outcome. The first block will consist of variables routinely collected and entered in the WSIB claims database for administrative purposes. A second block will consist of additional variables from the IWH's R-RTW prospective cohort study, in which workers in the first 4 weeks of work disability were included and were administered more elaborate, scientifically established, questionnaires over a two year period. Stakeholders will be involved in the development of the final products through focus group meetings and workshops.

**Results:** Data is yet to be analysed. Data on over 6300 workers has been entered and are linked with healthcare and pharmaceutical databases. Researchers from Liberty Mutual Research Institute for Safety have expressed an interest in collaborating to validate some of their algorithms in our pharmaceutical database.

**Researchers:** Ivan Steenstra (Principal Investigator), Ben Amick, Jason Busse, Andrea Furlan, Sheilah Hogg-Johnson, David Tulusso, Renée-Louise Franche (Vancouver General Hospital)

**Stakeholder Involvement:** WorksafeBC, Metropolis, settlement organizations, other researchers from BC region

**Potential Audiences and Significance:** The key user groups for this prediction tool will be disability managers, WSIB case managers and Return to Work (RTW) specialists and human resource professionals/employers. All these groups are interested in a reliable predictor of time until an injured worker with low back pain is able to return to work.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

### **Funding:**

Steenstra I, Amick BC, Busse, J, Franche R-L, Furlan A, Hogg-Johnson S, Tulusso D. A prediction rule for duration of disability benefits in workers with non-specific low back pain. WSIB RAC: \$79,692 (2010-2011)

## **Work Disability Trajectories and Claim Duration in Ontario Under Three Workers' Compensation Legislations (2115)**

**Project Status:** Ongoing

**Introduction:** Since the early 1990s, the time on benefits has been increasing for Ontario workers' compensation claims. Over the last decade, there has been a dramatic increase in the number of total compensated days per lost time claim and an increase in the rate of claims remaining active and open for extended periods of time. This trend is in contrast to the trend of declining claim rates experienced over much of the 1990s.

This study will provide information that will help better understand how changes in labour-market opportunities have contributed to the increase over a period of approximately 20 years. Specifically, it will use information from a linked database to investigate the labour-market earnings patterns of short- and long-term disability claimants from three different time periods and receiving benefits under three different programs (the pre-1990 Bill 101 program, the 1990-1997 Bill 162 program, and the post-1998 Bill 99 program). Based on the analysis of three successive claimant cohorts, the study will provide invaluable information to better understand the individual and contextual factors that contribute to labour-market engagement and earnings recovery, and how these have changed over time.

### **Objectives:**

- The analyses will address the following research questions:
  1. How has the composition of short-term (temporary disability) and long-term (permanent impairment) disability claimants changed over three time periods in terms of gender, age bracket, region of residence, and pre-accident earnings?
  2. How have labour-market earnings recovery changed over the three time periods for short-term and long-term disability claimants?
  3. Is there a significant difference in time on benefits across the three time periods after accounting for demographic characteristics?
  4. What are the predictors of the degree of earnings recovery? Specifically what role does cohort/accident year, degree of permanent impairment (for long-term disability claimants), and benefits receipt have on earnings recovery after controlling for age, gender, region of residence and other contextual factors?

**Methods:** This study draws on the linkage of a 20% sample of short- and long-term WSIB claimants from 1986, 1992 and 1998 to a Revenue Canada tax file that was undertaken in 2007. The tax file is called the Longitudinal Administrative Databank (LAD) and contains a simple random sample of 20% of Canadian tax filers. Analyses will draw on two methodological approaches. The first is a claimant-control matching process in which claimants will be matched with uninjured controls in the LAD, based on age, gender, pre-accident earnings trajectories and region of residence. Claimants from the three time periods will also be matched, based on the same characteristics.

Descriptive analysis will consist of a difference-in-differences approach in which within and across time period differences in earnings recovery will be compared, i.e., claimants will be compared to their matched controls (the first level of differences) and these differences will be compared to similar claimants from the two other time periods (the second level of differences). Regression modeling techniques will be used to estimate the significance and magnitude of factors that bear on labour-market engagement and earnings recovery.

**Results:** Held advisory committee meeting and revised ethics review for LAD-RTW project. Extracted additional WSIB data needed for analysis. Prepared descriptive analysis based on claimant-control matching. Presented descriptive analysis at a conference and begin preparation of manuscript for journal submission.

**Researchers:** Emile Tompa (Principal Investigator), Ben Amick, Sheilah Hogg-Johnson, Heather Scott-Marshall

**Stakeholder Involvement:** An advisory committee has been set up consisting of three senior policy makers, two from the WSIB (Judy Geary and Joe Sgro) and one from the Ministry of Labour (Nicholas Robins)

**Potential Audiences and Significance:** This study is relevant to the WSIB, the Ontario Ministry of Labour, and injured worker representatives. Researchers interested in work disability outcomes will also be interested in the substantive findings as well as the methods used in the analysis.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

**Presentations:**

Tompa E, Scott-Marshall H, Fang M, Mustard CA. Work disability trajectories after permanent impairment from a work accident. June 2010; Athens, Greece: 9<sup>th</sup> International Conference on Health Economics, Management and Policy.

Tompa E, Scott-Marshall H, Fang M, Mustard CA. Work disability trajectories after permanent impairment from a work accident. Aug 2010; Anger, France: International Conference on Health Economics, Management and Policy.

**Funding:**

Tompa E, Hogg-Johnson S, Amick BC, Scott-Marshall H. Work disability trajectories and claim duration in Ontario under three workers' compensation legislations. WSIB RAC: \$141,088. (2009-2011)

## **Examining Determinants and Consequences of Work-injuries Among Older Workers (2120)**

**Project Status:** Ongoing

**Introduction:** The labour force in Canada is aging. There are currently over 315,000 people aged 55 years or older working in British Columbia. This number is likely to increase as the percentage of people aged over 50 who are working or looking for work is increasing. In addition, older workers are pushing back plans to retire, or are unsure when they will retire. We know from other jurisdictions that although older workers don't get injured as much as younger workers, when they do get injured these injuries are more severe, more likely to be fatal, require more health care and longer time off work. Unfortunately, we don't know the extent to which different individual or work-related factors contribute to these findings.

### **Objectives:**

- To examine the trends in the incidence and intensity of lost-time claims among older workers over time, and relative to workers of younger age groups.
- To examine trends in the distribution of injury claim types sustained among older workers and if these patterns have changed over time.
- To determine if similar types of injury claims require similar amounts of health care and time off work across age groups; and the effect that occupation and industry, as well as pre-existing health status have on health care and time off work differences among age groups.

**Results:** Work for this project has been delayed as we were working through data access issues with PopDataBC. These issues have now been resolved and work has begun on the project.

**Researchers:** Peter Smith (Principal Investigator), Amber Bielecky, Dorcas Beaton, Sheilah Hogg-Johnson, Selahadin Ibrahim, Cameron Mustard, Ron Saunders, Heather Scott-Marshall, David Toluoso, Mieke Koehoorn and Christopher McLeod (University of British Columbia)

**Stakeholder Involvement:** We have formal collaborations with various agencies in British Columbia: Fraser Health, the United Food and Commercial Workers Union, and the BC Injury Research and Prevention Unit

**Potential Audiences and Significance:** The results of this research will provide a comprehensive knowledge base on the current work injury burden and associated outcomes for older workers in British Columbia. This knowledge base will serve as a foundation for future decisions concerning the directions of additional primary research on older workers. The results of this project will also provide preliminary evidence for policy development related to the working conditions and the prevention and consequences of work-injuries among older workers in British Columbia. This knowledge base will lead to the generation of understandable and actionable key messages; and the ongoing commitment among key stakeholders into future research projects examining – and importantly intervening in – the labour market conditions, the prevention of work injuries and the consequences of these injuries among older workers in British Columbia.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported

### **Presentation:**

Smith P. Occupational demands moderate the relationship between age and length of absence following a work injury. 2-3 Sep 2010; Angers, France. WDPI 2010: The First Scientific Conference on Work Disability Prevention and Integration.

### **Funding:**

Smith P, Beaton DE, Hogg-Johnson S, Ibrahim S, Koehoorn M, McLeod C, Mustard CA, Saunders R, Scott-Marshall H, Toluoso D. Examining determinants and consequences of work-injuries among older workers. WorkSafeBC: \$225,000 (2009-2011)

## **Critical Review of Literature on Experience Rating and Workers' Compensation Systems (2135)**

**Project Status:** Ongoing

**Introduction:** A critical literature review locates an enquiry about a particular topic within the context of what has been previously studied. This review will investigate qualitative and quantitative literature on the topic of experience-rating, with a focus on how they inform understanding of workers' compensation systems, with a particular focus on Ontario. Academic peer-reviewed literature as well as 'grey literature' such as policies, news reports and trade journals will be included.

**Objectives:**

- To examine what is known about how experience-rated workers' compensation premiums motivate employer and worker behaviour and what convictions may not be well supported by evidence.
- To examine what is known about the effects on workplace health and safety of experience-rating workers' compensation premiums.
- To study how the design of premium setting vary across different workers' compensation systems.
- To study how the financial incentive programs of other benefits and insurance programs inform understanding about premium-setting in workers' compensation.

**Methods:** The review is divided into two inter-related parts by researchers with specialized methodological training and whose own substantive research focus is occupational health and safety. A review of qualitative (QL) literature will be led by Ellen MacEachen and carried out by Liz Mansfield. A review of quantitative (QN) literature will be led by Emile Tompa and carried out by Christina Kalcevich. Marion Endicott will provide in-house expertise on key areas for investigation of experience-rating systems and outcomes, as well as interpretation. A research assistant will help to search for and retrieve data. Content experts will be consulted along the way to help us to refine our search and consider our findings. The primary focus will be on English-language academic peer-reviewed publications. Grey literature will be drawn on where the analysis identifies questions or gaps. Monthly full-team meetings will be held to explore points of synergy for understanding the main research question. Sub-team meetings will be held in-between full-team meetings. A common search strategy will help to capture literature by topic. An initial half day 'kick off' meeting with all team members (and possibly a content expert) will position the initial search strategy.

**Results:** None to date.

**Researchers:** Ellen MacEachen, Emile Tompa, Marion Endicott (Principal Investigator's) (Injured Workers' Consultant), Kim Cullen, Christina Kalcevich, Quenby Mahood, Liz Mansfield, Natalie Yeung

**Stakeholder Involvement:** This project includes injured worker community involvement throughout project development and execution, beginning with RAACWI Team Meeting discussions. Community representatives are involved in the design and execution of project.

**Potential Audiences and Significance:** This project is relevant to the injured worker community, but is particularly important to the WSIB, as they are currently reviewing their experience rating programs. The study will be applicable to all jurisdictions in Canada, United States and elsewhere where workers' compensation insurance is experience rated.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

**Funding:**

MacEachen E, Tompa E, Endicott M. (Co-PIs) A critical review of literature on experience-rating in workers' compensation systems. Community-University Research Alliance Grant, SSHRC: \$59,998 (2010-2011)

## **Evidence Guides and Tools**

As in Primary Prevention, the research we conduct in work disability management and prevention may lead to the evaluation of specific interventions and to the development of tools or decision aids.

In this suite of projects we describe the evaluation of one return-to-work intervention and the development of tools or metrics for use with long term claims. IWH researchers are also contributing to a Canadian based international training initiative for young researchers interested in work disability prevention.

## **Red Flags\Green Lights: A Multiple Stakeholder Evaluation of the Uses of a Return to Work Problems Guide (2130)**

**Project Status:** Ongoing

**Introduction:** Return-to-work (RTW) is a complex process and dependent on the coordination of different stakeholders. RTW processes can break down due to poor communication among different parties and system 'blind' spots that leave workers unsupported. In May 2009, we developed a Guide to help decision-makers to identify RTW problems and manage them before they escalate. The Guide, called "Red Flags/Green Lights: A Guide to Identifying and Solving Return-to-Work Problems", is a hands-on product developed from a study of why workers do not return to work as expected.

### **Objectives:**

- To evaluate the implementation process of this Guide among varied RTW stakeholders: workplaces, healthcare centre, injured worker support group, legal clinic, union and prevention partner.

**Methods:** This study examines the implementation of the Guide among seven varied RTW stakeholders who have partnered with the study to 'test drive' the guide. These are two workplaces, a healthcare centre, an injured worker support group, an occupational health legal clinic, a union and a prevention partner. These stakeholders' practical utilization of the Guide will be tracked for six months by interviews and focus groups. We will evaluate how the Guide is used, under what circumstances, and for what purposes. At the end of the study, a Partner meeting will be held to describe the study results and consider what kinds of RTW needs exist among different RTW decision-makers.

**Results:** Study start was delayed to April 1 due to coordinator external commitments. Some workshops were conducted and follow-up interview #1 was started. One workshop was delayed due to hospital ethics process and another is a new study partner. Follow up interviews for #1 is ongoing.

**Researchers:** Ellen MacEachen (Principal Investigator), Siobhan Cardoso, Kiera Keown, Agnieszka Kosny, Liz Mansfield, Diana Pugliese

**Stakeholder Involvement:** This study contributes to the development and fostering of partnerships along workplaces, healthcare practitioners, legal clinics, injured worker groups, prevention partners and unions through the evaluation of this research-based product that directly addresses their RTW decision-making needs. This evaluation study will help us (researchers) and other interested organizations to deliver useful results and products to workplaces and other stakeholders.

**Potential Audiences and Significance:** This study contributes to the development and fostering of partnerships along workplaces, healthcare practitioners, legal clinics, injured worker groups, prevention partners and unions through the evaluation of this research-based product that directly addresses their RTW decision-making needs. This evaluation study will help us (researchers) and other interested organizations to deliver useful results and products to workplaces and other stakeholders.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

### **Presentation:**

MacEachen E, Kosny A, Chambers L, Keown K. The Red Flags/Green Lights Guide for challenging return-to-work situations. 20-22 Sep 2010, Los Angeles, CA: International Forum on Disability Management.

### **Funding:**

MacEachen E, Kosny A, Mansfield L, Keown K. Red flags/green lights: a multiple stakeholder evaluation of the uses of a return to work problems guide. WSIB BTG: \$39,969 (Jan'10-Dec'10)



## Development and Testing of the DASH Outcome Measure - DASH Instrument (0425)

**Project Status:** Ongoing

**Introduction:** This multi-year project involves the development and ongoing testing of the DASH, a 30-item self-completed questionnaire of upper-limb disability and symptoms, designed at IWH in collaboration with the American Academy of Orthopaedic Surgeons (AAOS) to be used as an outcome measure for people with any disorder of the upper limb. It is now in world-wide use. In 2003 the 11-item QuickDASH was released. Summary documents were placed on the Web and published in *At Work*. In 2004 there was a specific testing of the QuickDASH in clinical and research settings and in 2005 the QuickDASH was published in the *Journal of Bone and Joint Surgery*.

**Objectives:**

- To continue work with the DASH and modern measurement theory
- DASH benchmarking
- User's survey analysis and synthesis.

**Results:** The DASH Manual was updated in 2010 and is currently going through print layout and final editorial. It is planned to be released in the first quarter of 2011. A review article is being prepared after the manual has been released. A paper focused on interpretability was submitted for peer-review in the *Journal of Clinical Epidemiology* and received notice of acceptance.

Initial work was completed on Rasch/IRT and will continue in 2011. This work will be integrated into factor analysis. The DASH as an indicator of "Recovery" was examined in the paper published by *Journal of Clinical Epidemiology*.

**Researchers:** Dorcas Beaton (Principal Investigator), Claire Bombardier, Kim Cullen, Sheilah Hogg-Johnson, Carol Kennedy-Yee, Philip Kiff, Peter Smith, Peter Subrata, Sherra Solway (Toronto Rehabilitation Institute)

**Stakeholder Involvement:** Consultation with clients, clinicians, educators, professional organizations, regulatory bodies and other researchers have and will continue to occur throughout the development and fulfillment of these projects.

**Potential Audiences and Significance:** The DASH is now available in 14 languages. Professional organizations such as the Canadian Physiotherapy Association (CPA), AAOS and regulatory colleges also have demonstrated their support through use of the DASH, as has the WSIB. Orthopaedic implant manufacturers have contacted the Institute regarding the use of the DASH in trials of new products. Anyone who is interested in outcome measurement to reflect the client's perspective could be a potential user. The manual has enjoyed equal popularity and utility.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

**Publication:**

Kennedy CA, Beaton DE, Solway S, McConnell S, Bombardier C. *The DASH Outcome Measure User's Manual*, 3<sup>rd</sup> Edition. Toronto, ON: Institute for Work & Health; 2011.

## **KTE Focus on Prevention and Management of Work Disability**

**Introduction:** Clinical provider groups who treat patients with MSDs are potential audiences for the research evidence that IWH generates. Some providers practice outside the more traditional clinical settings and focus on the work/health interface. We have targeted these groups as potential audiences for IWH research messages specifically: family physicians, and providers who work within or in close association with workplaces (in primary/secondary prevention roles and/or return to work, delivering treatment and/or disability management) including physiotherapists (PT), kinesiologists (Kin), occupational health nurses (OHN), occupational therapists (OT) and chiropractors (DC) and ergonomists.

There are a number of research messages from IWH and the Cochrane Back Review Group that are relevant and useful to these groups (management of back pain, disability management and RTW). Equally, there is a practice expertise and knowledge that these groups possess that is useful and relevant to IWH as research and knowledge transfer activities are planned and implemented. We have created a number of “informal opinion leader” or “educational influential” (EIs) networks with these clinical groups. Professional colleges who regulate these clinical disciplines are partners in these networks. We have identified and met with EIs in OHN, kinesiology, PT, OT and family medicine.

**Audience:** Family physicians, physiotherapists, occupational health nurses, kinesiologists, occupational therapists, chiropractors, ergonomists.

**Focus and Messages:** Evidence-based management of back pain and evidence on effective RTW.

### **Deliverables:**

Discipline-specific, in-person knowledge transfer and exchange sessions.

Specific project-based participation of members of the EI networks.

Routine information dissemination to EI networks.

Maintain current database of all EIs with practice profile and contact information.

Annual update and feedback sessions with EI organizational partners.

Share EI networks with CRE partners via KTE Hub.

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## Foundation Programs

There are two programs within the Research Program whose scope of activities may cross cut all the research we undertake at the Institute. These two programs, Data & Information Systems and Systematic Reviews have their own methodological foci, and provide this expertise to all relevant research projects in the Institute, hence the term foundation programs.

The first of two foundation programs at the Institute is Data & Information Systems. The success of Institute research, including the productivity of our scientists, rests to no small extent on expertise provided by the staff of this program. This team of statisticians and programmers/analysts provides statistical consulting and information technology solutions to all the other research programs.

Reliable measurement methods and rigorous analytic approaches are vital to research excellence. Among other things, they help scientists clarify the relationship between exposures and outcomes in epidemiologic studies.

Our data sources include current administrative data from the Workplace Safety & Insurance Board (WSIB). Program staff are constantly refining the Institute's ability to use this resource to its maximum capacity. They also develop and maintain our repository of historical WSIB databases as a potential resource for future research projects. Our access to WSIB administrative data provides scientists with some unique opportunities.

Program staff are very responsive to the needs of other Institute researchers, and as a result, are highly regarded by our scientists and staff in the other program. Besides being a source of methodological expertise and data management, program staff have also taken the lead in other areas. These include the exploration, development and implementation of research methodologies with new approaches to accessing, collecting, analyzing, interpreting, storing and maintaining the security of our data.

This team also provides continuity and training across the organization in maintaining issues of privacy, confidentiality and data security. Projects listed below which have an internal focus are a small part of the portfolio of this group as program staff are primarily involved in projects described elsewhere.

### 2010 Quick Statistics

Completed projects (1)

Ongoing projects (10)

New Projects (0)

Papers published or in press (10)

Peer review papers submitted (0)

Presentations of results and stakeholder consultations (2)

External grants awarded (7)

## **Workplace Safety & Insurance Board Data Routine Statistics (0845)**

**Project Status:** Ongoing

**Introduction:** The Workplace Safety & Insurance Board of Ontario routinely collects claims-based data for administrative and reporting purposes. Through a special research agreement with the WSIB, the Institute for Work & Health can access and use much of the WSIB routinely collected data for research purposes.

**Objectives:**

- To continually develop and maintain expertise in the data holdings of the WSIB.
- To aid Institute researchers by providing information on the data holdings and their potential use for research projects.
- To respond to ad hoc requests for data extractions required for project planning purposes, etc.
- To develop internal capacity to use WSIB data and introduce three new staff to list of those who can extract data.
- To provide training.
- To develop set of core competencies re: WSIB data.
- To position IWH to provide assistance to external researchers (work with IWH, WSIB RAC, WSIB Privacy Office).

**Methods:** The methods change depending upon the request. Data extractions largely involve creating SAS programs which tap data stored in a number of large files stored either on a mainframe computer or on tape.

**Results:** Interface was improved in 2009. Most WSIB data extractions are tracked under specific project numbers. Counting 'critical injuries over time' for Ron Saunders, 'hour of the day that accident happened' for Cameron Mustard and 'independent medical examinations' for Jason Busse.

**Researchers:** Sheilah Hogg-Johnson (Institute Coordinator), Arold Davilmar, Selahadin Ibrahim, Christina Kalcevich, Hyunmi Lee, Peter Smith, Peter Subrata, Michael Swift

**Stakeholder Involvement:** WSIB through our research and master agreements; Possible external researchers from universities, CREs etc.

**Potential Audiences and Significance:** This IWH research activity is largely of interest to internal Institute colleagues, but has potential interest to WSIB stakeholders also. Data extractions will be conducted solely for Institute researchers as per our research agreement with the WSIB.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Development of an Instrument Database and Questionnaire Design Tools (0835)**

**Project Status:** Ongoing

**Introduction:** Several questionnaire instruments appear in Institute studies time and time again (e.g., SF-36, DASH, Chronic Pain Grade, Job Content Questionnaire, Effort-Reward Instrument). The purpose of this project is to create Microsoft Access modules for the most commonly used questionnaires which can be used for a variety of purposes such as data entry (when the data are collected via pencil and paper), Computer Assisted Telephone Interviewing (CATI), direct data collection in clinical settings etc. To date 45 instruments have been created for the questionnaire modules.

**Objectives:**

- To develop multi-purpose data entry modules for the most commonly used questionnaire instruments at IWH.
- To develop tools for use in designing data entry by allowing research staff to copy the instruments to another database.
- To develop a review section for the instruments, including: the conceptual basis in developing the instrument, an operational description of the instrument (format and scoring), its' psychometric properties (responsiveness, reliability and validity), IWH staffs' experience with using the instrument in their research, and the original and related bibliographic references.

**Methods:** Used Access 2000 Database with Visual Basic programming language.

**Results:** Installed two instruments: Organizational Policies and Practices and Operational Performance Metric

**Researchers:** Michael Swift (Institute Coordinator), Sheilah Hogg-Johnson

**Stakeholder Involvement:** External Researchers.

**Potential Audiences and Significance:** The data entry aspects of the proposed system will largely be of interest to other researchers at IWH.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Data Dictionary (0301)**

**Project Status:** Ongoing

**Introduction:** The Data Dictionary project is an attempt to create a searchable catalogue that documents the tools, resources and information on areas of research at the Institute. Staff initiating research at the Institute will be able to access this information, thereby limiting duplication of effort. Information will typically include the concept, definition, data access (if applicable), previous IWH work, and links to other sources of information on the concept. A beta version of limited information had been completed.

**Objectives:**

- To identify areas and subjects where specific researchers at the Institute may contribute information.
- To create a template for the presentation of information within the Data Dictionary.
- To display this information and together with IWH staff, work towards agreement on the structure of the Data Dictionary (i.e., how best to categorize the information within it).
- To cross reference information where appropriate.
- To maintain the dictionary.

**Methods:** To identify areas and subjects where specific researchers at the Institute may contribute information. To create a template for the presentation of information within the Data Dictionary. To display this information and together with IWH staff, work towards agreement on the structure of the Data Dictionary (i.e., how best to categorize the information within it). Cross reference information where appropriate. Maintain the dictionary.

**Results:** We developed terms of reference for developing a documentation system for IWH data holdings. An inventory of datasets (SAS, SPSS, Stata) on the IWH servers was taken. A conceptual framework for describing the different stages of datasets from raw (first extracted from administrative sources or first collected for primary data) down to project specific and then to aggregate level, or statistical results was developed. We have agreed to prepare documentation on data holdings and original data extractions. A template for documenting data holdings has been prepared and is currently being piloted.

**Researchers:** Sheilah Hogg-Johnson (Institute Coordinator), Amber Bielecky, Arold Davilmar, Jacob Etches, Paolo Maselli, Peter Smith, Michael Swift, Grant Yao

**Stakeholder Involvement:** Ministry of Labour Data Diagnostic Unit: potential audience and user of Dictionary - potential contributor around sources/uses of data.

**Potential Audiences and Significance:** Largely of internal interest, but may be some specialized interest with data users within MoL and WSIB.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Keyword Project (0311)**

**Project Status:** Ongoing

**Introduction:** The keyword project is an attempt to create a common nomenclature for describing content of IWH research projects. This nomenclature is used for a variety of projects including: the web, Refman and working papers. It is also generated using MeSH vocabulary and tailored to suit IWHs unique research foci.

**Objectives:**

- To identify a frequency of terms that represent our work at the IWH.
- To get a consensus agreement on the structure of the tree.
- To flush out the tree and develop layers which would be dependent on the various uses.
- To cross reference the tree structure.

**Methods:** Develop set of terms for IWH web search engine. Tag all material on Website. Tag all other material within IWH e.g. Refman, Projects. Edit and maintain.

**Results:** All IWH publications were key-worded using a web based nomenclature. Monitoring of search terms for the web continued and the uploading of articles was moved to a quarterly cycle. A list of synonyms for our website search engine and for our internal Refman database was begun.

**Researchers:** Quenby Mahood (Institute Coordinator), Rachel Couban, Emma Irvin, Philip Kiff, Michael Swift

**Stakeholder Involvement:** Stakeholder involvement will occur through search terms entered into the new website and any feedback we may receive on our advanced search feature options on the new IWH website, ensuring our research is easily located on our website.

**Potential Audiences and Significance:** This project is primarily focused on compiling and facilitating access to information within the IWH based on a common structured language. The product should be of interest to internal staff only, but would greatly assist us in responding to external requests for information from stakeholders.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.



## **Integrated Information Database (0307)**

**Project Status:** Ongoing

**Introduction:** The genesis of this project was the need to streamline the accountability reporting of project accomplishments and activity plans for internal and external audiences. An initial review of the requirements indicated that many of the same data elements and information were used across different reports. A comprehensive database that contained all of these information items and could easily be manipulated to allow for customization was proposed. The integrated information database was conceived as a tool that could reduce repetition in data gathering, increase efficiency and accuracy in reporting and improve overall project tracking and management. This project was initiated in 2001 and now comprises three phases. The first phase was the tracking of time spent on individual projects and included linking the 'hours' part of the database with the Institute's secure budget and accounting system. The second phase encompassed all elements of detailed project descriptions. Two databases were created to meet the needs of each phase: Staff Hours Reporting Database, developed by Dylan Maccarone, for the first objective and the IID Database, developed by Michael Swift, for the second objective. The third phase contained CV type information on Institute staff and affiliates and was included in the IID Database. The present systems are in the ongoing maintenance phase of the database life cycle.

### **Objectives:**

- To develop an efficient computer-based tool for collecting information on project and staff activity.
- To create a central electronic repository of all project related information.
- To improve the efficiency of project reporting.
- To improve the overall tracking and management of project activities and milestones.

**Methods:** Building and testing of multi-user databases using MS-Access 2000 Database in consultation with users.

**Results:** Made modifications to Journal Titles as requested by Linda Harlowe. Fixed errors in Year End Report.

**Researchers:** Emma Irvin (Institute Coordinator), Linda Harlowe, Dylan Maccarone, Michael Swift

**Stakeholder Involvement:** External researchers.

**Potential Audiences and Significance:** The development of the database itself will primarily be of interest to other research organizations who face similar reporting challenges as IWH.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Methodological Developments in Systematic Reviews (SR) (0951)**

**Project Status:** Ongoing

**Introduction:** As part of the IWH's commitment to continuously improve the field of (SR) methodology, we proposed in 2007 to undertake the following methods projects:

- A - Meta-Analyses of Prevalence
- B - Prevention Review Methodology: Evaluation of Non-clinical Interventions
- C - Methods Workshops: a) Quality Appraisal tools
- D - Stakeholder Development in Prevention Reviews
- E - Literature Search Strategies for Grey Literature

### **Objectives:**

- A. SR of meta-analysis of prevalence studies published in the last 5 years for any health condition.
- B. To publish a paper intended to underline the challenges and solutions of adapting the established systematic review methodology to a non-clinical literature.
- C. To run a series of workshops to discuss aspects of the systematic review methods; the first workshop will be to discuss Quality Appraisal tools.
- D. To discuss the various models of stakeholder engagement throughout the process of writing a systematic review and their associated benefits.
- E. To systematically search and review relevant grey literature on the process and implementation of participatory ergonomics (PE) interventions in workplaces. To explore and document various methods of searching and obtaining grey literature on the topic of (PE) interventions. To provide recommendations about the use of grey literature in systematic review methods.

### **Results:**

- B. A series of papers were written, submitted and accepted for a special issue of the Journal of Occupational Rehabilitation.
- D. A stakeholder development paper focusing on our experiences in British Columbia and Manitoba was submitted to a peer reviewed journal.
- E. A paper on literature search strategies for Grey lit was completed and was submitted in 2010.

**Researchers:** Andrea Furlan, Emma Irvin, Kiera Keown, Quenby Mahood (Institute Coordinators), Ben Amick, Rachel Couban, Kim Cullen, Natasha Kyle, Dwayne Van Eerd, Amber Bielecky, Jill Hayden (Dalhousie University), Fatima Lakha (Toronto Western Hospital), George Tomlinson (University of Toronto & University Health Network)

**Stakeholder Involvement:** External researchers, WSIB, clinicians, policy-makers.

**Potential Audiences and Significance:** Methods groups of the Cochrane Colloquium and other researchers conducting systematic reviews.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

### **Publications:**

Furlan AD, Reardon R, Weppler C. Opioids for chronic non-cancer pain: a new Canadian practice guideline. CMAJ 2010;182:923-930.

Furlan AD, Carnide N. Opioids for workers with an acute episode of low-back pain. Pain 2010 Aug 18;151(1):1-2.

Irvin E, Brewer S, Amick BC. Systematic reviews in disability management and the prevention of occupational injuries: Moving from science to practice. Journal of Occupational Rehabilitation 2010; 20: 123-126.

Irvin E, Van Eerd D, Amick III BC, Brewer S. Introduction to the special section: Systematic reviews for prevention and management of musculoskeletal disorders. *Journal of Occupational Rehabilitation* 2010; 20(2): 123-126.

Kennedy CA, Amick BC, III, Dennerlein JT, Brewer S, Catli S, Williams R, et al. Systematic review of the role of occupational health and safety interventions in the prevention of upper extremity musculoskeletal symptoms, signs, disorders, injuries, claims and lost time. *J Occup Rehab* 2010 Jun;20(2):127-62.

Robson L, Stephenson C, Schulte P, Amick B, Chan S, Bielecky A, et al. A systematic review of the effectiveness of training & education for the protection of workers. Toronto: Institute for Work & Health; 2010.

Robson LS, Bigelow PL. Measurement properties of occupational health and safety management audits: a systematic literature search and traditional literature synthesis. *Can J Public Health* 2010 Mar;101(Suppl 1):S34-S40.

Tullar JM, Brewer S, Amick III BC, Irvin E, Mahood Q, Pompeii L, et al. (with Wang A, Van Eerd D) Occupational safety and health interventions to reduce musculoskeletal symptoms in the health care sector. *Journal of Occupational Rehabilitation* 2010; 20(2):199-219.

Tompa E, Dolinschi R, de Oliveira C, Amick III BC, Irvin E. A systematic review of workplace ergonomic interventions with economic analyses. *Journal of Occupational Rehabilitation* 2010; 20(2): 220-234.

Van Eerd D, Cole D, Irvin E, Mahood Q, Keown K, Theberge N, et al. Process and implementation of participatory ergonomic interventions: a systematic review. *Ergonomics* 2010 Oct;53(10):1153-66.

#### **Presentations:**

Bombardier C. Evidence Based Medicine, Systematic Reviews and the Cochrane Collaboration. 27-27 Jan 2010; Belgium. Institute for Work & Health/Abbott 3E - Systematic Review Workshop.

Bombardier C, van Eerd D, Furlan AD, Irvin E. Evidence based medicine, systematic reviews and the Cochrane Collaboration. 26-27 Mar 2010; Lisbon, Portugal. Institute for Work & Health/Abbott 3E - Systematic Review Workshop.

Van Eerd D, Irvin E, Cole DC, Amick BC, Mahood Q, Gibson J, Keown K, et al. A systematic review of KTE Practices: Challenges in the search and relevance steps. 18-22 Oct 2010; Keystone, Colorado; Joint Colloquium of the Cochrane & Campbell Collaborations.

## **Participatory Ergonomic Tool Development (3100)**

**Project Status:** Ongoing

**Introduction:** Musculoskeletal disorders and injuries (MSDs) are a leading cause of lost time injury claims and lost productivity in Canadian workplaces. This places a significant burden on the health of Canadians and therefore on the healthcare and compensation systems. The physical risk factors for MSDs can be reduced through improved ergonomics. One emerging approach to ergonomic interventions is to engage workers in the process of identifying and solving ergonomic risks – called participatory ergonomics (PE). PE interventions are effective in reducing MSDs and their impact. PE entails including employees in hazard identification, solution development and solution implementation.

A recent systematic review, examining the process and implementation of participatory ergonomics (PE), engaged stakeholders from Ontario, British Columbia and Manitoba. The review of peer-reviewed and grey literatures provided practitioners with a synthesis of best practices for implementing PE interventions including key barriers and facilitators of the PE process. Upon review completion, traditional KTE dissemination activities occurred and stakeholders across Canada requested a PE tool that supports PE program initiation and sustainability, for use by practicing health and safety professionals and workplace parties. Institute for Work & Health researchers and knowledge transfer and exchange associates have been working with stakeholders on the tool design.

### **Objectives:**

- To work with our educationally influential (EI) networks in healthcare and ergonomics and other stakeholders to: (1) develop and evaluate the development process for a PE tool that could be used by health & safety practitioners to initiate PE programs for workplaces; and (2) disseminate and evaluate the uptake of the PE tool.

**Methods:** The study will be an open cohort followed for 12 months with data collection via online surveys at baseline, 3, 6 and 9 months. Study participants will be recruited in to the cohort for the first 6 months so there is at least 3 months of follow-up possible for each participant. The cohort will consist of all stakeholders from British Columbia who download the PE guide from a host website.

**Results:** PE tool was developed and we met with advisory committee to agree on the work plan and identify stakeholder network. Met with web developer to design web surveys (on host website or using survey site e.g. Survey Monkey). Disseminate PE guide broadly in British Columbia, send link to website to allow participants to download the PE guide. Prepare evaluation materials (online survey and database for data collection). Funding received from WorkSafeBC. Completed data analysis.

**Researchers:** Dwayne Van Eerd (Principal Investigator), Donald Cole, Emma Irvin, Kiera Keown, Shane Dixon (University of Waterloo), Judy Village (University of British Columbia)

**Stakeholder Involvement:** In Ontario, kinesiology (EIs), ergonomists, occupational therapists plus additional stakeholders from the PE process and implementation systematic review will be consulted for various tool development and implementation steps. In addition stakeholders identified during the systematic review from British Columbia and Manitoba will be consulted during various stages.

**Potential Audiences and Significance:** Practitioner stakeholders, WSIB, employers, and labour groups will be interested in improved MSD prevention interventions that such a tool would facilitate. Furthermore KT practitioners and knowledge dissemination organizations will be interested in our approach.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability

### **Funding:**

Van Eerd D, Keown K, Cole DC, Irvin E, Amick B. Dissemination and uptake of a participatory ergonomics tool for workplaces. WorkSafeBC: \$44,925 (Jul'10-Jun'11)

## **Clinical Systematic Reviews (3105)**

**Project Status:** Ongoing

**Introduction:** While some disability can be explained by objective medical findings, many claims cannot and are defined by symptoms such as chronic pain or chronic fatigue. These latter disorders are sometimes grouped under labels such as functional somatic syndromes or medically unexplained syndromes, and the lack of clear targets for intervention presents a substantial challenge for assigning clinical intervention.

**Objectives:**

- To complete a series of narrative and systematic reviews and, when possible, meta-analyses of therapy for various medically unexplained syndromes.

**Results:** Funding initially denied based on non-compelling reasons. Decision made to resubmit to CIHR. Grant awarded. Our start date will be January 2011 when Tesha Slack will be available

**Researchers:** Jason Busse (Principal Investigator), Kiera Keown, Tesha Slack, and different groups of researchers depending on the review.

**Stakeholder Involvement:** The Institute for Work & Health will support these reviews with library services to conduct literature searches and retrieve articles, and through KTE to assist in the dissemination of research findings.

**Potential Audiences and Significance:** The impact of medically unexplained syndromes on disability management is substantial, and the results of the intended reviews will be relevant to the WSIB, private disability insurers, clinicians, and patients.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

**Funding:**

Busse J, Keown K, Soric R, Klatt I, Wilson L, Guyatt G, Montori V. Management of fibromyalgia: a systematic review of randomized controlled trials. CIHR: \$99,235 (Oct 2010- Sept 2011)

## **A Systematic Review of the Quality and Types of Performance Measures Used to Assess KTE Implementation (3110)**

**Project Status:** Ongoing

**Introduction:** Knowledge transfer and exchange (KTE) is a burgeoning organizational practice at research institutions worldwide. Funders and policy makers demand to know whether their investments are making a difference. However, the effectiveness of current KTE practices has not been routinely or consistently evaluated. KTE practitioners note the need to evaluate both how well plans are being implemented and the impact of these plans and to be able to improve KTE practices.

### **Objectives:**

- To systematically search and review the KTE literature across contexts, outcomes, KTE implementation processes to answer the following research question: Are there reliable and valid tools to apply in the assessment of KTE implementation and its impact?
- To provide a synthesis that documents/describes the tools/instruments used in assessment and evaluation (including their measurement properties) and the common elements are these tools.
- To make recommendations about common elements of KTE that are most effective; and to make recommendations about how to evaluate the impact of KTE.

**Methods:** This systematic review followed the IWH Systematic Review protocol, which include the following steps: 1. Develop question, 2. Conduct literature search, 3. Identify relevant publications, 4. Quality appraisal, 5. Data extraction, 6. Evidence synthesis.

**Results:** Received funding from CIHR, and hired a coordinator. Prepared and tested a literature search strategy. Assembled review team and formulated review question. Met with decision makers and stakeholders. Completed review for relevance (inclusion) and developed quality appraisal tool. Developed data extraction tool and initiated data extraction. Begin writing final report and held a stakeholder meeting. Planning to complete manuscript for peer-review publication.

**Researchers:** Dwayne Van Eerd (Principal Investigator), Ben Amick, Jane Brenneman Gibson, Donald Cole, Emma Irvin, Kiera Keown, David Clements (Canadian Health Services Research Foundation), John Garcia (Cancer Care Ontario), Andreas Laupacis (St. Michael's Hospital), Rhoda Reardon (College of Physicians and Surgeons)

**Stakeholder Involvement:** The decision makers (who represent the stakeholders for this project) will be updated quarterly throughout the project. In addition we will identify and meet with KTE practitioner stakeholders at a separate meeting this year.

**Potential Audiences and Significance:** A summary of this project will be produced using a four-page "Sharing Best Evidence" format and will be made available on the IWH website and via our quarterly newsletter. Stakeholders from the CHSRF and CPSO have already indicated that the websites and resources of their institutions will be available to assist in dissemination. We will also update the IWH KTE workbook "From Research to Practice" (Reardon, Lavis, Gibson; 2006) that is available on the IWH website. We will share the results with the Ontario KTE Community of Practice which has over 70 members all who are KTE practitioners and researchers. As KT Canada begins to build its presence, we will approach them to assist in dissemination of the results. In addition, specific briefings will be arranged to present the results of this study to the relevant stakeholder groups, including those who have partnered with us on this proposal. The results from this study may also be published in a variety of trade media, including professional association newsletters and business media outlets.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

### **Funding:**

Van Eerd D, Reardon R, Clements D, Laupacis A, Amick B, Irvin E, Brenneman Gibson J, Keown K, Cole DC, Garcia J. KTE Practices: A systematic review of the quality and types of performance measures used to assess KTE implementation effectiveness and impact. CIHR: \$100,000 (2009-2010)

## **Prognostic Factors for the Time Away from Work in Workers Away from Work Due to Acute Low Back Pain, an Update of a Systematic Review (3115)**

**Project Status:** Ongoing

**Introduction:** If a worker hurts his/her back, many people want to know how long it will take before he/she returns to work (RTW). Interpretation of the vast body of studies on prognostic factors for delayed RTW is difficult. The amount of information can be quite overwhelming to the actual users of scientific knowledge. Making inferences about the prognosis of RTW from these studies is difficult and this has led to much confusion. We will study the set of determinants that influence the likelihood of a RTW in case of sick leave or disability benefits due to low back pain. Based on the International Classification of Functioning, Disability and Health we distinguish between factors related to LBP, to the worker, to the job and to the psychosocial environment that influence duration of an episode of being off work. In 2005 Steenstra et al published a systematic review that has been cited by 26 papers since then and has been used by policymakers to inform their decisions.

### **Objectives:**

- To assess the evidence on factors that predict duration of time away from work in workers in the beginning of a LBP related episode of time away from work. Our hypothesis is that there are factors related to LBP, to the worker, to the job and to the psychosocial environment that influence duration of an episode of sick leave.

**Methods:** The search strategies to identify relevant studies, are influenced by those advocated by the Cochrane Collaboration and by Haynes et al. We will use an updated search strategy in PubMed, EMBASE and PsycINFO from inception of each database to the present, extracting those references already reviewed in the 2005 systematic review search. The references and citations of all relevant articles and recently published review articles will be screened for additional publications. Two reviewers will independently select studies meeting the same inclusion and exclusion criteria as the 2005 review. Two reviewers will score the quality of included studies.

**Results:** The first results of this systematic review are similar to the findings of the previous review by Steenstra et al. (2005). There is still insufficient evidence for the prognostic value of depression in this phase of work disability. This is largely caused by an insufficient number of studies that take depression or depressive symptoms into account as a potential prognostic factor but neglect to report the strength of this prognostic factor in their final model. There are a number of reasons that this may not be included: some studies don't report the outcomes if the variable turns out to be not significant in the univariate or multivariate analysis. However, we did find some indication of mental health (MH) being prognostic. If an effect was found (bivariable or multivariable) the direction is consistent and poor MH has a negative effect on low back pain (LBP) and time until return to work (RTW). MH however often was not significant when in a statistical model with other (more important) variables were included. It could very well be that it remained statistically significant in some studies since these studies had not measured other, possibly more relevant factors.

**Researchers:** Ivan Steenstra (Principal Investigator), Linda de Bruin, Sheilah Hogg-Johnson, Emma Irvin, Quenby Mahood

**Stakeholder Involvement:** Clinicians, Manitoba WCB.

**Potential Audiences and Significance:** Clinicians, researchers, employers.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

### **Funding:**

Steenstra I, Irvin E, Mahood Q, Hogg-Johnson S. Prognostic factors for the time away from work in workers away from work due to acute low back pain, an update of a systematic review. Manitoba Workers Compensation Board: \$40,361 (Jan '10-Dec '10)

## Depression in the Workplace: A Systematic Review of the Literature (3120)

**Project Status:** Completed

**Introduction:** According to results from the 2002 Canadian Community Health Survey, 3.7% of employed respondents aged 25 to 64 had experienced an episode of depression in the previous year. IWH scientists found that depression and poor physical health increase injured workers' disability. This project involves a review of the scientific literature and multiple interactions with decision makers and stakeholders, including the Ontario's Ministry of Health and Long Term Care (MOHLTC), private insurers, disability management companies, and organizations representing large employers and organized labour. The literature review will focus on men and women of working age with depression. We will include small, medium and large business sizes, as well as all sectors (services, industry, mining, forestry, etc). We will include interventions or programs that are workplace- based or that may be explicitly implemented and/or facilitated by the workplace. Such interventions or programs for workers with depression might involve the prevention of further disability, the management of depression, or the rehabilitation of workers to promote stay at work or return to work. We will measure outcomes that are relevant to employers (e.g. productivity, performance) and to the employees (e.g. improvement in depression).

### **Objectives:**

- To determine which intervention approaches to manage depression in the workplace have been successful and yielded value for employers in developed economies.

**Methods:** This systematic review followed the IWH Systematic Review protocol, which include the following steps: 1. Develop question, 2. Conduct literature search, 3. Identify relevant publications, 4. Quality appraisal, 5. Data extraction, 6. Evidence synthesis.

**Results:** The results are that no recommendation can be made for enhanced primary care delivered by a nurse or MD; enhanced psychiatric care with occupational therapy; enhanced occupational physician role; or psychological interventions. No recommendation can be made for worksite stress reduction programs, or systems integration and care management. No key messages can be derived for exercise. Three interventions showed evidence of a net economic benefit to the employer: enhanced primary care; enhanced occupational physician role; and system integration and care management. Three interventions showed evidence from a societal perspective of cost- effectiveness or net economic benefit: enhanced primary care and occupational physician role; and psychiatric care enhanced by occupational therapy.

**Researchers:** Andrea Furlan (Principal Investigator), Tesha Slack, William Gnam (Centre for Addiction and Mental Health), Ben Amick, Sandra Brouwer and Ute Bultmann (University of Groningen, The Netherlands), Nancy Carnide, Kim Cullen, Kelly DeRango (Kalamazoo, Michigan), Jane Gibson, Emma Irvin, Kiera Keown, Quenby Mahood, Robert McMaster (University of Toronto).

**Stakeholder Involvement:** Ontario Ministry of Health and Long-Term Care (MOHLTC), Ontario Ministry of Government Services (MGS), insurance providers, WSIB, disability management service providers, mental health organizations, mental health disorder survivors, organized labour, employers.

**Potential Audiences and Significance:** Clinicians, external researchers, insurance providers, WSIB, disability management service providers, employers, and labour and workplace parties.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

### **Presentation:**

Furlan A, Gnam W, Irvin E, Gibson J, Slack T. Depression in the workplace: A systematic review of the literature. 23 Nov 2010 with stakeholders, including the MOHLTC.

### **Funding:**

Furlan AD, Gnam W, Irvin E, Carnide N, Keown K, Bultmann U, Brouwer S, DeRango K, Amick B. Depression in the workplace: a systematic review of the literature. CIHR: \$110,000 (Mar'10-Aug'10)



## **KNOWLEDGE TRANSFER & EXCHANGE**

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The Institute considers Knowledge Transfer & Exchange (KTE) to be a process by which relevant research information is made available and accessible through interactive engagement with stakeholders for practice, planning and policy-making. Stakeholders frequently are involved early in the research process to provide researchers with guidance to help shape the research questions and provide information about the context in which research results are likely to be used. Stakeholders also may be involved while the research is underway and at the message extraction stage when the research has been completed. The target audiences for the Institute include policy-makers (for example federal and provincial governments, disability insurers such as WSIB), prevention parties, health and safety associations (HSAs), workplace parties (labour and employers) and clinicians.

The KTE process is supported by user-friendly materials and a corporate communications strategy that enhances the Institute's ability to communicate effectively with its stakeholders. The communication tools include our corporate newsletters, the IWH web site, media relations, special events and the marketing of specific products such as booklets and workshops. In addition, KTE actively works to build capacity in our audiences to understand and use research evidence.

The work of KTE falls into three goals:

- Build stakeholder/audience relationships to enhance the applicability and uptake of IWH research. KTE creates formal and informal networks of stakeholders to allow us to link with stakeholders over time with different research messages. KTE also provides support to the systematic review program engaging appropriate stakeholders throughout the review process.
- Enhance capacity of KTE to develop effective strategies to reach key audiences and build capacity in our audiences to make better use of research evidence in their decision-making.
- Support the Institute through effective communication strategies. This goal focuses on increasing the Institute's visibility through communications and marketing. The website continues as a major source of outreach along with the publication of our quarterly newsletter *At Work*. We have continued to pursue coverage in trade media. IWH continued its presence at conferences and workshops to enhance strategic linkages with its audiences and partners.

## Return to Work Disability Management\Labour Market Re-entry (0638)

**Project Status:** Ongoing

**Introduction:** The “Seven Principles for Successful RTW” are messages for the 'players' (workplace parties, insurers, clinical care providers and disability managers) in the RTW continuum. It continues as an effective evidence guide as the health and safety associations (HSAs) consultants now take on a new role in disability prevention (DP) / return to work (RTW) at the organizational level (not the case level). In 2010 KTE will continue to support the Multi-morbidity, Depression and Pain in the Workplace study of Canadian Nurses led by Renée-Louise Franche. We will coordinate focus groups in Ontario and assist in developing summaries and other products. We will provide KTE guidance to the research coordinator located in British Columbia. Other maturing research projects may be of interest to the RTW audience and KTE activities will follow as appropriate. RTW for WSIB continues as strategic priority and KTE will work to engage them as new research emerges. KTE will continue to support strategic collaborations with WSIB in RTW (e.g. LMR). In 2010 KTE will look at building first a distribution list and then a network of disability managers in Ontario

### **Objectives:**

- To support HSA consultants with research evidence and guides in their new role in DP/RTW.
- To provide KTE support for research projects with messages for RTW audiences (LMR, WDB, Long term care sector trends in compensation claims, Canadian Nurses study)
- To continue to disseminate the Red Flags Green Lights (RFGL) Guide with follow-up survey. Support WSIB BTG evaluation project
- To develop a dissemination list of individuals involved in disability management in Ontario. Undertake a project to either build on an existing network or develop an IWH network of disability managers.

**Methods:** Support stakeholder meetings for research projects e.g., multi-morbidity study. Interview disability managers and develop project plan to create network of disability managers and expand our contact list. Highlight completed research articles on RTW in IWH newsletter. Partner with CCOHS to expand our reach nationally.

**Results:** RFGL survey was completed and results were used to plan future dissemination activities. Initial interviews of disability managers was completed. Link was made with 60 Summits, a new disability managers group in Ontario. We worked with CCOHS on RTW webinars to expand reach nationally.

**Researchers:** Jane Brenneman Gibson (Project Leader), Kristina Buccat, Kiera Keown, Ellen MacEachen, Cindy Moser, Cynthia Neilson, Renée-Louise Franche (Vancouver General Hospital), Susan Rappolt (Toronto Rehabilitation Institute)

**Stakeholder Involvement:** WSIB RTW Branch; EI Networks; HSA consultants, workplace parties, disability managers, health care and nursing organizations, OLTC, Office of the Employer Adviser, Office of the Worker Adviser, Injured Worker Consultants, Ontario Network of Injured Workers Groups, Workers United, OSACH, OHSAA and Hospital Employees' Union.

**Potential Audiences and Significance:** Players in the RTW continuum (workplace parties, insurers, clinical care providers and disability managers, health care providers and nursing organizations, injured workers) will receive RTW messages and be linked to discuss successful RTW.

**Links to WSIB Policy & Program Priorities:** Work Reintegration: Prevention & Management of Work Disability

## **Relationship Building with Policy-Makers (0603)**

**Project Status:** Completed

**Introduction:** Policy-makers are a key target audience for the Institute. Policy-makers include WSIB and Ministry of Labour. In our new Five Year Strategic Plan, one of our principles is to align our research to ensure relevancy to the needs of our partners with an emphasis on the mandate of the WSIB.

**Objectives:**

- Working with the Office of the President and the Scientific Director, and senior scientist Ron Saunders, KTE will continue to support development of strategic collaborations with WSIB.
- To support the development and dissemination of Issue Briefings (Ron Saunders-lead).
- To support the development to strategic collaborations with MOL (Ron Saunders-lead)

**Methods:** Consultation with OH&S stakeholders; workshops and seminars; secondment/mentoring opportunity; co-ordination with KTE Hub.

**Results:** Provided support as requested for Strategic collaborations with WSIB and MOL. Mailing expansion prepared. Metrics prepared as part of evaluation of Issue briefings. KTE support provided as requested for strategic collaborations. Expanded list put on hold, evaluation plan reviewed at KTEAC. Issue briefing downloads tracked on IWH website. KTE support provided as requested for strategic collaborations. Back Book So your back hurts- updated to respond to WSIB request. KTE support provided as requested for strategic collaborations. IB evaluation survey put on hold due to slow down in posting next two products (policy maker input).

**Team:** Jane Brenneman Gibson (Project Leader), Ben Amick, Anita Dubey, Kiera Keown, Cameron Mustard, Cynthia Neilson, Ron Saunders

**Stakeholder Involvement:** WSIB, MOL, WorkSafeBC, Other WCBs

**Potential Audiences and Significance:** WSIB, MOL; other WCBs in Canada

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## Clinical Networks (0617)

**Project Status:** Ongoing

**Introduction:** Many clinical provider groups deliver care to populations of interest to IWH (e.g. workers with musculoskeletal disorders). Some practice outside the more traditional clinical settings and focus on the work/health interface. We have targeted these groups as potential audiences for Institute research messages, as providers who work within, or in close association with, workplaces (in primary/secondary prevention roles and/or return to work, delivering treatment and/or disability management) including family physicians (MDs), physiotherapists (PT), kinesiologists (Kin), occupational health nurses (OHN), occupational therapists (OT), chiropractors (Chiro) and ergonomists (Ergo).

Many IWH research messages that are relevant and useful to these groups (management of back pain, disability management and RTW). Equally, these groups possess a practice expertise and knowledge that is useful and relevant to IWH. This project builds knowledge transfer & exchange infrastructure that can be used over time with multiple messages. Fundamental to this project are partnerships developed with professional bodies who represent or regulate these disciplines. These partners have assisted in identifying those individuals across the province who are informal opinion leaders, i.e. individuals who are identified by their peers as “educationally influential” (EI - as defined in the Hiss methodology). We have identified EIs across the province in the disciplines describe in the previous paragraph. Each of these groups has been convened to seek their cooperation in an ongoing role as “knowledge broker”. Specifically, we are establishing a two-way exchange: stakeholder information and opinion into IWH (to improve our research and knowledge transfer efforts); and research knowledge out to EIs and, via EIs, to their peers to ultimately assist evidence-based practice. OHN has moved to a community of practice model and it is time to renew the PT network.

### Objectives:

- To engage partners who helped create EI Networks.
- To plan and implement annual face-to-face contact with each discipline group.
- To plan and implement projects to bring EIs into IWH's work (e.g., Ergo input into PE tool; tool development).
- To determine where EI 'renewal' is necessary and undertake necessary new surveys or alternate organizational structures.
- To disseminate information to EI groups as appropriate
- To remain active contributors to association trade publications.

**Methods:** Annual meeting with EIs. Increase number of articles in their professional journals and newsletters. Evaluation of EI interaction via the OT EI network.

**Results:** The renewal process was completed and all networks have been embellished for 2011.

**Team:** Jane Brenneman Gibson (Project Leader), Kristina Buccat, Kiera Keown, Cynthia Neilson

**Stakeholder Involvement:** Clinicians/practitioners; professional bodies (Associations/Regulatory Colleges); Guidelines Advisory Committee.

**Potential Audiences and Significance:** Family physicians, PTs, OHNs, OTs, Kins, Ergos, and Chiro. Relevant findings will be disseminated to appropriate EI groups. It is anticipated that members of these groups will then further disseminate these findings within their own networks. EI's may also be involved with specific research projects, included as either a partner or co-investigator. Individual partner organizations may also promote IWH through their own events, website etc.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care.

## **Prevention Partners Networks (0640)**

**Project Status:** Ongoing

**Introduction:** KTE will continue to build relationships with the prevention partner community through vehicles like the Health and Safety Association Liaison Committee (HSALC). Members of the KTE Hub (project 601) continue as full partners in the HSALC. The "Research Alerts" product which is branded from the "Research Partners" will now be distributed beyond the HSALC to other networks such as the Educational Influential clinicians. Capacity building in the use of evidence in programming and planning will continue through the review of evidence from the final prevention reviews. This regular committee work will be supplemented with workshops open to the broader HSA community. We will also look at the experience of the HSAs who have become research participants in a series of pilot projects. We will continue to use webinars to be sure that HSALC members from outside Toronto can participate. We will seek feedback from the HSA consultants on their experiences in using the tools that are being created from the systematic reviews.

### **Objectives:**

- To continue to build relationships with prevention partners to take research evidence to Ontario workplaces.
- To continue to develop opportunities for our prevention partners to participate in the research process and review their experience with this participation.
- To coordinate IWH input into the IAPA conference and assist IAPA in the review of the abstracts for research posters.
- To assist IWH researchers to develop and deliver a Research 101 and Measurement workshop geared to this audience.
- To work jointly with KTE Hub members on this agenda.

**Methods:** Continue to utilize HSA network for dissemination of IWH research and guides. Collected feedback on research alerts product. Participate in CHSI Research Exchange Series.

**Results:** HSALC continues to be well attended. Northern consultants attend by phone or webinar. CREs participated in research portions of the meetings. HSAs confirmed that Research Alerts is a valued product and made suggested changes to make it more user friendly. HSAs were invited to take on a new role in assisting employers in developing effective RTW programs at the organizational level.

**Team:** Jane Brenneman Gibson (Project Leader), Kristina Buccat, Anita Dubey, Kiera Keown, Greer Palloo

**Stakeholder Involvement:** HSA Community, MOL, WSIB RTW/LMR, Prevention, WSIB RAC secretariate, CRE MSD, CRE OD, CREIDO via KTE Hub, IWH researchers

**Potential Audiences and Significance:** HSA consultants, OSHCO Membership, Ministry of Labour, Centres for Research Expertise and the WSIB are audiences that can utilize research evidence in their programs with Ontario employers.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability

## **Workplace Parties Networks (0612)**

**Project Status:** Ongoing

**Introduction:** As workplace parties are priority audiences for IWH research, this project will build relationships with these audiences. The focus in 2010 was to continue to disseminate to employers through safety group contacts. We will continue to develop some stronger links with organized labour building on their needs and existing networks.

**Objectives:**

- To disseminate twice per year to employers through safety group contacts.
- To review possible ways to strengthen our links to organized labour.
- To assist IWH researchers in linking with workplace parties for specific IWH research projects.
- To continue to utilize HSA networks as conduit for research to workplaces.

**Methods:** Relationship building via in-person meetings. Determine process for building employer network.

**Results:** Increased profile with OFL. One of eight invitees to do booth at OFL conference this year. No follow-up by Safety Groups for research input this year.

**Researchers:** Jane Brenneman Gibson (Project Leader), Kristina Buccat, Kiera Keown, Cynthia Neilson, Greer Palloo, Ron Saunders

**Stakeholder Involvement:** Workplace parties (employers, organized labour)

**Potential Audiences and Significance:** Employers, and organized labour, workers

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability

## **Vulnerable Workers (0619)**

**Project Status:** Ongoing

**Introduction:** Young workers and other vulnerable populations, including immigrants, older workers and new workers, have higher than average workplace injury rates. Research done to date shows that young workers, and all workers who are new to a job, are more likely to be injured in the first month. In addition, workplace factors such as what the worker is doing and where they are working appears to be a more significant risk factor than individual characteristics, such as age, gender.

**Objectives:**

- To develop and implement a formal strategy for transfer of messages to youth employment centres from upcoming young workers research examining early school leavers and youth employment centres.
- To develop and implement a formal strategy for transfer of messages to immigrant, new and older workers.

**Results:** No support for vulnerable worker projects was required. Attended a team meeting for Prevention is the Best Medicine to provide input on environmental scan for tools for immigrant workers.

**Team:** Kiera Keown (Project Leader), Cynthia Neilson

**Stakeholder Involvement:** Organizations and individuals specifically working with early school leavers, including the Ontario Association of Youth Employment Centres.

**Potential Audiences and Significance:** Policy makers including MOL, MOHLTC, WSIB, HSAs, HRDC, other WCBs as well as those involved in program development/marketing and awareness campaigns for new and young workers. Staff from Ontario's youth employment centres. Immigrant worker organizations and advocates.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness



## Issue Briefings (0611)

**Project Status:** Ongoing

**Introduction:** Research findings of the Institute for Work & Health often have implications for decision-makers in government, the WSIB, and other OSHCO partners, and for employers, labour groups, and clinicians. Institute staff identify findings of interest to policy-makers in government and at the WSIB and prepare brief documents (3-5 pages) that outline the research findings and their implications, in plain language. The Five Year Strategic Plan of the IWH indicates that “we will provide our audiences with opportunities to increase their knowledge about research evidence, using methods tailored to meet the specific needs of stakeholder groups.” This project is an example of the development of a tailored form of knowledge translation.

**Objectives:**

- To summarize recent research findings that ought to be of interest to policy-makers in government and at the WSIB.
- To identify policy implications of these findings.
- To strengthen relationships with the WSIB and MOL.

**Methods:** The work involves briefly summarizing, in plain language, research findings on topics of interest to the policy community and identify implications for decision-makers. Issue Briefings are designed to give readers a quick overview of key findings on a topic, and to stimulate a continuing conversation on the issues examined. While they do not attempt to be systematic or comprehensive in their review of the relevant literature, they do pay attention to the quality of the research. They also consider existing reviews of the literature when available.

**Results:** Three Issue Briefings were published in 2010. 1) Workers' Compensation in California and Canada; 2) Shift Work and Health, and 3) A Patchwork Quilt: Income Security for Canadians with Disabilities.

**Team:** Ron Saunders (Project Leader), Jane Brenneman Gibson, Anita Dubey, Cindy Moser, Cameron Mustard

**Stakeholder Involvement:** Senior policy and operations officials at MOL; senior policy and prevention officials at WSIB.

**Potential Audiences and Significance:** Issue Briefings are sent by email to heads of workers' compensation boards and senior officials of ministries of labour across Canada. After posting on the IWH website, a link to the Issue Briefings is sent to senior officials of workers' compensation boards, public health academics, members of the HSA Liaison Committee, the CCOHS, the Industrial Relations Centre at U of T, and several key Ontario stakeholders. The individuals are invited to post the link to Issue Briefings on their organizations' websites and/or bulletins. We are considering further expansion of the distribution, possibly to include international organizations.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **KTE Advisory Committee (0646)**

**Project Status:** Ongoing

**Introduction:** The KTE Advisory Committee (KTEAC) forms part of the accountability framework for KTE by providing expert advice on our KTE activities challenges and accomplishments.

**Objectives:**

- To provide expert advice to KTE at IWH to enhance the quality and effectiveness of the programs.
- To continue committee member renewal.
- To balance input from SAC on impact and KTEAC on effective methods

**Methods:** Expert committee member input to KTE projects

**Results:** Five of the seven advisory committee members attended the day. The post evaluation shows that day was well organized, materials clear, with a full agenda.

**Team:** Jane Brenneman Gibson (Project Leader), Kristina Buccat, Anita Dubey, Kiera Keown, Philip Kiff, Cynthia Neilson, Greer Palloo, Katherine Russo

**Stakeholder Involvement:** KTEAC Chair, Internal Committee, IWH Executive

**Potential Audiences and Significance:** KTE, IWH researchers, Executive, Board of Directors.

**Links to WSIB Policy & Program Priorities:** Internal advice/ not applicable

## **Tool Development (0636)**

**Project Status:** Ongoing

**Introduction:** Stakeholders have told us that they need “tools” to help them apply research findings in the workplace. Research in knowledge transfer has also shown the advantage of having evidence-based tools (e.g., Ergonomics Blueprint, BackGuide, Physician Toolkit, Seven Principles of RTW). As research continues to develop and mature at the Institute, there will be a need for additional tools to meet the needs of the Institute’s stakeholders and other interested audiences.

**Objectives:**

- To continue to look for new opportunities for tool development. e.g., from the systematic reviews.
- To update, repackage and market current tools within IWH toolkit as needed.
- To administer and coordinate all procedures related to translations of the DASH, QuickDASH and maintain related database.
- To monitor and maintain database of requests for commercial and non-commercial use of the DASH.
- To follow-up survey on RFGL guide targeted dissemination.

**Results:** The Ontario Health and Safety Smart Planner is now readily available on the IWH website. Revision of the DASH manual is in the final stages of production and is expected to be available in December 2010/January 2011. An inventory of the DASH website was done in anticipation of the site's transition into Drupal- e-scoring tool (in Excel) for the QuickDASH is in the final production phase. If completed by December, it will be posted on the DASH website and advertised in the Winter/Spring edition of the DASH e-Bulletin. We received an inquiry from a US based clinic to develop an i-pad DASH application. IWH will monitor the development of the application and on its completion, it will be available for download from the DASH website.

**Team:** Greer Palloo (Project Leader), Jane Brenneman Gibson, Kristina Buccat, Carol Kennedy-Yee, Kiera Keown, Philip Kiff

**Stakeholder Involvement:** HSA community, workplace parties, clinicians, other stakeholders as appropriate.

**Potential Audiences and Significance:** Workplace parties, clinicians.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Tracking KTE/Evaluation (0629)**

**Project Status:** Ongoing

**Introduction:** Consistent with the IWH Five Year Strategic Plan, KTE has identified activities and indicators to be measured. In 2010 KTE will continue to track specific indicators. KTE will continue to gather information from key stakeholders and get their feedback about the accessibility, applicability and usability of research/KTE products. In addition KTE will utilize any evidence from the KTE systematic reviews on measuring the impact of KTE to update the type of tracking/monitoring that is required.

**Objectives:**

- To continue to track KTE indicators that are part of Five Year Strategic Review.
- To continue to track stakeholder engagement in systematic reviews and other research activities.
- To continue to track dissemination activities, publications and trade media related to systematic prevention reviews.
- To determine if these tracking tools provide a good basis for broader application to KTE activities with stakeholders.
- To revise tracking or other measures based on results of KTE systematic reviews.

**Methods:** Tracking systems developed and monitored.

**Results:** Eight case studies were completed; a number of stakeholders were engaged through KTE activities and case studies completed. Indicators report prepared for IWH Board of Directors showed all key indicators met by KTE group in 2010.

**Team:** Jane Brenneman Gibson and Kiera Keown (Project Leaders), Kristina Buccat, Anita Dubey, Emma Irvin, Cindy Moser, Cynthia Neilson, Katherine Russo

**Potential Audiences and Significance:** This project will be significant to IWH staff as needed information about stakeholders will be more readily available. It will provide a basis from which to determine what other information we should be collecting about our KTE activities.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **KTE Partnerships (0652)**

**Project Status:** Ongoing

**Introduction:** This project focuses on establishing partnerships with other KTE practitioners as part of our capacity building as a unit and team. The Ontario KTE Community of Practice (KTE C of P) continued in 2010. A CIHR meeting grant was written for funding to bring in external speakers for meetings and workshops. Jane Gibson continues on the planning committee and KTA staff participate in meetings. We engage colleagues from the KTE C of P on our plan for web 2.0 technologies if the internal business plan is approved. We continue to profile the IWH KTE work at appropriate conferences and workshops. Results of the KTE systematic review will be shared with KTE C of P.

### **Objectives:**

- To attend planning and member meetings of the Ontario KTE C of P.
- To use the Community of Practice venue to share research evidence and best practices on what works in KTE.
- To share results of KTE Systematic Review with C of P and updated KTE Workbook.
- To review usefulness of KTE Research Alerts project.
- To present IWH KTE work at appropriate conferences.

**Results:** KTE Community of Practice continues to meet regularly. We were successful in receiving CIHR funding to help finance speakers and networking events. Relationships with other KTE C of P members resulted in an invitation for IWH to be part of an application for NCE grant. J Gibson was invited to present at a KT professional certification course in January 2011.

**Team:** Jane Brenneman Gibson (Project Leader), Anita Dubey, Kiera Keown, Cynthia Neilson

**Stakeholder Involvement:** KTE Community in GTA

**Potential Audiences and Significance:** KTE practitioners, researchers in KTE.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Internal Communications (0622)**

**Project Status:** Ongoing

**Introduction:** The Institute continues to grow and expand its activities provincially, nationally and internationally. As a result, there is a need to keep its staff informed of such activities in a timely manner through insightful, explicit and rapid internal communications processes. In addition inter- and intra-departmental communications must be encouraged and enhanced to improve working relationships and assist in meeting our corporate goal of “be a model of a healthy workplace”.

**Objectives:**

- To implement strategies for the ongoing renewal of the Intranet including creating new pages and reorganizing of sections as appropriate.
- To inform staff of internal and external activities through the Institute’s e-newsletter, thisweek@IWH.
- To evaluate internal communications and vehicles used to communicate with staff.

**Results:** E-newsletter - thisweek@IWH, produced and distributed to staff every Monday morning. Monthly innie stats were collected and analyzed - report produced; Innie pages were monitored, reviewed and updated, as required on an ongoing basis. Monthly, quarterly and bi-annual reports were produced.

**Team:** Greer Palloo (Project Leader), Jane Brenneman Gibson, Kristina Buccat, Anita Dubey, Philip Kiff, Cindy Moser

**Stakeholder Involvement:** Not applicable.

**Potential Audiences and Significance:** Internal initiative.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Corporate Communications (0690)**

**Project Status:** Ongoing

**Introduction:** The communications group provides overall support to KTE and corporate activities of the Institute. This support includes production of various corporate documents and responses to external queries for information on a variety of topics.

**Objectives:**

- To produce corporate documents as required.
- Ongoing branding activities.
- To monitor and respond to ongoing requests for information and Institute products.
- To maintain the corporate contact and mailing database.
- To review of presentation format of the quarterly communications statistics for internal and board use.

**Methods:** Ongoing monitoring and reporting of communication functions; development of new contact management system.

**Results:** Quarterly e-alerts sent with At Work publication to stakeholders. Quarterly communication's report produced for IWH BOD meeting. Quarterly communications reports produced using new format. Contact Relations Management (CRM) project initiated; open source software v-tiger approved.

**Team:** Anita Dubey (Project Leader), Jane Brenneman Gibson, Kristina Buccat, Philip Kiff, Greer Palloo, Katherine Russo

**Potential Audiences and Significance:** External stakeholders.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **IWH Annual Report (0665)**

**Project Status:** Ongoing

**Introduction:** The annual report provides an overview of the Institute's research and KTE activities as well as financial statements for the previous year.

**Objectives:**

- To produce and distribute the annual report.

**Results:** The 2009 Annual Report was completed and made available to the public.

**Team:** Anita Dubey (Project Leader), Jane Brenneman Gibson, Kristina Buccat, Philip Kiff, Cindy Moser, Cameron Mustard

**Potential Audiences and Significance:** External stakeholders. Dissemination occurs using direct mailing to selected IWH stakeholders. The report is also posted on the IWH website and promoted in the At Work newsletter.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.



## **At Work (0660)**

**Project Status:** Ongoing

**Introduction:** The At Work newsletter provides ongoing communication with stakeholders on IWH research and knowledge transfer and exchange activities. Research Highlights showcases published research of interest to stakeholders.

**Objectives:**

- To produce four editions of At Work.
- To meet with researchers, KTAs and communications committee to generate potential story ideas.
- To assess impact of visual identity changes to At Work and Research Highlights.
- To produce Research Highlights once scientific papers are published.

**Results:** Four editions of At Work developed, produced and disseminated. Produced approximately 20 Research Highlights.

**Team:** Anita Dubey, Jane Brenneman Gibson, Kristina Buccat, Philip Kiff, Katherine Russo

**Potential Audiences and Significance:** External stakeholders

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Media Relations (0655)**

**Project Status:** Ongoing

**Introduction:** Increasing the profile and visibility of the Institute with the consumer, business and professional media is an ongoing objective of the Institute and the KTE group. Regular contact with OHS, clinical and business reporters and editors should lead to increased dissemination of Institute research.

**Objectives:**

- To maintain targets for published articles about IWH in trade and consumer media.
- To explore new outlets to promote IWH research. Update media room on website.
- To maintain and update media database.

**Results:** Identified research of interest to media and sent information updates. Reviewed media database and updated. Submitted articles for regular IWH columns. Sought new opportunities with realigned HSAs and through social media.

**Team:** Anita Dubey (Project Leader), Jane Brenneman Gibson, Kristina Buccat, Katherine Russo

**Potential Audiences and Significance:** Media, general public, external stakeholders. Dissemination will occur through personal contact (email, telephone), media releases, the IWH website, a targeted media mailing of the At Work newsletter and other opportunities as they arise.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Alf Nachemson Memorial Lectureship (0645)**

**Project Status:** Ongoing

**Introduction:** Established by the Institute in 2002 to honour Dr. Alf Nachemson's significant contribution to research evidence in clinical decision-making, the Alf Nachemson Lectureship is awarded annually to a prominent national or international individual who has made a significant and unique contribution to a number of work and health-related themes, including the interface between work and health, the role of evidence in decision-making or evidence-based practice in the prevention of work-relevant injury, illness or disability. The lecture is delivered at a networking event to which many of the Institute's stakeholders are invited. Dr. Nachemson died in 2006 and thus the title of the lecture series has been revised to note his passing.

**Objectives:**

- To increase the visibility of the Institute provincially, nationally and internationally.
- To identify and acknowledge individuals who have made significant and unique contributions to work-health research; to provide an opportunity for Institute staff and stakeholders to network.

**Results:** The lecture was held on November 18 at the Design Exchange, Toronto. The eighth recipient of this memorial award, Dr. Terrence Sullivan is the CEO of Cancer Care Ontario and Associate Professor, University of Toronto. Dr. Sullivan was the founding president of the Institute for Work & Health. Presented: Improving quality and performance in health services: Reflections from Cancer Care Ontario. Approximately 130 stakeholders from WSIB, UHN, MOHLTC, HSAs, universities, research organizations, media, IWH Board of Directors and staff attended this successful event.

**Team:** Greer Palloo (Project Leader), Jane Brennehan Gibson, Kristina Buccat, Anita Dubey, Philip Kiff, Katherine Russo

**Potential Audiences and Significance:** Members of IWH's Board of Directors, stakeholders, other interested individuals and IWH staff members.

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **Web Development (0630)**

**Project Status:** Ongoing

**Introduction:** The Institute's website is the key communications tool to keep our external stakeholders up to date on current IWH activities and projects. The website content reflects the growing research and KTE agendas. The objectives for this year are to complete the second stage of the new site redesign, to revise the new design based on user feedback, and then to begin taking advantage of the new platform, either by expanding content or adding new features. In addition to the main corporate site, the Institute also manages the Cochrane Back Review Group site, the DASH (Disabilities of the Arm Shoulder and Hand) website and the CLUG (Cochrane Library Users' Group) sites.

**Objectives:**

- To maintain current content; continue to refine new site design.
- To launch second stage of new site (this will add a full listing of publications by IWH researchers).
- To add new features or content to the site as required by IWH priorities.

**Results:** 2010 was a year of consolidation and continuation for the main IWH website. Small refinements were made to the site over the course of the year, but there were only a few new features or noteworthy additions to the site. Several of the projects originally planned for 2010 were put on hold as web staff directed energies instead to the CARWH Conference, the 5000 Firms Study, and to developing the new Contact Relations Management (CRM) system.

**Team:** Jane Brenneman Gibson, Anita Dubey, Philip Kiff, Cindy Moser, Greer Palloo

**Links to WSIB Policy & Program Priorities:** No WSIB Links Reported.

## **CARWH (0664)**

**Project Status:** Completed

**Introduction:** The Institute for Work & Health hosted the biennial conference of the Canadian Association for Research on Work and Health (CARWH), held in Toronto May 28-29, 2010. CARWH is a non-profit association of researchers in Canada whose work focuses on the prevention and management of ill health, disability, and injury associated with work activities and environments.

**Objectives:**

- To share cutting-edge research and knowledge translation in the area of work and health. It brought together stakeholders and researchers from a wide variety of disciplines to discuss research findings and to exchange ideas about research and its application to policy and practice to improve the health and safety of Canadian workers. The theme of the 2010 conference was “Worker Health in a Changing World of Work.”

**Methods:** A hosting committee chaired by Jane Gibson was established to organize the logistics of the conference and lead the fundraising activity. A program committee, chaired by Ron Saunders, with 12 CARWH members from various disciplinary backgrounds was established to provide advice on the conference program and assist with the adjudication of abstracts and symposium/workshop proposals. A conference executive committee, chaired by Ron Saunders. A student day committee organized a special program for graduate students

**Results:** The conference took place on May 28-29 2010 at the University of Toronto, Chestnut Conference Facilities. Over 220 registered and attended the conference. The program included 79 oral presentations, over 40 posters, five symposiums, two keynote speakers and a closing panel. On May 27, 2010, there was a pre-conference student day (providing researchers-in-training with insights on a variety of topics, such as navigating funding systems) and a pre-conference symposium on knowledge transfer and exchange.

The conference program themes included: Protecting vulnerable workers; Work-related MSDs; Sustainable Return to work (RTW); Economic incentives and regulatory standards in occupational health protection; Work hazards and exposure measurement; Knowledge exchange in OHS; Topics in workers' compensation; Occupational Disease; Long-duration disability episodes; Education, training and health promotion in occupational health; Topics in prevention.

Conference evaluation: An electronic survey was sent to all conference attendees post conference. Total response was 112 (99 English and 13 French) representing about 49% of attendees. The results showed that 73.4% felt the conference was a valuable or very valuable learning experience. Over 77% saw the conference as an excellent networking experience.

**Team:** Ellen MacEachen (Project Leader), Jane Brenneman Gibson, Kristina Buccat, Anita Dubey, Philip Kiff, Dylan Maccarone, Cameron Mustard, Greer Palloo, Ron Saunders

**Stakeholder Involvement:** Various stakeholders (WSIB, MOL, HSAs, labour, business, and injured worker organizations) were consulted on the topic list for the conference.

**Links to WSIB Policy & Program Priorities:** Health & Safety: Effective Prevention of Injury & Illness; Work Reintegration: Prevention & Management of Work Disability; Health Services: Effectiveness & Efficiency of Clinical Care



## 2010 Accomplishments

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## Publications 2010

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Robson LS, Stephenson CM, Schulte PA, Amick III BC, Irvin E, Eggerth DE, Chan S, (with Bielecky A, Cullen K) et al. A systematic review of the effectiveness of occupational health and safety training for the protection of workers. Submitted: *Scandinavian Journal of Work Environment and Health (Project 975 – SR: Evaluating Education & Training)* [2009-141]

Rueda S, Chambers L, Wilson M, Mustard CA, Rourke SB, Bayoumi A, Raboud J, Lavis JN. Return to work is associated with better health in working age adults: A systematic review. Submitted: *American Journal of Public Health* [2010-102]

Rueda S, Raboud J, Rourke SB, Bekele T, Mustard CA, Bayoumi A, Lavis JN, Cairney J. Job security offers quality of life benefits over and above labour force participation in HIV: A cross-sectional study. Submitted: *AIDs and Behaviour*

Scott-Marshall H, Fang M, Morassaei S, Tompa E. Marital formation in individuals with permanent work-related impairment. Submitted: *Disability & Society*

Skakon J, MacEachen E, Labriola M. The effect of cultural management on manager and employee stress - Results from a qualitative study. Submitted: *European Journal of Work and Organizational Psychology* [2009-148]

Smith PM, Mustard CA. The many faces of under-employment among immigrants to Canada: 1993 – 2005. Submitted: *Work & Stress (Project 413)* [2009-015]

Sun X, Briel M, Busse JW, You JJ, Akl EA, Mejza F, Bala M, et al. Study characteristics associated with reporting of subgroup analyses in randomized controlled trials. Submitted: *BMJ (Generic)* [2010-071]

Tam E, Furlan AD. Transdermal lidocaine and ketamine for neuropathic pain: A retrospective chart review. (Generic) [2010-072]

Tang K, Escorpizo R, Beaton DE, Bombardier C, Lacaille D, Zhang W, Anis AH, et al. Measuring the Impact of Arthritis on Worker Productivity: perspectives, methodologic issues, and the importance of considering contextual factors. Submitted: Journal of Rheumatology) [2011-003]

Tang K, Beaton DE, Gignac MAM, Bombardier C. Rasch analysis informed modifications to the RA-WIS for use in work-related upper-limb disorders: derivation of the Upper-Limb Work Instability Scale (UL-WIS). Submitted: Journal of Clinical Epidemiology [2011-004]

Tjulin Å, MacEachen E, Edvardsson Stiivne E, Ekberg K. The social interaction of return to work explored from co-workers experiences. Submitted: Disability and Rehabilitation [2010-079]

Tompa E, Scott-Marshall H, Fang M, Mustard C. Comparative benefit adequacy and equity of three Canadian workers' compensation programs for long-term disability. Submitted: Industrial and Labour Relations Review (Project 406: WSIB lost-time injuries) (IWH WP #350) [2010-022]

Tompa E, Scott-Marshall H, Fang M. Does permanent impairment from workplace accident increase the risk of marital breakup? Submitted: Social Indicators Research [2006-061]

## **Books/Chapters**

### **Books/Chapters Forthcoming:**

Amick III BC, Gimeno D. Measuring work outcomes with a focus on health-related productivity loss. In: Wittink H, Carr D, editors. Evidence, Outcomes & Quality of Life in Pain Treatment: A Handbook for Pain Treatment Professionals. London, UK: Elsevier (in press).

Amick III BC, Hogg-Johnson S. Managing prevention with leading and lagging indicators in the workers' compensation system. In: Utterback D, Russer J, editors. Using Workers' Compensation Data for Occupational Injury and Illness Prevention. NIOSH/BLS Publication

Ammendolia C, Imamura M, Furlan A, **Irvin E**, van Tulder M. Chapter on: Needle acupuncture in: Simon Dagenais and Scott Haldeman, editors. Evidence-based management of low back pain – St. Louis, Missouri: Mosby Inc. (submitted 2010)

Brewer S, Tullar J, Amick BC. Using employee records: Pitfalls and opportunities. In: Utterback D, Russer J, editors. Using Workers' Compensation Data for Occupational Injury and Illness Prevention. NIOSH/BLS Publication

Dryden T, Furlan AD, Imamura M, Irvin E. massage therapy in: Dagenais S, Haldeman S, editors. Evidence-based Management of Low Back Pain. St. Louis, Missouri: Mosby Inc.

Dryden T, Furlan A, Imamura M, **Irvin E** – Chapter 12 on low back pain and massage therapy in: Christopher A Moyer and Trish Dryden, editors. Text book of Integrating Massage Therapy Research and Practice – Champaign, Illinois: Human Kinetics

Furlan AD, Pennick V, Ammendolia C, Hayden J. Conservative treatments for chronic non-specific low-back pain. In: Bhandari M, editor. Evidence-based Orthopaedics. BMJ Publishing. Submitted May 2010. [2011-005]

Loisel P, Anema H, MacEachen E, Pransky G, editors. Managing work disability in the 21st century. Springer Press. [2010-081]

MacEachen E, Polzer J. Governing worker productivity and health through flexibility and resilience. In: Polzer J, Power E, editors. *Risky Subjects, Healthy Citizens: Studies in Canadian Governmentality*. [2010-047]

Tompa E, Lund J, Yabroff R. Chapter 7: Health economics and cancer survivorship. In: Feuerstein E, Ganz P, editors. *Quality Health Care for Cancer Survivors*. [2009-095]

Tompa E, Lund J, Yabroff R. Chapter 15: Economics matters in cancer survivorship. In: Feuerstein E, Ganz P, editors. *Quality Health Care for Cancer Survivors*. [2010-103]

Tugwell P, Busse JW, Mills EJ, Dennis RJ, Lansang MA. Chapter 6.10. Clinical epidemiology. In: *The Oxford Textbook of Public Health*, 5th ed. Oxford University Press, New York. [2009-071]

van der Velde G. Non-operative management of whiplash-associated disorders. In: Bhandari M, editor. *Evidence-based Orthopedics*. Wiley-Blackwell, Oxford, UK [2010-030]

van der Velde G. Non-operative management of non-specific (mechanical) neck pain. In: Bhandari M, editor. *Evidence-based Orthopedics*. Wiley-Blackwell, Oxford, UK [2010-086]

Wiersma E, Chesser SA. (in press). Bridging community and long-term care settings. In: Gibson H, Singleton J, editors. *Leisure, Aging and Well-Being (Chapter 14)*. [2011-006]

#### **Other Papers, Unpublished Reports and Reviews**

De Bruin L. Depressive symptoms as a prognostic factor for low back pain and return to work: Update of a systematic review.

Furlan AD, Reardon R, Wepler C. Canadian guideline for safe and effective use of opioids for chronic non-cancer pain. <http://nationalpaincentre.mcmaster.ca/opioid/>

Furlan A, Yazdi F, Tsertsvadze A, Gross A, van Tulder M, Santaguida L, et al. Complementary and alternative therapies for back pain II. Rockville, MD: Agency for Healthcare Research and Quality; 2010. Report No.: AHRQ Publication No. 10(11)-E007 [2010-068]

Robson LS, Stephenson C, Schulte P, Amick III B, Chan S, Bielecky A, et al. (with Irvin E, Cullen K) A systematic review of the effectiveness of training for the protection of workers. DHHS (NIOSH) 2010-127. (Project 975: SR-Effectiveness of Training and Educational Interventions) [2009-011]

Robson LS. Brief Review of the Audit Methods used in ACC's Workplace Incentive Programs: Report to Insurance Risk Management, Product, Pricing & Distribution, Accident Compensation Corporation, New Zealand. Toronto: Institute for Work & Health, Jul 14, 2010. (Project 267: Audit Tools) [2010-058]

Saunders R. Shift work and health. IWH Issue Briefing No. 6, April 2010. [2009-104]

Tompa E, Mustard C, Koehoorn M, Scott-Marshall H, Fang F, Chen C. 2010. WorkSafeBC Study Report: The impact of Bill 49 on benefits adequacy and equity.

Van Eerd D. Systematic review of process and implementation of participatory ergonomic (PE) interventions: Stakeholder engagement was highlighted in: *Great Minds at Work*. Policy News, October 2010. WorkSafeBC Policy and Research Division e-Newsletter. Available at <http://www2.worksafebc.com/enews/prd/100924/100924.htm> (Project 985: PE Implementation and Process Evaluation) [2010-086]



## **Working Papers**

Breslin FC. The prevalence of mood disorders, anxiety disorders, and hazardous drinking among Canadian college/university students. WP# 352. (Project 423)

Cole DC, Van Eerd D, Wells RP, Chen C, Hogg-Johnson S. Workplace intervention associated changes in office environment and worker-environment interface indicators at a large newspaper. WP# 351 (Project 430)

Subrata P, Bigelow P, Van Eerd D, Krepostman S, Kalcevich C, Hunt S, McKean C. Pain, physical effort, work limitations in the electric and utilities sector. WP# 349 (Project 233)

Tompa E, Scott-Marshall H, Fang M, Mustard CA. Comparative benefits adequacy and equity of three Canadian workers' compensation programs for long-term disability. WP#350 (Project 406)

## External Scientific & Academic Presentations/Conferences 2010

### International

Amick III BC. The economics of work-related MSDs: Why should money matter? 29 Aug – 3 Sep 2010; Angers, France: 7<sup>th</sup> International Conference on Prevention of Work-related Musculoskeletal Disorders.

Amick III BC. A systematic review of retirement as a risk factor for mortality. 15-16 Apr 2010; Dallas, Texas: Population Association of America Annual Meeting.

Bain L, Bornstein C, Kennedy CA, Thorne C. Poster: Profile of inter-professional rheumatology care in Canada: A needs assessment leads development of an inter-professional patient-centered collaborative (IPC) training program. Apr 2010; Nancy, France: CARE VI.

Beaton DE. Cross cultural adaptation of PRO's: Methods and practice. Jun 2010; Rome, Italy: Annual European Congress of Rheumatology "EULAR 2010".

Breslin FC, Wood M, Mustard CA. Bridging the safety gap for vulnerable young workers using youth employment centers. 11-13 Mar 2010; Philadelphia, PA: Society for Research on Adolescence Meeting. (Project 423: Young Workers Using Employment Centers)

Clune L. The social (dis)organization of "Return to Work" from the standpoint of the injured nurse: An institutional ethnography. Jul 2010; Orlando, FL: Sigma Theta Tau International Research Congress.

Clune L. Using informant generated maps to discover the social organization of injury management society for the study of social problems. Aug 2010; Atlanta, GA.

Fox P, Sessford J, Beaton DE, Harniman E, Kennedy CA, Inrig T. Outcome measures used in non-drug, non-surgical arthritis trials: What is guiding our clinical practice guidelines? Apr 2010; Nancy, France: CARE VI.

Kennedy CA, Beaton DE, Shupak R, Warmington K, Hogg-Johnson S. Poster: Longitudinal measures in cross-over trial show consistency in improvement across outcomes following an interprofessional education program for adults with inflammatory arthritis. Apr 2010; Nancy, France: CARE VI.

MacEachen E, Franche R-L. Organiser of interventions for reducing work absence for workers with MSK Disorders. 29 Aug- 2 Sep 2010; Angers, France: PREMUS 2010.

Mustard CA. Metrics and measurement in disability management: A Canadian perspective. 20 Sep 2010; Los Angeles, CA: International Forum on Disability Management (IFDM) 2010.

Mustard CA, Hogg-Johnson S, Chen C, Tolusso D, Davilmar A, Tompa E, Amick III BC, Lee H, Vidmar M. The increase in long duration claims: Ontario, Canada. 19-22 Sep 2010; Los Angeles, CA: International Forum on Disability Management (IFDM) 2010.

Mustard CA, Logan L, Etches J, Allingham R. Factors associated with a deterioration in rehabilitation rates in a disability insurance scheme 2001-2007: Accident Compensation Corporation, New Zealand. 19-22 Sep 2010; Los Angeles, CA: International Forum on Disability Management (IFDM) 2010

Novak C, Katz J, Anastakis D, Beaton DE. Relationships among pain intensity, illness intrusiveness and disability in patients with traumatic peripheral nerve injury. 6-9 Jan 2010; Boca Raton, FL: American Association for Hand Surgery Annual Meeting.

Robertson M, Amick III BC, Huang E, Kernan G. Office ergonomics interventions: Examining the effects on musculoskeletal risk, environmental control and comfort. 17-20 Jul 2010; Miami, FL: International Conference on Applied Human Factors and Ergonomics.

Robson LS. Results from a systematic review of the effectiveness of training & education for the protection of workers. 20-21 Dresden, Germany: Institute für Arbeit und Gesundheit der Deutschen Gesetzlichen Unfallversicherung (IAG) 10th Training and Innovation Event. (Project 975: ET Systematic Review)

Steenstra IA, Hogg-Johnson S, Davilmar A, Verbeel JHAM. Trends in long term work disability due to low back pain, data from Ontario and The Netherlands. 29 Aug – 3 Sep 2010; Angers, France: PREMUS.

Steenstra IA, Lee H, de Vroome E, Hogg-Johnson S, Bongers PM. Poster: Return to work outcome measure: a measurement approach. 2-3 Sep 2010; Angers, France: WDPI Conference.

Tang K, Jiang D, Bombardier C, Beaton DE. Development and application of a structural equation modeling approach that captures the interrelationship between work absenteeism and presenteeism to determine prognostic factors for work productivity loss associated with musculoskeletal disorder. 3-8 May 2010; Kota Kinabalu, Malaysia: Outcome Measures in Rheumatology [OMERACT 10]

Tompa E, de Oliveira C, Dolinschi R, Irvin E. A systematic review of disability management interventions with economic evaluations. Aug 2010; Anger, France: Work Disability Prevention Initiative Conference. (Project 960: SR: Economic Evaluation of Workplace Interventions)

Tompa E. Keynote presentation: Current state of the art in economic evaluations of OSH interventions. Feb 2010; Amsterdam, The Netherlands: MSH Symposium

Tompa E, Fang M, Moore I, Hogg-Johnson S, Robson L, Amick III BC. Premium Setting Practices for Workers' Compensation in Ontario, Canada—Design, Impacts, and Risks. Apr 2010; Sandanski; Bulgaria: Second Working Meeting of the Repository of Occupational Well-being Economics Research (ROWER) Project.

Van Eerd D, Steenstra I, King T, Severin C, Cole DC, Bigelow P, Amick III BC, Beaton DE. A comparison of exposure assessment methods in computer workers. 29 Aug-3 Sep 2010; Angers, France: PREMUS 2010 – 7th Annual Conference on Prevention of Work-Related Musculoskeletal Disorders. (Project 430: Star/SONG)

Warmington K, Passalent L, Kennedy CA, Soever L, Shupak R, Lineker S, Thomas R, Schneider R, Lunden K. Poster: System level evaluation of the ACPAC (Advanced Clinician Practitioner in Arthritis Care) trained practitioner in Ontario. Apr 2010; Nancy, France: CARE VI.

## **National**

Beaton DE, Jiang D, Tang K, MacDermid J, Richards R, Côté P, Franche R-L, Hogg-Johnson S, Bombardier C. Predicting injured workers' experience of "absenteeism at-work productivity loss" over one year after WSIB Specialty Clinic attendance. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference

Breslin FC, Wood M, Mustard CA. Bridging the safety gap for vulnerable young workers using youth employment centers. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference (Project 423: Young Workers using Employment Centers)

Daniels TR, Pinsker E, Inrig T, Warmington K, Beaton DE. Do lower extremity outcome questionnaires used to assess ankle replacements and fusions really capture what patients want us to hear? 3-6 2010; Chateau Frontenac, QC: Canadian Rheumatology Association.

Eakin J, MacEachen E, Mansfield L, Clarke J. The stigmatization of injured workers: The construction of unworthiness in the compensation process. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference

Fox P, Sessford J, Beaton DE, Harniman E, Kennedy CA, Inrig T. Outcome measures used in non-drug, non-surgical arthritis trials: What is guiding our clinical practice guidelines? 3-6 Feb 2010; Chateau Frontenac, QC: Canadian Rheumatology Association

Hunt C, Breslin FC. Poster: Development and testing of the Student Work Safety Assessment Tool (SWSAT). 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference

Kennedy CA, Beaton DE, Shupak R, Warmington K, Hogg-Johnson S. Poster: Longitudinal measures in cross-over trial show consistency in improvement across outcomes following an inter-professional education program for adults with inflammatory arthritis.

Mustard CA. Shift work and breast cancer risk: summary of a symposium on the health effects of shift work. 31 May 2010; Ottawa, ON: Canadian Federation of Nurses Unions.

Robson LS, Stephenson C, Schulte P, Amick B, Chan S, Bielecky A, the Training & Education Systematic Review Team. A systematic review of the effectiveness of training & education for the protection of workers. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference. (Project 267: Audit tools)

Robson LS, Macdonald S, Van Eerd D, Gray G, Bigelow P. Something might be missing from OHS audits: findings from a content validity analysis of five audit instruments. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference. (Project 975: SR: Effectiveness of Education and Training)

Rueda S, Raboud J, Mustard CA, Rourke SB, Bayoumi A, Lavis J et al. Labour force participation improves health-related quality of life in men who have sex with men living with HIV. 13-16 May 2010; Saskatoon, SK: 19<sup>th</sup> Annual Canadian Conference on HIV/AIDS Research.

Smith P, Mustard CA, Chen C, Kosny A. Employment in physically demanding occupations after arrival in Canada among recent immigrants. 20 Mar 2010; Montreal: 12<sup>th</sup> National Metropolis Conference. (Project 413: Immigrants; RDC)

Smith P. Language literacy and labour market outcomes among recent Canadian immigrants. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference. (Project 413: Immigrants; RDC)

Tam E, Furlan AD, Flannery J. Poster: Transdermal lidocaine and ketamine for neuropathic pain: A retrospective chart review. 29 May 2010; Winnipeg, Manitoba: 58th CAPM&R Annual Scientific Meeting.

Tang K. Patient-oriented outcomes. Canadian Arthritis Network Annual Scientific Conference 2010: Gatineau, QC

Tompa E, Scott-Marshall H, Fang M, Mustard CA. Comparative benefits adequacy and equity of three Canadian workers' compensation programs for long-term disability. 28-29 May 2010; Toronto, ON: Canadian Association for Research on Work and Health Conference. (Project 406: WSIB Lost Time Injuries)

## **Local/Provincial**

Busse JW. Challenges associated with the interpretation of composite endpoints and surrogate outcomes. 17 Mar 2010; Hamilton, ON: Clinical Epidemiology & Biostatistics Rounds, McMaster University.

Busse JW. Psychiatric claims case studies. 16 Apr 2010; Toronto, ON: Wildon & Pulchinski Inc.  
Clune L. When the injured nurse returns to work. Oct 2010; Ottawa, ON: 2<sup>nd</sup> Biennial Bilingual Conference of the Canadian Society for the Sociology of Health.

Daraz L, MacDermid JC, Wilkins S, Brennemen Gibson J, Shaw L, Shah S. Poster: A knowledge exchange and transfer tool to assist consumers' access quality on-line health information and to promote communication with their health care providers. 19-20 May 2010; Ottawa, ON: 8<sup>th</sup> Annual Canadian Cochrane Symposium.

MacEachen E. Governing injured workers by their choices. 13-15 May 2010: Wilfrid Laurier University, Brantford, ON: 27<sup>th</sup> Annual Qualitative Analysis Conference: Social Pragmatism as a Conceptual Foundation.

Robson LS. Systematic review of the effectiveness of training & education for the protection of workers. 12 Jan 2010; Mississauga, ON: Centre for Health & Safety Innovation Research Exchange Series. (Project 975: SR: Effectiveness of Education and Training)

Smith P, Mustard CA, Chen C, Kosny A, Chan S. An examination of the working conditions and risk factors for work-related injuries among immigrant workers in Canada. 4 Mar 2010; Toronto, ON: Invited presentation, Vietnamese Women's Association of Toronto. (Project 413: Immigrants; RDC)

Smith P, Mustard CA, Chen C, Kosny A, Chan S. Working conditions and risk factors for work-related injuries among Canadian immigrants: the importance of language proficiency. 2 Feb 2010; Toronto, ON: Invited presentation, Citizenship and Immigration Canada's Language Instruction for Newcomers to Canada Conference (Project 413: Immigrants; RDC)

Smith P, Mustard CA, Chen C, Kosny A. Employment in physically demanding occupations after arrival in Canada among recent immigrants. 20 Mar 2010; Montreal, PQ: 12<sup>th</sup> National Metropolis Conference.

## **Educational, Professional, Policy & Other Presentations**

Busse JW. Challenges associated with the interpretation of composite endpoints and surrogate outcomes. 17 Mar 2010; Hamilton, ON: Clinical Epidemiology & Biostatistics Rounds, McMaster University.

Busse JW. Psychiatric claims case studies. 16 Apr 2010; Toronto, ON: Wildon & Pulchinski Inc.

De Bruin L. Depressive symptoms as a prognostic factor for low back pain and return to work: Update of a systematic review. Masters Thesis presentation

MacEachen E. Flaws and weaknesses in models for communicating health and safety risks during return to work. 25 May 2010; Hamilton, ON: Health and Safety Teach-In: Internal Responsibility Thirty Years Later, McMaster University

Mustard CA. Avoidable mortality for causes amenable to medical care by occupation in Canada, 1991-2001. 1 Jun 2010; Toronto, ON: CEU/ICES Conjoint Evaluative Sciences Rounds.

Mustard CA. The impact of demographics on health and safety. 26 Oct 2010; Toronto, ON: Health and Safety Conference, Lancaster House.

Mustard CA. Occupational health policy review in Ontario. 22 Oct; Toronto, ON: Strategic Training Program in Public Health Policy. .

Mustard CA, Bielecky A, Etches J, Wilkins R, Tjepkema M, Amick III BC, Smith PM, Aronson KJ. Cause-specific mortality, by occupation in Canada, 1991-2001: Two case studies. 16 Dec 2010; Toronto, ON: Health Analytics Branch Retreat, Ministry of Health and Long-Term Care.

Robson LS. Research syntheses on the topic of the effectiveness of OHS training and education. 3 Jun 2010; Toronto, ON: Presentation to the Training and JHSC/IRS Working Groups reporting to the MOL Expert Advisory Panel. Project 1175

Robson L, Nielson C. Recent reviews of the research literature on OHS training effectiveness. 23 Sep 2010; Education sector consultants of Public Services Health and Safety Association.

Robson L. Research Basics: How do we evaluate OHS interventions? 5 Oct 2010; CHSI Research Exchange Series.

Smith BT, Smith PM, Mustard CA. Over-qualification and cardiovascular disease mortality. 5 Nov 2010; Toronto, ON: Dalla Lana School of Public Health (DLSPH) Research Day.

Tompa E, Trevithick S, McLeod C. Systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. 23 June 2010; Mississauga, ON: Ontario Incentives Workshop.

## **IWH Plenaries**

### JANUARY

*Forecasting and modelling worker injury rates in Ontario (Jan 12)*  
Ian Moore, IWH

### FEBRUARY

*An interdisciplinary and participatory approach to prevention (Feb 2)*  
Alec Farquhar, Occupational Health Clinics for Ontario Workers (OHCOW)

*An examination of the working conditions and risk factors for work-related injuries among immigrant workers in Canada.(Feb 3)*  
Smith P, Mustard CA, Chen C, Kosny A, Chan S. IWH

*The role of patients' beliefs in predicting return to work following operatively managed tibial fracture (Feb 9)* Dr. Jason Busse, IWH

*Return to work co-ordination, the what, when, how, where and by whom: Findings from the Intervention Mapping Project (Feb 23)* Dr. Carlo Ammendolia, IWH

### MARCH

*A systematic review of the effectiveness of training and education for the protection of workers (Mar 9)*  
Dr. Lynda Robson, IWH

### APRIL

*"It's like we're forcing them to do it" Vocational retraining challenges facing providers and workers in Ontario's Labour Market Re-Entry program (Apr 6)* Dr. Ellen MacEachen, IWH

*Trying to get back: The challenges faced by registered nurses returning to work (Apr 27)*  
Laurie Clune, IWH

### MAY

*The impact of temporary employment and job tenure on sickness absence (May 4)*  
Drs. Heather Scott-Marshall and Emile Tompa, IWH

*Work disability prevention knowledge transfer initiatives for physical therapists in Alberta (May 11)*  
Douglas Gross, University of Alberta

*Modeling work disability prevention: An unmet challenge yet (May 25)*  
Dr. Patrick Loisel, Work Disability Prevention CIHR Strategic Training Program

### JUNE

*Futures studies: It's role in setting research agendas for work and health (Jun 1)*  
Professor Niki Ellis, Institute for Safety, Compensation and Recovery Research, Australia

### JULY

*Depression as a prognostic factor of LBP and RTW (July 27)*  
Linda De Bruin, VU University, Amsterdam

## SEPTEMBER

*Worker representation in occupational health and safety – a good idea going where? (Sep 14)*  
Andy King, National Health Safety and Environment Co-ordinator/Dep. Leader United Steel Workers

*Where should we be going, and how should we get there? (Sep 28)*  
Dr. Ben Amick, IWH

## OCTOBER

*No lost time claims (Oct 12)*  
Dr. Peter Smith, IWH

*Occupational health policy review in Ontario (Oct 26)*  
Dr. Cam Mustard, IWH

## NOVEMBER

*The challenges of estimating exposure to workplace carcinogens in Canada (Nov 2)*  
Dr. Paul Demers, Occupational Cancer Research Centre

*Occupational safety in hospital nursing: organizational contexts (Nov 11)*  
Dr. Sean Clarke, RBC Chair in Cardiovascular Nursing Research, University of Toronto

*Geographic variation in occupational injury and its correlates among Canadian men and women (Nov 16)*  
Dr. Curtis Breslin, IWH

*Precarious employment and the internal responsibility system (Nov 23)*  
Wayne Lewchuk, McMaster University

*Light's contributions to well-being: implications for workplaces (Nov 29)*  
Dr. Jennifer Veitch, National Research Council (NRC) Institute for Research in Construction

## DECEMBER

*A delicate dance with many partners: Immigrant workers' experiences of injury reporting and claim filing.*  
Dr. Agnieszka Kosny (Dec 7)

*The Ontario Health Study: Creating platforms for revolutionary science and transformational biology (Dec 14)*  
Professor Lyle Palmer, Ontario Health Study



### **Research Funding - Awarded**

Busse J, Price D, Riva J, Moore A. Survey of GP attitudes towards chiropractic: a cross-sectional survey. Ontario Chiropractic Association: \$2,500 (2010-2011)

Hogg-Johnson S, Tolusso, Franche R-L, Bultmann U, Amick III BC, Steenstra I, Tompa E. Two cohort comparison: Comparison of the 1993 early Claimant Cohort and the 2005 Readiness for Return to Work Cohort. WSIB RAC: \$120,805 (2011-2012) P2145

Kosny A, Steenstra I, Kramer D. Buddies in bad times: The role of co-workers in the return to work process. WSIB RAC: \$50,809 (2010-2011) P2240

Robson L, Hogg-Johnson S, Amick III BC, Van Eerd D, Steenstra I. Developing leading indicators from OHS management audit data. WSIB RAC: \$86,800 (2010-2012) P1190

### **Non-IWH Research Funding – Awarded**

Busse JW, Bhandari M, Guyatt GH, Schemitsch EH, Sanders D. A prospective multicentre randomized controlled trial to evaluate therapeutic ultrasound in the treatment of tibial fractures. (CIHR) TRUST \$449,102 and Smith & Nephew \$1,576,367 (Total \$2,025,469 from Apr. 2007- Apr. 2011)

Busse JW, Gauthier CA, Price D, Moore A, Riva J. A survey of Canadian family physician's attitudes towards chiropractic. Ontario Chiropractic Association \$2,500 (Jul 2010-Nov 2011)

Chau T, Busse JW, Devereaux PJ, Guyatt GH. Café Scientifique: Evidence-based medicine: Come meet the detectives. (CIHR) \$3,000 (2010)

Gignac MAM, Backman C, Lacaille D, Beaton DE, Badley EM. Striking a balance: Health and employment outcomes related to role overload and role balance among people with arthritis. (CIHR) \$357,564 (Feb 2010- Feb 2013)

Gotay C, Adair C, Amick BC, Corbett K, Storoschuk S. Interventions to increase workplace wellness. Canadian Cancer Society: \$583,111

Guzmán J, Alamgir H, Tompa E, Koehoorn M, Dhalla M. Documenting the economic and quality of life consequences of work injuries for healthcare workers in BC. WorkSafe BC: \$197,707 (2008-2010)

Hunt C, Breslin FC. Bridging the safety gap for post-secondary student workers. WSIB RAC: \$69,453 (2010-2011)

Jaglal S, Hogg-Johnson S, Beaton DE. An examination of fragility fractures that occur in Ontario workplaces. WSIB RAC: \$26,159 (2010-2011)

Koehoorn M, Barer M, Côté P, Hogg-Johnson S, McGrail K, McLeod C. Disability outcomes among injured workers: Does surgical setting or expedited payment make a difference? CIHR: \$350,085 at University of British Columbia (2007-2010)

Loisel P, MacEachen E. Knowledge synthesis on the core elements of intervention and implementation to foster the utilization of evidence-based RTW interventions for workers presenting with disability from musculoskeletal disorders. CIHR: \$100,000 (2009-2010)

Loisel P, Breslin FC, Hogg-Johnson S, MacEachen E, Tompa E, et al. CIHR Strategic Training Program in Work Disability Prevention. CIHR: \$1,950,000 (2009-2015)

Riva J, Busse JW, Konisberg E, Howard M, Chan A, Maheu T. Proposal to explore the impact of a brief exposure to complementary and alternative medicine on McMaster undergraduate medical students. Centre for Leadership in Learning \$96,150 (2010-2011)

Sale JEM, Beaton DE, Bogoch E, Gignac M, Hawker G, Jaglal S, Meadows L. What is the fracture patient's role in receipt of osteoporosis investigation and treatment? (CIHR) Operating Grant \$60,000 (Nov 2009- Nov 2010)

Salbach N, Brooks D, O'Brien K, Martino R, Irvin E, Howe J. Quality and clinical utility of functional walk tests among people with stroke: a systematic review. CIHR Knowledge Synthesis Grant: \$95,794 (2010-2011)

Wells R, McMillan K, Kramer D, Bigelow P, Naqvi S, Robson LS, Steenstra I. Developing and evaluating a workplace-level MSD physical risk factor survey: a researcher-labour collaborative project. WSIB RAC: \$86,947 (2009-2010) @ Waterloo

Wells R, Amick III BC, Steenstra I. Development of valid and reliable physical exposure measures for users of hand held mobile communication devices. WSIB RAC: \$29,782 (2009-2010) @ Waterloo

### **Pending in 2010**

Amick III BC, Swift M, Ibrahim S, Abbey S. Predictors of transplant recipients' return-to-work: A joint study by the UHN's multi-organ transplant program and IWH. CIHR: \$152,637 (2010-2012)

Amick III BC, Dondertman B, Robertson M, Robson LS, Steenstra I, Van Eerd D. Development and evaluation of a computer-based training program to prevent and manage musculoskeletal injuries in computer-based work environments. WSIB RAC: \$56,680 (2010-2011)

Beaton DE, Bogoch ER, Jain R, Jaglal S, Hawker G, Mamdani M, Gignac M, Cadarette S, Laupacis A, Zwarenstein M, Sale J. Evaluation of an osteoporosis screening program for fragility fracture patients (year 4). Ontario Ministry of Health and Long-Term Care (MOHLTC) \$350,000 ongoing (under review).

Busse J. Understanding opportunities for improved integration of chiropractic into Canadian mainstream healthcare. Canadian Chiropractic Research: \$20,000 (2010-2011)

Furlan AD, Campos J, Hebbert D, Pun C, MacDonald G. The effects of prescribed opioid analgesics on driving simulator performance. The Physicians' Services Incorporated (PSI) \$73,575.

Saunders R, Amick BC, MacEachen E, Mustard CA, Smith P, Tompa E. Remaking the patchwork quilt of support for injured or ill workers: policies to improve outcomes in the new world of work. Max Bell Foundation: \$207,530 (2011-2012)

Smith PM, Beaton DE, Ibrahim S, Mustard CA. Examining the impact of physical conditions and depression on the labour market participation of older working-aged Canadians: exploring differences by gender and sex. CIHR: \$133,700 (2010-2012)

Tompa E, Hogg-Johnson S, Mustard CA, Saunders R, Ballantyne P, Scott-Marshall H. Work disability and poverty. SSHRC: \$154,000 (2011-2013)

Tompa E, Grant K, Kapoor K, Robson L, Keown K, Irvin E. Economic evaluation of H&S programs: A training workshop for workplace parties. WSIB BTG: \$59,974 (2010-2011)

Wells R, Amick III BC. Potential for developing musculoskeletal pain when using netbook and tablet computers. OERC: \$27,130 (2010-2011)

## **Research Personnel Funding & Other Awards**

Beaton DE. 2010 Ontario Rehabilitation Research Advisory Network Leadership Award.

Beaton DE. 2010 Carolyn Thomas Award for the best scientific abstract in the AHPA (Arthritis Health Professionals Association) section of the Canadian Rheumatology Association, Quebec, Canada

Bombardier, Claire: CIHR Research Chair; CIHR Senior Scientist Award 2003-2010 – Administered at University Health Network

Busse JW. CIHR New Investigator Award 2008-2012: Trial to re-evaluate ultrasound in the treatment of tibial fractures.

Busse JW. CIHR New Investigator Award 2009-2014.

Busse JW. McMaster University, Faculty of Health Sciences Graduate Programs Outstanding Thesis Award (2010).

Busse JW. Inter-agency Advisory Panel on Research Ethics' Introductory Tutorial for the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS). Certificate of Completion issued 19 Feb 2010.

Carnide N. Vanier Canada Graduate Scholarship 2010-2013. CIHR: Analgesic prescriptions for work-related musculoskeletal disorders: Understanding utilization patterns, determinants, and impact on work disability.

Chesser SA. Provost Doctoral Entrance Award for Women. University of Waterloo 2010 (\$5,000)

Chesser SA. Health Services and Policy Research Award. Ontario Training Centre 2009-2010 (\$15,000)

Furlan AD. Health Policy Management and Evaluation (HPME). Alumni - Literary Award 2010 (\$500)

Kennedy CA, Beaton DE, Shupak R, Warmington K, Hogg-Johnson S. Poster: Longitudinal measures in cross-over trial show consistency in improvement across outcomes following an inter-professional education program for adults with inflammatory arthritis. *Carolyn Thomas Award*.

Kosny, Agnieszka: RACCWI Post-Doc Fellowship

Mansfield, Liz: Mustard Fellow

Smith, Peter: CIHR New Investigator Award 2008-2012: Examining labour market changes and their consequences on injury and illness in Canada: A focused examination of their effects on recent immigrants.

Tang K. Outcome Measures for Rheumatology Clinical Trials (OMERACT) Fellow Travel Bursary from the American College of Rheumatology (ACR) 2010 (\$5,000)

Tang K. Canadian Institutes of Health Research (CIHR) PhD Fellowship 2010-2014 (\$55,000 per annum)

Van Eerd D. CIHR-IPPH Scientists Award. CIHR: \$67,900



## Institute for Work & Health Staff – 2010

\* denotes departed staff

### Research

Amick, Ben; PhD, Scientific Director  
Ammendolia, Carlo, DC, PhD, Associate Scientist  
Beaton, Dorcas; BScOT, MSc, PhD, Scientist  
Bombardier, Claire; MD, FRCP(C) Senior Scientist  
Branco, Anadergh; Post-Doctoral Fellow\*  
Breslin, Curtis; PhD, Scientist (part-time)  
Busse, Jason; DC, PhD, Scientist  
Canga, Albana; BA, Administrative Assistant  
Cardoso, Siobhan; BA, Research Associate  
Carnide, Nancy; MSc, Research Associate, PhD Student  
Chambers, Andrea; PhD Student  
Chen, Cynthia; MSc, Research Associate, Analyst  
Chesser, Stephanie; MA, Research Associate  
Cheung, James; BA, Systems Support \*  
Clune, Laurie; Post-Doctoral Fellow \*  
Cole, Donald; MD, DOHS, MSc, FRCPC(C) Senior Scientist  
Couban, Rachel; MA MIS Library Sciences, Library Technician  
Cullen, Kim; MSc, Research Associate, PhD Student  
Davilmar, Arold; MSc, Research Associate, Analyst  
De Bruin, Linda; MA, Research Associate  
Dolinschi, Roman; MSc, Research Associate, Analyst  
Etches, Jacob; PhD, Post-Doctoral Fellow  
Fang, Miao; MSc, Research Associate, Analyst  
Furlan, Andrea; MD, PhD, Scientist  
Gnam, William; MD, PhD, Scientist\*  
Harlowe, Linda; Research Operations Administrative Coordinator  
Heath, Charmaine; Dip. Business Administration, Administrative Assistant  
Hogg-Johnson, Sheilah; PhD, Scientist, Ibrahim, Selahadin; MSc, Associate Scientist  
Irvin, Emma; BA, Director, Research Operations  
Kalcevich, Christina; MA, Research Associate  
Kelly, Allison; Dip. S.T. Administrative Editorial Assistant  
Kennedy Yee, Carol; MSc, Research Associate  
Khorasanchian, Hamid; Systems Support (part-time)  
King, Trevor; BA, MA, ProjectCoordinator

Kosny, Agnieszka; PhD, Scientist  
Lee, Hyunmi; MSc, Programmer Analyst  
Lever, Bev; MSW, MHSc, Liaison Partner Relations  
Liao, Qing; MSc, Research Associate, Analyst  
Lifshen, Marni; MA, Project Coordinator  
Liu, Joanna; BA, Diploma Library and Information Technology,  
Macdonald, Sara; QEHS Management Diploma, Research Associate  
MacEachen, Ellen; PhD, Scientist  
Mahood, Quenby; BA, Manager, Library Services  
Mansfield, Liz, Mustard Fellow  
Mansurova, Lyudmila, BSc, Administrative Assistant  
Maselli, Paolo; Network Administrator/Systems Analyst  
Moore, Ian; PhD, Post Doctoral Fellow\*  
Morassaei, Sara; BSc, Research Operations Coordinator  
Padkapayeva, Kathy BA; Administrative Assistant  
Pennick, Victoria; RN, BScN, MHSc, Managing Editor, Cochrane Back Review Group, Education & Training Co-ordinator  
Petch, Jeremy; Research Associate.  
Pugliese, Diana; BA, Administrative and Research Assistant  
Raktoe, Shanti; BSc, Administrative Assistant  
Robson, Lynda; PhD, Associate Scientist  
Roth Edney, Dara; MSW, RSW, Project Coordinator \*  
Sarnocinska-Hart, Anna; MA, Economics, Research Associate  
Saunders, Ron; PhD, Senior Scientist  
Schelkanova, Irina; Research Assistant, Cochrane Back Review Group \*  
Scott-Marshall, Heather; PhD, Post-Doctoral Fellow  
Severin, Colette; MSc, Project Coordinator  
Shen, Enqing; MSc, Analyst/Research Assistant  
Slack, Tesha; MSc, Project Coordinator  
Smith, Brendan, PhD Student  
Smith, Peter; PhD, Scientist  
South, Harriet, BA, Administrative Assistant  
Steenstra, Ivan; PhD, Associate Scientist  
Subrata, Peter; MSc, Research Associate  
Swift, Michael; MSc, Research Associate, Data Manager/Programmer  
Tang, Ken; PhD Student  
Tolusso, David; PhD, Associate Scientist

Tompa, Emile; MBA, PhD, Scientist

Van Eerd, Dwayne; MSc (Kin), MSc (HRM), Associate Scientist, PhD Student

Yao, Grant; BComm, Network Administrator/Systems Analyst

Yeung, Natalie; Research Assistant

### **Knowledge Transfer & Exchange**

Brenneman Gibson, Jane; BSc, MCISc, Director, Knowledge Transfer & Exchange

Buccat, Kristina; Dip. Radio and Television Production, Administrative Assistant

Dubey, Anita; BSc, BAA, Manager, Communications \*

Keown, Kiera; MSc, Senior KTE Associate

Kiff, Philip; MA, Communications Associate, Web & Production

Moser, Cindy; BA, Communications Associate/Research Associate

Neilson, Cynthia; MSc, KTE Associate

Paloo, Greer; BSc, Information & Events Coordinator

Russo, Katherine; Dip. Journalism, Communications Associate

### **Corporate Services**

Cicinelli, Mary; BA, CHRP, Director, Human Resources & Corporate Services

Maccarone, Dylan; Accounting Clerk

Mustard, Cameron; ScD, President

Sir, Cathy; CMA, Manager, Financial Services

## **Research/Professional Collaborations and Networks, Appointments and Offices 2010**

### AMICK, Benjamin

Chair: Data Safety Monitoring Board, Veterans Affairs Project CSP#560  
Member: NIOSH Board of Scientific Councillors  
Member: American Public Health Association  
Member: American Society for Safety Engineers  
Member: American Sociological Association  
Member: Society for Epidemiological Research  
Member: Human Factors and Ergonomics Society

### AMMENDOLIA, Carlo

Member: Canadian Chiropractic Association  
Member: Ontario Chiropractic Association  
Member: Canadian Memorial Chiropractic College Governors' Club  
Member: Canadian Chiropractic Research Foundation Allocating Committee  
Member: Canadian Chiropractic Rehabilitation Sciences  
Member: Ontario Acupuncture Council  
Member: Associate Scientist, the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders  
Member: KTE Hub Steering Committee  
Member: Steering Committee OSCHO Disability Prevention/RTW Project for HSAs

### BEATON, Dorcas

Scientist and Director: Mobility Clinical Research Unit, St. Michael's Hospital, Toronto  
Canadian Representative: Scientific Committee, International Federation of Societies of Hand Therapy  
Canadian Delegate: Council of the International Federation of Societies of Hand Therapy  
Chair: Research Committee, American Society of Elbow Therapists  
Chair: Meeting Planning, Policy and Evaluation committee at ISOQOL  
Founding Member: Canadian Society of Hand Therapists  
Member: American Society of Shoulder and Elbow Therapists, Member of Research Committee, 1995 –  
Member: Canadian Association of Occupational Therapists  
Member: College of Occupational Therapists of Ontario  
Member: Upper Extremity Collaborative Group (IWH, American Academy of Orthopaedic Surgeons)  
Member: The Arthritis Society of Canada, Medical Advisory Committee  
Member: International Society of Quality of Life Research  
Member: Advisory Committee, The Bone & Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders  
Member: Social Dimensions in Aging Panel

### BOMBARDIER, Claire

Fellow: Royal College of Physicians of Canada F.R.C.P.(C)  
Member: Advisory Board, SONORA Study, Abbott Pharmaceutical Company, 2000 –  
Member: AMGEN - Kineret Registry Steering Committee, 2002 –  
Member: Merck -Etoricoxib Outcomes Study Steering Committee, 2002 –  
Member: Merck Frosst Rheumatology Medical Advisory Council (MEDAC), 2002 –  
Member: AMGEN Global Advisory Board in Inflammation, 2003 –  
Member: COX-2 International Lifecycle Advisory Board, 2004 –  
Member: Canadian Arthritis Network - Research Management Committee, 2005 –  
Chair: Aleve Advisory Board (Bayer), 2006 –  
Member: CORRONA Board of Directors, 2007 –  
Member: Combinatorx Incorporated Scientific Advisory Board, 2007-2009  
Member: Advisory Board, WHO International Task Force on Neck Pain, 1999 –  
Member: American Federation for Clinical Research (AFCR)  
Member: Canadian Society for Clinical Investigation (CSCI)  
Member: Society for Medical Decision Making (SMDM)



Member: Canadian Rheumatism Society (CRS)  
Member: American Public Health Association (APHA)  
Member: American Rheumatism Association (ARA)  
Member: Canadian Medical Association (CMA)

BRENNEMAN GIBSON, Jane

Member: Planning Committee Ontario KTE Community of Practice  
Chair: HSA Liaison Committee  
Chair: KTE Hub Steering Committee  
Member: College of Audiologists and Speech-Language Pathologists of Ontario

BRESLIN, Curtis

Member: Ontario College of Psychologists  
Member: Canadian Psychological Association  
Member: Young Worker Delphi Panel, WSIB

BUSSE, Jason

Certified Fellow of the American Board of Disability Analysts  
Consultant: ATF Canada Corp; Prisma Health Canada Inc.  
Member: Canadian Chiropractic Association  
Member: Canadian Chiropractic Protective Association  
Member: Canadian Chiropractic Research Association  
Member: Canadian Pain Society  
Member: College of Chiropractors of Ontario  
Member: CLARITY (Clinical Advances through Research and Information Translation)  
Member: Ontario Chiropractic Association  
Member: Vocational Rehabilitation Association of Canada  
Member: Medical Reform Group of Ontario

CARNIDE, Nancy

Member: Canadian Association for Research on Work and Health  
Member: Canadian Society for Epidemiology and Biostatistics

COLE, Donald

Fellow: Royal College of Physicians and Surgeons of Canada, in Occupational Medicine and Community Medicine  
Head: Agriculture and Human Health Division of the International Potato Center  
Member: Canadian Association for Research on Work & Health  
Member: Canadian & Ontario Public Health Associations  
Member: Canadian Society of International Health  
Member: Centre for the Environmental Steering Committee  
Member: International Society for Environmental Epidemiology

COUBAN, Rachel

Member: Ontario Library Association (OLA), Ontario Health Library Associations (OHLA)  
Member: Cochrane Trials Search Coordinators Executive, 2007-2010

DOLINSCHI, Roman

Member: Canadian Pension & Benefits Institute

FURLAN, Andrea

Staff Physician: Medicine, St. Joseph's Health Centre, Toronto  
Staff Physician: Psychiatry, Toronto Rehabilitation Institute  
Adjunct Scientist: Research, Toronto Rehabilitation Institute  
Assistant Professor: Department of Medicine, Division of Psychiatry, University of Toronto

Member: Residency Program Committee, University of Toronto, Division of Psychiatry  
Member: International Society of Physical & Rehabilitation Medicine (ISPRM) Educational Committee  
Member: WSIB Drug Advisory Committee  
Member: Editorial Board of the Cochrane Back Review Group  
Member: Canadian Medical Association  
Member: Ontario Medical Association  
Member: Canadian Association of Physical Medicine and Rehabilitation  
Member: Canadian Pain Society  
Member: International Association for the Study of Pain  
Member: Educational Committee, International Society of Physical and Rehabilitation Medicine  
Member: Canadian Academy of Pain Medicine  
Member: Cochrane Collaboration Non-randomised studies Methods Group  
Assistant Professor: Department of Medicine, Division of Psychiatry, University of Toronto  
Review of appointment of Academic Staff, Teaching Division, School of Chinese Medicine, Hong Kong Baptist University  
Review of appointment of Academic Staff, Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel Grant Review Panel (Ad hoc External Grant Reviewer) for the following: AHRQ – US; Physician Service Incorporated (PSI); CIHR Randomized Trial; Workers' Compensation Board of British Columbia; CIHR, Industry Programs Branch

HOGG-JOHNSON, Sheila

Member: Statistical Society of Canada  
Member: Accreditation Committee of Statistical Society of Canada  
Professional Statistician: Statistical Society of Canada  
Member: Admissions Committee, Work Disability Prevention CIHR Work Disability Training Program  
Member: Canadian Association for Research on Work and Health  
Member: Workers' Compensation Research Group

IBRAHIM, Selahadin

Member: Statistical Society of Canada  
Professional Statistician: Statistical Society of Canada

IRVIN, Emma

Member: Publishing Policy Group of the Cochrane Collaboration  
Convenor: Cochrane Library Users Group

KENNEDY, Carol

Member: College of Physiotherapists of Ontario

KEOWN, Kiera

Member: Ontario Kinesiology Association  
Member: Canadian Association for Research on Work and Health Membership Subcommittee

KOSNY, Agnieszka

Executive Committee: Canadian Association for Research on Work and Health  
Member: 2010 Len Syme Committee  
Facilitator: Qualitative Journal Club

LEVER, H. Bev

Member: Canadian Council on Integrated Healthcare

MACEACHEN, Ellen

Member: Board of Directors (President), Executive and Program Committees, Canadian Association for Research on Work and Health  
Member: Program Executive Committee, Work Disability Prevention CIHR Strategic Training Program, University of Toronto

Member: Program Advisory Committee, Work Disability Prevention CIHR Strategic Training Program, University of Toronto  
Fellow: Steering Committee, Centre for Critical Qualitative Health Research, University of Toronto  
Member: Editorial Board, Journal of Occupational Rehabilitation  
Member: Canadian Association for S+Research on Work and Health  
Member: Canadian Anthropology and Sociology Association  
Member: British Sociological Association  
Member: IWH Qualitative Journal Club  
Member: RAACWI-WSIB Return to Work Blue Sky Group  
Member: Conference Executive Committee, Canadian Association for Research on Work and Health  
Member: Program Advisory Committee, Canadian Association for Research on Work and Health Conference

MAHOOD, Quenby

Member: Canadian Health Libraries Association

MUSTARD, Cam

Member: Research Advisory Council, WSIB of Ontario, 2001 –  
Member: Occupational Health and Safety Council of Ontario, 2002 –  
Member: Passport to Safety Standards and Advisory Board, 2002 –  
Member: Occupational Health and Safety Council of Ontario, 2002 –  
Member: Steering Committee, Toronto Region Research Data Centre, 2005 –  
Member: Steering Committee: Toronto Region Research Data Centre, 2005 –  
Member: *Health Reports* Editorial Board, Statistics Canada, 2007 –  
Member: Scientific Visitors Advisory Board, Liberty Mutual Research Institute for Safety, 2007 –  
Member: OHQC Performance Measurement Advisory Board, 2007-2010  
Affiliate: Centre for Health Services and Policy Research, University of British Columbia, 2008 –  
Member: Scientific Advisory Committee, INTERxVENT Canada, 2008 –  
Member: Advisory Board International Journal of Social Security and Workers Compensation, 2008 –  
Member: Performance Measurement Peer Review Panel, OHQC, 2008 –  
Member: Board of Advisors, RAND Center for Health and Safety in the Workplace, 2008 –  
Member: Board of Directors, Ontario Neurotrauma Foundation, 2008-2011  
Member: Editorial Advisory Board, Longwoods Review  
Member: Expert Advisory Committee, Canadian Health Examination Survey, Statistics Canada  
Vice-President: Board of the International Social Security Association (ISSA) Research Section

NEILSON, Cynthia

Ontario Federation of Teachers

Member: Canadian Association for Research on Work and Health

PENNICK, Victoria

Member: College of Nurses of Ontario

Member: Registered Nurses Association of Ontario

Member: Canadian College of Health Service Executives

ROBSON, Lynda

Member: Canadian Association for Research on Work and Health

Member: Canadian Evaluation Society

SAUNDERS, Ron

Chair: Program Committee, Canadian Association for Research on Work and Health 2010 Conference

Member: American Economics Association

Member: Advisory Committee for the Satellite Account of Non-profit Institutions and Volunteering

Member: Canadian Association for Research on Work and Health

Member: Community & Healthcare Advisory Council, Public Services Health & Safety Association

Member, Centre for Workplace Skills' Experts' Network

SCOTT-MARSHALL, Heather

Member: Canadian Association for Research on Work and Health

SEVERIN, Colette

Member: Canadian Public Health Association

SMITH, Peter

Member: Public Health Association of Australia

Member: Special Interest Group on Injury Prevention

Member: Canadian Association for Research on Work & Health

Member: Technical Committee: Canadian Standards Association, Review Injury Coding System

Member: Data and Performance Measurement Sub-Committee, Ministry of Labour Expert Panel

STEENSTRA, Ivan

Member: Workers' Compensation Research Group

Member: Dutch Society of Epidemiology (VVE)

Member: Dutch Society for Human Movement Sciences (VvBN)

Member: Scientific Committee, 3rd ICOH International Conference on Psychosocial Factors at Work

TOLUSSO, David

Member: Statistical Society of Canada

Member: Workers' Compensation Research Group

TOMPA, Emile

Member: Canadian Association for Research on Work and Health

Member: Workers' Compensation Research Group

Member: International Health Economics Association

Member: Planning Committee, Socio-political Challenges, Disability Prevention Program 2010

van der VELDE, Gabrielle

Member: Canadian Chiropractic Association

Member: Ontario Chiropractic Association

Member: International Society of Quality of Life Research

Member: Society for Medical Decision Making

Member: Scientific Secretariat, the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders

## Teaching, Educational and Service Activities

### AMICK, Ben

#### Teaching/Educational Role

Professor: Society and Health; Social Epidemiology/Social Justice; Research Design and Analysis in Behavioural Sciences, University of Texas School of Public Health, 2010 –

Professor: Behavioural Sciences, Epidemiology and Occupational Safety and Health, University of Texas Health Science Centre, 2007 –

Co-Director: Fogarty International Training Program in Injury and Trauma, University of Texas Health Science Centre 2006 –

Director: Occupational Injury Prevention Research Doctoral Training Program, University of Texas Health Science Centre, 2001 –

#### Service Activities

Ad-Hoc Reviewer: Workers Compensation Board, British Columbia

Ad-Hoc Reviewer: Workers Compensation Research Advisory Committee

Ad-Hoc Reviewer: Workers Compensation Board, Saskatchewan

Ad-Hoc Reviewer: Marsden Foundation, New Zealand, 2010

Editorial Board: Journal of Occupational Rehabilitation, 2010

### AMMENDOLIA, Carlo

#### Teaching/Educational Role

Assistant Professor: Dept Health Policy Management and Evaluation (HPME), University of Toronto

Tutor: Controlled Clinical Trials Graduate Course (HPME)

Lecturer: Introduction to Clinical Epidemiology (HPME)

Lecturer: Canadian Memorial Chiropractic College

Lecturer/instructor: Rheumatology Residents/Fellows, Mount Sinai Hospital

#### Service Activities

Reviewer: Canadian Chiropractic Association Journal

Reviewer: The Spine Journal

Reviewer: Spine

### BEATON, Dorcas

#### Teaching/Educational Role

Associate Professor: Dept of Occupational Sciences and Occupational Therapy, Faculty of Medicine, University of Toronto

Full Member: Graduate Department of Rehabilitation Sciences, University of Toronto, Toronto, Ontario; School of Graduate Studies (SGS), Graduate Department Health Policy, Management and Evaluation, Clinical Epidemiology Program, University of Toronto, Ontario.

Lecturer: Advanced Measurement course, University of Toronto

Coordinator: Introduction to Measurement, University of Toronto

Reviewer: College of Reviewers, Canada Foundation for Innovation.

#### Service Activities

Grant Committees: CIHR, The Arthritis Society, Hospital for Sick Children Foundation, SSHRC, WSIB Research Advisory Council

Journal Referee: Journal of Clinical Epidemiology, Medical Care, JAMA, International Journal of Epidemiology, Quality of Life Research, Spine, Journal of Rheumatology, Journal of Shoulder and Elbow Surgery, Journal of Bone and Joint Surgery

## BOMBARDIER, Claire

### Teaching/Educational Role

Co-Scientific Director: Canadian Arthritis Network (CAN)  
Director: Division of Rheumatology, University of Toronto  
Director: Clinical Decision Making and Health Care, Toronto General Research Institute  
Staff Physician: Rheumatic Disease Unit, Mount Sinai Hospital, Toronto  
Professor: Medicine/Health Administration, University of Toronto  
Guest Professor: University of Toronto, MSc, HAD 5302: Measurement in Clinical Research  
Guest Lecturer: University of Toronto, Clinical Epidemiology Students - PhD Thesis Course  
Instructor: IWH Systematic Reviews Workshop  
MSc Thesis Supervisor: Bindee Kuriya, Roberta Berard, Wanruchada Katchamart  
PhD Thesis Supervisor: Joel Gagnier  
Post Doctoral Fellowship Supervisor: Carine Salliot, Judith Trudeau, Edith Villeneuve (co-supervisor)  
Member: School of Graduate Studies, Division of Community Health, University of Toronto  
Member: School of Graduate Studies, Institute of Medical Science, University of Toronto

### Service Activities

Chair: Government of Canada, Canada Research Chair in Knowledge Transfer for Musculoskeletal Care, Tier I Award – Renewal 2009/04-2016/03  
Member: Multidisciplinary Clinical Research Center in Musculoskeletal Diseases  
Member: Canadian Arthritis Network Disease Management Core Instrument Committee@, 2001 –  
Chair, Data Safety and Monitoring Board (DSMB) “Study to Prospectively Evaluate Reamed Intramedullary Nails in Tibial Shaft Fractures Trial” (SPRINT). National Institute of Musculoskeletal and Skin Diseases (NIAMS), 2002 –  
Member: Multidisciplinary Clinical Research Center in Musculoskeletal Diseases (MCRC) Scientific Advisory Board, Dartmouth Medical School, 2003 –  
Member, Canadian Council of Academic Rheumatologists (CCAR) [as Director, Division of Rheumatology, University of Toronto] 2003 –  
Team Leader, Effectiveness Task Force, 2004 –  
Member: Journal of Clinical Epidemiology Policy Advisory Board, 2004 –  
Member: Pfizer - OSCARE Scientific Committee Meeting 2004 –  
Member: American Pain Society Clinical Guidelines Project – Low Back Pain Panel 2005 –  
Member: Canadian Rheumatology Association (CRA) Therapeutics Committee “Creating Canadian Guidelines for Treatment of Rheumatoid Arthritis [RA]”, 2005 –  
Member: Expert Task Force “Recommendations for the use of Biological (and Nonbiological) Agents in the Treatment of Rheumatoid Arthritis” for American College of Rheumatology (ACR), 2006 –  
Chair (International): Abbott 3E Initiative in Rheumatology – Phase III, 2008 –  
UCBeyond Rheumatoid Arthritis Scholarship Program, Toronto Arthritis Society, 2008 –  
Member: Alliance for the Canadian Arthritis Program (ACAP) Government Relations Committee [as CAN representative] 11/2007-current; Business Case Steering Committee 2008 –  
Panellist: American Pain Society Clinical Guidelines Project – Low Back Pain, 2005 –  
Review Committee: Best Research on Low Back Pain Commission de la santé et de la sécurité du travail  
Editorial Boards: American Journal of Medicine; Arthritis Care and Research  
Co-ordinating Editor: Cochrane Collaboration Back Review Group, Joint Bone Spine, International Edition; Nature Clinical Practice Rheumatology Journal Advisory Board; Journal of Clinical Epidemiology Advisory Board, 2004 –  
Journal Referee: Annals of Internal Medicine; Annals of Rheumatic Disease; Arthritis and Rheumatism; Arthritis, Care and Research; Canadian Medical Association Journal; JAMA; Journal of Rheumatology; Journal of Clinical Epidemiology; Journal of the Society for Medical Decision Making; Medical Care; New England Journal of Medicine

BRENNEMAN GIBSON, Jane

#### Teaching/Educational Role

Host: Ministry of Labour students and Mary Grace Borgfes Strategic Planning Coordinator

BRESLIN, Curtis

#### Teaching/Educational Role

Associate Professor: Dalla Lana School of Public Health, University of Toronto

PhD Thesis Co-supervisor: Andrea Chambers, Safer Needle Regulation in Ontario, 6/2010 to present

Guest Lecturer: CHL 5804, Health Behavior Change, University of Toronto

Graduate Selection Committee Member: Health Behaviour Science stream, Dept. of Public Health Sciences

External Reader, MSc: Rebeka Sujic, University of Toronto, 2010

#### Service Activities

Editorial Board: Journal of Occupational Health Psychology

Reviewer: Social Science and Medicine Journal; American Journal of Industrial Medicine; Occupational & Environmental Medicine

BUSSE, Jason

#### Teaching/Educational Role

Assistant Professor: Clinical Epidemiology & Biostatistics, McMaster University, 2008 –

Tutor Trainee: How to Teach Evidence Based Clinical Practice. CLARITY Research Group. McMaster University, Hamilton, ON. June 6 -11, 2010

#### Service Activities

Editorial Board: Journal of Occupational Health Psychology

Editorial Board: Journal of the Canadian Chiropractic Association

Grant Reviewer: Sick Kids Foundation

Journal Referee: Annals of Internal Medicine; Archives of Medical Research; British Journal of Sports Medicine; British Medical Journal; Canadian Medical Association Journal; Journal of the American Medical Association; Journal of General Internal Medicine; Journal of Manipulative and Physiological Therapeutics; Journal of the Canadian Chiropractic Association; Medical Care; Vaccine; Social Science and Medicine

COLE, Donald

#### Teaching/Educational Role

Associate Graduate Faculty: Kinesiology, University of Waterloo, 1997 –

Full Member: School of Graduate Studies, University of Toronto, 2004 –

Member: Doctoral and MHS Sc Selection Committees, PHS Epidemiology Program

Member: Program Committee, Community Medicine Residency Program, University of Toronto, 2001–

Co-Instructor: Epidemiology II, University of Toronto, 2003 –

Lead Instructor: Global Health Research Methods, University of Toronto, 2003 –

PhD Thesis Supervision (relevant): Dwayne Van Eerd (2007– ). Epidemiology, University of Toronto

PhD Doctoral Committees (relevant): Lauren Griffith. Meta-analysis of biomechanical risk factors for back pain. Epidemiology, University of Toronto: 2003 –

#### Service Activities

Grant Committees: L'institut de recherche en santé et en sécurité du travail Québec; Fonds de Recherches en Santé du Québec; CIHR

External Grant Reviews: CIHR, Michael Smith Foundation, Social Sciences and Humanities Research Council

Journal Referee: American Journal of Epidemiology; American Journal of Industrial Medicine; American Journal of Preventive Medicine; Applied Ergonomics; Canadian Medical Association Journal; Chronic

Disease in Canada; Injury Prevention; International Archives of Occupational and Environmental Health; Journal of Occupational and Environmental Medicine; Occupational and Environmental Medicine; Social Science and Medicine

#### ETCHES, Jacob

##### Service Activities

Assistant IWH Research Ethics Co-ordinator  
Assistant IWH Privacy Agreement Co-ordinator  
Journal Referee: International Journal of Epidemiology, Journal of Health Economics

#### FURLAN, Andrea

##### Teaching/Educational Role

Assistant Professor: Department of Medicine, Faculty of Medicine, University of Toronto  
Staff Physician: Musculoskeletal Program, Toronto Rehabilitation Institute – Hillcrest Centre  
Instructor: IWH Systematic Reviews Workshop  
PhD Thesis Committee Member: N Carnide, University of Toronto

##### Undergraduate teaching:

Facilitator for small group sessions. The University of Toronto Centre for the Study of Pain (UTCSP)  
Interfaculty Undergraduate Pain Curriculum  
Facilitator for small group sessions. The Pain Week. University of Toronto Centre for Study of Pain.

##### Graduate teaching:

Tutorial in Review Manager 4.2, Decision Analysis Course, Clinical Epidemiology, Health Policy Management & Evaluation Department, University of Toronto.  
Teacher Assistant, Systematic Reviews Course, Clinical Epidemiology, Health Policy Management & Evaluation Department, University of Toronto. (HAD 5308).  
The role of the Cochrane Review Group Co-ordinator, Systematic Review/Meta-Analysis (Cochrane Reviews) course. Clinical Epidemiology, University of Toronto (HAD 5308H)

##### Post-Graduate

Complex Regional Pain Syndrome, Residents of Physiatry, University of Toronto  
Myofascial Pain Syndrome, Residents of Physiatry, University of Toronto  
What is a case-control study? Residents and fellows of Radiology, University of Toronto  
Systematic reviews of diagnostic tests, Residents and fellows of Radiology, University of Toronto  
The Cochrane Library, Systematic Review Workshop for Family Medicine Postgraduate Education Program, University of Toronto.  
Lecturer and Tutor, Medical Acupuncture course of the “Hospital das Clinicas” of the Faculty of Medicine of the University of São Paulo

##### Service Activities

Conference Abstract Referee: 4<sup>th</sup> National Spinal cord Injury Conference 2010  
Journal Referee: Cochrane Collaboration Back Review Group, CMAJ, Pain, European Journal of Physical and Rehabilitation Medicine, The Journal of Rehabilitation Medicine, Physiotherapy Canada, BMC Chinese Medicine  
Grant Reviewer: AHRQ, CIHR (Clinical Trials)

#### HOGG-JOHNSON, Sheila

##### Teaching/Educational Role

Assistant Professor: Public Health Sciences, Faculty of Medicine, University of Toronto, 1995 –  
Assistant Professor: Health, Policy, Management and Evaluation, University of Toronto, 2001–  
Core Faculty Member: Graduate Program in Clinical Epidemiology and Health Services Research, University of Toronto, 1998 –  
Chair Mentor: Qualitative and Quantitative Methods Workshop, CIHR Work Disability Training Program  
Instructor: Research Methods, CIHR Work Disability Training Program



Teaching: CHL 7001 Advanced Quantitative Methods in Epidemiology, Module on Survival Analysis – Extending the COX Model/Advanced Methods in Epidemiology - Survival Analysis. University of Toronto  
Instructor: Privacy Policy Training, IWH  
PhD Thesis Committee Member: L Griffith, A Peruccio  
PhD Thesis Supervisor: Nancy Carnide, Gayane Hovhannisyan

#### Service Activities

Journal Referee: Canadian Medical Association Journal, Occupational and Environmental Medicine, Scandinavian Journal of Work, Environment and Health  
Special Consultant to the Editorial Board: The Spine Journal  
Assistant Editorial Board: European Spine Journal

#### IBRAHIM, Selahadin

##### Teaching/Educational Role

Lecturer: Public Health Sciences, Faculty of Medicine, University of Toronto, 2002 –  
Teaching: Module on Exploratory and Confirmatory Factor Analysis – Path Analysis and Structural Equation Modeling, CHL 7001 Advanced Quantitative Methods in Epidemiology, University of Toronto.

#### IRVIN, Emma

##### Teaching/Educational Role

Instructor: IWH Systematic Reviews Workshop  
Instructor: Privacy Policy Training  
Instructor: Systematic Reviews Course, University of Toronto, Health Policy, Management and Evaluation Graduate Program  
Seminar Series: Workplace-based return to work. School of Occupational and Public Health, Ryerson University

#### Service Activities

Convenor: Cochrane Library User Group Meeting; Freiburg, Germany: XVI Cochrane Colloquium

#### KENNEDY, Carol

##### Teaching/Educational Role

Lecturer: Physical Therapy, University of Toronto: 1996 –

#### Service Activities

Patient Safety Champion: College of Physiotherapists of Ontario, 2010 –  
Arthritis Health Professionals Association, Research Committee, 2008 –

#### KEOWN, Kiera

##### Teaching/Educational Role

Guest Lecturer: OHS 810 – Seminars, School of Occupational and Public Health, Ryerson University

#### Service Activities

Joint Health & Safety Committee Certified Member

#### KOSNY, Agnieszka

##### Teaching/Educational Role

Instructor: Women and Health. Institute for Gender Studies and Women's Studies, University of Toronto  
Co-Instructor, Occupational Health and Safety, Labour Studies/Health Studies, McMaster University

#### Service Activities

Reviewer: Journal of Occupational Rehabilitation, Disability and Rehabilitation

MACEACHEN, Ellen

Teaching/Educational Role

Assistant Professor (Status): Public Health Sciences, University of Toronto

Chair Mentor: Work Disability Prevention CIHR Strategic Training Program, University of Toronto

PhD Thesis committee member: Dana Howse, Dalla Lana School of Public Health, University of Toronto

Post-doctoral Supervisor: Elisabeth Mansfield

External Examiner, PhD Thesis, Rhysa Leyshon, Rehabilitation Science, University of Western Ontario

Mentor: Christian Stahl, PhD (National Centre for Work and Rehabilitation, Dept of Medical and Health Sciences, Linköping University, Sweden. WDP921 Scientific Communication. Topic: Cooperation between Swedish rehabilitation actors in a policy perspective (April-Oct)

Instructor: CHL5122H. Qualitative Research Practice, Dalla Lana School of Public Health, University of Toronto, 2005 –

Academic Mentor: Canadian Association for Research on Work and Health Student Day, 2010

Instructor: Methodology in Work Disability Prevention, Work Disability Prevention CIHR Strategic Training Program, University of Toronto, 2003 –

Service Activities

Member: Program Executive Committee, Work Disability Prevention CIHR Strategic Training Program, University of Toronto

Member: IWH Scientist Recruitment Committee

Member: IWH Mustard Post-Doctoral Award Committee

Reviewer: Social Science and Medicine, Journal of Occupational Rehabilitation, Policy and Practice in Health and Safety, Sociology of Health & Illness, Scandinavian Journal of Work, Environment and Health, Pain

Reviewer: WorkSafe Manitoba

Member: Planning Committee, Socio-political Challenges Session, Disability Prevention Program, 2010

MAHOOD, Quenby

Teaching/Educational Role

Instructor: IWH Systematic Reviews Workshop

Tutorial. Literature Searching. HAD 5302: Measurement in Clinical Research; IWH's Educational Influentials (EIs)

Dept of Health, Policy, Management and Evaluation. University of Toronto. January 20, 2010

MUSTARD, Cam

Teaching/Educational Role

Professor: Public Health Sciences, University of Toronto, July 2002 –

University of Toronto Dalla Lana School of Public Health

Review Panel Member: Comparative Program in Health and Society, Munk Centre for International Studies, University of Toronto

Service Activities

Chair: Strategic Teams in Applied Injury Research Review Committee, CIHR

Member: Scientific Visitors Advisory Board, Liberty Mutual Research Institute for Safety 2007 –

Member: Ontario Health Quality Council Performance Measurement Advisory Board, 2007 –

Member: Health Reports Editorial Board, Statistics Canada, 2007 –

Member: Fellowship Award Panel, Comparative Program on Health and Society, Munk Centre for International Studies, University of Toronto, 2004 –

Member, CIHR Michael Smith Prize in Health Research Review Committee, CIHR

Member: Board of Directors, Ontario Neurotrauma Foundation. 2008 – 2011

Member: Board of Advisors, RAND Center for Health and Safety in the Workplace. 2008 –

Reviewer: Policy Research Program, Department of Health, United Kingdom  
Promotion Review, Faculty of Medicine, University of Toronto  
Journal Referee: Editorial Advisory Board, Longwoods Review; Journal of Epidemiology and Community Health; Health Services Research Journal; American Journal of Public Health; Medical Care; Injury Prevention; Journal of Psychosomatic Research; Social Science and Medicine; Health Reports; HealthCare Policy; Canadian Medical Association

NEILSON, Cynthia

Service Activities

Joint Health & Safety Committee Member, Level 1&2

PENNICK, Victoria

Teaching/Educational Role

Lecturer: Dalla Lana School of Public Health, Faculty of Medicine, University of Toronto, 2005 –  
Mentor/Tutor: CHL5418 – Scientific Overviews in Epidemiology and Public Health, Dalla Lana School of Public Health, University of Toronto, 2008 –  
Member: Course Planning Committee, Determinants of Community Health Course, Faculty of Medicine, University of Toronto, 1992 –  
Tutor: Putting the person at the centre. University of Toronto Centre for the Study of Pain - Interfaculty Pain Curriculum. 2003 –  
Marking Student presentations: Determinants of Community Health Course (Years 1 & 2), Faculty of Medicine, University of Toronto, 1992 –

Service Activities

Reviewer: Cochrane Pain, Palliative and Supportive Care Review Group  
Reviewer: Canadian Physiotherapy Association Grants  
Reviewer: Nova Scotia Health Research Foundation: Knowledge Transfer/Exchange Grants  
Reviewer: Chiropractic & Osteopathy, BioMed Central

ROBSON, Lynda

Teaching/Educational Role

Guest Lecturer: OHS 810 – Seminars, School of Occupational and Public Health, Ryerson University

Service Activities

Grant Reviewer: WCB of Manitoba; Institution of Occupational Safety and Health (UK) Health and Safety in a Changing World Programme.  
External Reviewer: Accident Compensation Corporation, New Zealand – Review of Audit Methods used in Workplace Incentive Programs  
Ad-hoc Reviewer: American Journal of Industrial Medicine; Online Occupational Health & Safety Journal  
External Advisor: Office of the Auditor, Division of Audit Services, Denver, Colorado -- Department of Aviation Safety Culture: Performance Audit  
Presenter to JHSC and IRS Working Groups of the MOL Expert Advisory Panel  
Journal Referee: Safety Science, Sustainability, The Open Occupational Health & Safety Journal

SAUNDERS, Ron

Teaching/Educational Role

Associate Professor: School of Public Policy and Governance, University of Toronto

Service Activities

Scientific Officer: Expert Panel reviewing Ontario OHS Prevention & Enforcement System  
Ad hoc Reviewer: Centre for Workplace Skills  
Ad hoc Reviewer: Carthy Foundation

Reviewer: WorksafeBC  
IWH Plenary Committee

SCOTT-MARSHALL, Heather

Teaching/Educational Role

Assistant Professor (Status Only): Dalla Lana School of Public Health, University of Toronto

Service Activities

Journal Referee: Social Science and Medicine

Reviewer: Reports and Knowledge Products: National Collaborating Centre for Determinants of Health

STEENSTRA, Ivan

Teaching/Educational Role

Mentor: Esther van Kleef MSc Student Management, Policy-Analysis and Entrepreneurship in Healthcare  
VU University, Amsterdam, The Netherlands

Committee Member: Rhysa Leyshon PhD Candidate, School of Rehabilitation Sciences, University of  
Western Ontario

Service Activities

Reviewer: Spine and Occupational and Environmental Medicine, BioMed Central

Participant: CIHR Work Disability Program

Member: Public, Community & Population Health Grants Committee of CIHR 2009-2010.

SMITH, Peter

Teaching

Coordinator: Introduction to Measurement, University of Toronto

Co-Course Coordinator/Course Instructor: Measurement in Clinical Research, Health Policy,  
Management and Evaluation, Population Perspectives for Epidemiology, University of Toronto

Co-Course Organizer: IWH Measurement Workshop, 4-5 Apr 2010

Lecturer: Advanced Quantitative Methods in Epidemiology, Dalla Lana School of Public Health, University  
of Toronto

Service Activities

Reviewer: BMC Public Health; European Journal of Public Health; Journal of Psychosomatic Research;  
Research Quarterly for Exercise and Sport; Social Forces, Social Science and Medicine, Occupational  
Medicine, Critical Public Health, CMAJ

Scientific Officer: CIHR Strategic Teams in Applied Injury Research Panel.

Committee Member: Jas Chahal, MSc, Department of Health Policy Management and Evaluation,  
University of Toronto and Brendan Smith, PhD (Epidemiology), Dalla Lana School of Public Health,  
University of Toronto

Technical Committee: Canadian Standards Association

Working Group Member: Data and Performance Measurement Sub-committee, Ministry of Labour Expert  
Advisory Panel

TOLUSSO, David

Teaching/Educational Role

Assistant Professor: Dalla Lana School of Public Health, University of Toronto, 2009 –

Course Instructor: Biostatistics for Epidemiologists 1, University of Toronto, 2010

Service Activities

Reviewer: Statistics in Medicine; The Journal of Statistical Planning and Inference and Quantitative Finance; Canadian Journal of Statistics; Social Science and Medicine  
Journal Referee: Quantitative Finance

TOMPA, Emile

Teaching/Educational Role

Adjunct Assistant Professor: Public Health Sciences, University of Toronto. 2004 –  
Adjunct Assistant Professor: Economics, McMaster University, 2001 –  
Mentor: Disability Prevention Program, University of Toronto  
Guest Lecturer: Disability Prevention Program, University of Toronto  
Course Co-instructor: Contemporary Issues in the Economics of Health and Health Care (HRM791),  
McMaster University  
External Examiner: Kimi Uegaki PhD Thesis Defence, VU University, Amsterdam

Service Activities

Journal Referee: Journal of Occupational Rehabilitation; Ergonomics; Journal of Health Economics;  
Journal of Health Economics; International Journal of Health Services; Pain  
External Grant/Report Referee: Veterans Affairs Canada, Human Resources and Social Development  
Canada  
Reviewer: ZonMw, The Netherlands Organization for Health Research, 2010  
Reviewer: Pain, Ergonomics, Journal of Health Ergonomics, International Journal of Health Services,  
Journal of Occupational Rehabilitation  
Member: Planning Committee, Socio-political Challenges Session, Disability Prevention Program, 2010

## Adjunct Scientists

Dr. Peri Ballantyne – Assistant Professor, Department of Sociology, Trent University (since 2001)

Peri Ballantyne is an assistant professor in the Department of Sociology at Trent University in Peterborough, Canada. Her research interests include examining the social determinants of health such as work, retirement, income security, gender and age. She is also involved in health behaviour studies such as how people make decisions about medication and how those with chronic illness use the health-care system.

Dr. Philip Bigelow – Associate Professor, Department of Health Studies and Gerontology, University of Waterloo

Philip Bigelow is an associate professor in the Department of Health Studies and Gerontology at the University of Waterloo, and has an appointment in the Dalla Lana School of Public Health at the University of Toronto. Bigelow teaches courses in occupational health, risk assessment, and epidemiology and is a faculty member in the Collaborative PhD Program in Work and Health. He has had extensive field experience in occupational health and safety. His research is in the area of risk assessment and on the effectiveness of interventions to prevent occupational injuries and disease.

Ute Bültmann – Associate Professor, Department of Health Sciences, University Medical Center Groningen, University of Groningen, The Netherlands (since 2007)

Ute Bültmann is an associate professor in the Department of Health Sciences at the University Medical Center in Groningen (UMCG), the Netherlands. Her research interests include the epidemiology of work and health, the impact of the psychosocial work environment on workers' health including mental health, and the prevention of work disability. She is involved in collaborative projects on work and health in Denmark and Canada.

Dr. Linda J. Carroll – Associate Professor, Department of Public Health Sciences, University of Alberta, Canada (since 2004)

Linda Carroll is an associate professor of epidemiology in the Department of Public Health Sciences at the University of Alberta in Edmonton. She holds a Health Scholar Award from the Alberta Heritage Foundation for Medical Research. Her research focuses on psychological aspects of musculoskeletal disorders, with an emphasis on examining the interface between depression, coping, chronic pain disability and recovery from soft-tissue injuries.

Dr. J. David Cassidy – Senior Scientist, Division of Outcomes and Population Health, Toronto Western Hospital Research Institute (since 2001)

J. David Cassidy is director of Centre of Research Expertise in Improved Disability Outcomes (CREIDO) and a senior scientist in the Division Health Care and Outcomes Research at the Toronto Western Research Institute. He is also a professor of epidemiology at the Dalla Lana School of Public Health at the University of Toronto. Cassidy's research interests include musculoskeletal and injury epidemiology, as well as evidence-based health care.

Dr. Anthony (Tony) Culyer – Ontario Chair in Health Policy and System Design, HPME, University of Toronto (since 2007)

Tony Culyer has taught at more than a dozen universities around the world. He currently holds the Ontario Chair in Health Policy and System Design at the University of Toronto. He holds an honorary doctorate in economics from the Stockholm School of Economics. He is the founding co-editor of the Journal of Health Economics and has been on the boards of journals of health economics, medicine,

medical ethics, social science and medical law. He was the vice-chair of the National Institute for Health and Clinical Excellence in London, England, and was IWH's chief scientist from 2003 to 2006.

Dr. Kelly Joseph DeRango – DeRango & Associates, LLC, Kalamazoo, MI (since 2009)

Kelly DeRango is an economist and President of his company DeRango Associates. He has a background in economics and political science, earning a PhD at University of Wisconsin, Madison, May 2000. DeRango is a Visiting Professor at Kalamazoo College in Michigan. From 1999-2007, he worked as a Research Fellow at the Upjohn Institute for Employment Research (Kalamazoo, Michigan). He has worked on several cost-effectiveness assessments of ergonomic interventions and has a continued interest in collaborating on these issues.

Dr. Joan Eakin – Professor, Department of Public Health Sciences, Faculty of Medicine, University of Toronto (since 2001)

Joan Eakin is a sociologist and qualitative research methodologist in the Dalla Lana School of Public Health at the University of Toronto. Her research focuses on work and health, particularly the relationship between health and the social relations of work. Most of her research has centred on prevention and return to work in small workplaces. Current/recent studies include home health-care work, return to work policy and practice, front-line service work in Ontario's Workplace Safety and Insurance Board, physicians' role in compensation.

Dr. Renée-Louise Franche – Researcher, Solid Organ Transplant Unit, Vancouver General Hospital, B.C. (since 2009)

Renée-Louise works at the Solid Organ Transplant Unit, Vancouver General Hospital, Vancouver, BC. She is an adjunct professor at the Faculty of Health Sciences, Simon Fraser University, and the School of Public Health at the University of British Columbia. She is also an adjunct professor, Dalla Lana School of Public Health, University of Toronto. Her research focuses on developing a better understanding of how worker, workplace, insurer, and health-care factors contribute to safe, sustainable and healthy return to work following injury or ill health. She also conducts evaluations of work disability prevention interventions.

Dr. Monique Gignac – Scientist, Division of Outcomes & Population Health, Toronto Western Hospital (since 2003)

Monique Gignac is a senior scientist with the Toronto Western Research Institute at the University Health Network in Toronto. She is also an associate professor in the Dalla Lana School of Public Health at the University of Toronto and co-scientific director of the Canadian Arthritis Network. Dr. Gignac is a social psychologist who studies coping and adaptation to chronic stress, especially working with a chronic illness and disability.

Dr. David Gimeno – Associate Professor, Division of Occupational and Environmental Health Sciences, University of Texas School of Public Health (since 2008)

David Gimeno is a Senior Research Associate of The Whitehall II Study in the Department of Epidemiology & Public Health at the University College London Medical School.

David's research focuses on occupational and social epidemiology, with emphasis on the measurement of work organizational exposures and workers' health, social inequalities in health and the use of multilevel statistical models applied to occupational health. He is involved in collaboration projects in USA, Canada, Spain and the UK.

Dr. Michel Grignon – Assistant Professor, Departments of Gerontology and Economics, McMaster University (since 2005)

Michel Grignon is a professor in the Department of Economics and in the Gerontology Studies Program at McMaster University in Hamilton. His research interests include issues related to health-care financing, such as the impact of supplemental health-care insurance on welfare, equity in financing, and regulation of universal coverage for the poor. He also conducts research on the economics of health-care distribution and delivery, including determinants and patterns of health-care consumption across income and age groups.

Dr. Jaime Guzmán – Scientific and Medical Director for Disability Prevention, Occupational Health & Safety Agency for Healthcare in BC (since 2006)

Jaime Guzmán is chief scientific and medical director for the Occupational Health and Safety Agency for Healthcare in British Columbia. He is also assistant clinical professor of medicine at the University of British Columbia. His research interests relate to preventing disability in people with musculoskeletal injuries. His most recent publications deal with how to obtain sustainable disability prevention through collaborative action and how to best integrate the perspectives of different stakeholders into research.

Dr. Jill Hayden – Assistant Professor, Dalhousie University (since 2007)

Jill Hayden is an assistant professor in the Department of Community Health & Epidemiology, Dalhousie University, Halifax, Nova Scotia. Her research experience and expertise includes systematic review and meta-analysis methods, prognostic research, and musculoskeletal health - specifically low back pain.

Dr. C. Gail Hepburn – Assistant Professor, Department of Psychology, University of Lethbridge (since 2004)

Gail Hepburn is an assistant professor in the Department of Psychology at the University of Lethbridge in Alberta. She also holds an associate graduate faculty appointment in the Department of Psychology at the University of Guelph. Gail specializes in organizational psychology. Her research interests include the impact of workplace factors such as perceptions of justice or fairness, safety climate, workplace aggression, and work-family balance on employee well-being.

Dr. Linn Holness – Director, Gage Occupational and Environmental Health Unit (since 2001)

Linn Holness is director of the Centre for Research Expertise in Occupational Disease (CREOD), which is based at St. Michael's Hospital in Toronto. She is an associate professor in the Departments of Public Health Sciences; Medicine; and Health Policy, Management and Evaluation at the University of Toronto. Her main research interests are occupational skin and lung disease, occupational health services program delivery and workplace health and safety issues.

Dr. Bonnie Kirsh – Associate Professor, Department of Occupational Therapy, University of Toronto (since 2006)

Bonnie Kirsh is an associate professor in the Department of Occupational Science and Occupational Therapy at the University of Toronto, with cross appointments to the Graduate Department of Rehabilitation Science and the Department of Psychiatry. She conducts research in community mental health and employment, and has investigated Canadian principles and practices in work integration for people with mental illness. Kirsh is currently studying the mental health and well-being of injured workers in Ontario.



Dr. Mieke Koehoorn – Assistant Professor, Department of Health Care & Epidemiology, University of British Columbia (since 2004)

Mieke Koehoorn is an assistant professor in the Department of Health Care and Epidemiology, University of British Columbia (UBC) and a Michael Smith Foundation for Health Research Scholar. She also holds an appointment with the School of Occupational and Environmental Hygiene at UBC. Her research interests focus on the epidemiology of work-related musculoskeletal injuries, in particular among health-care workers. Koehoorn also conducts research on the relationship between work organization and the health of health-care workers, and the epidemiology of injuries among young workers.

Dr. (Desre) Dee Kramer – Associate Director, Networks & KTE, Centre for Research Expertise in Musculoskeletal Disorders (CRE-MSD), University of Waterloo (since 2005)

Dee Kramer is associate director at the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD) at the University of Waterloo. She is a research assistant professor in the Department of Kinesiology at the University of Waterloo. Her research interests are in knowledge transfer, diffusion of innovation, adult education, and organizational change in the construction, transportation, electrical utilities and manufacturing sectors. She is an adjunct professor in the School of Occupational and Public Health at Ryerson University. She teaches courses within Ryerson's certificate program in occupational health and safety.

Dr. Louise Lemieux-Charles – Associate Professor and Chair, Department of Health Policy, Management & Evaluation, University of Toronto (since 2000)

Louise Lemieux-Charles is chair of the Department of Health Policy, Management and Evaluation at the University of Toronto. She is involved in several research projects examining issues of evidence and decision-making in health-care organizations and management of organizational and team performance. Her research interests are in the areas of performance management, health human resource management, organizational learning, knowledge transfer and organization of health systems.

Dr. Katherine Lippel – Chair on Occupational Health and Safety Law, Law Faculty, University of Ottawa (since 2006)

Katherine Lippel is a professor in the Faculty of Law at the University of Ottawa and holds the Canada Research Chair on Occupational Health and Safety Law. Lippel specializes in legal issues relating to occupational health and safety and workers' compensation and has authored several articles and books in this area. Her research interests include work and mental health; health effects of compensation systems; policy, precarious employment and occupational health; women's occupational health; and regulatory issues in occupational health and safety.

Dr. Christopher McLeod – Associate of the Centre for Health Services and Policy Research at the University of British Columbia (since 2009)

Chris McLeod is a Postdoctoral Fellow in the College for Interdisciplinary Studies, Associate Faculty, School of Population and Public Health, and an Associate of the Centre for Health Services and Policy Research at the University of British Columbia. Dr. McLeod has a Masters in economics from McMaster University and PhD in population and public health from the University of British Columbia. Dr. McLeod has extensive experience conducting research on occupational health and safety policy in British Columbia and has expertise with the WorkSafeBC claims data and firm-level measures. He is a key research member of a research partnership that UBC has had with WorkSafeBC for the past six years that seeks to develop and use WorkSafeBC data in conducting policy relevant OHS research. More broadly, Dr. McLeod is developing a research program focussed on understanding whether and how societal and institutional factors matter in reducing work-related health inequities.

Dr. Anne Moore – Assistant Professor, School of Kinesiology and Health Science, York University (since 2004)

Anne Moore is an assistant professor in the School of Kinesiology and Health Science at York University in Toronto. Her research interests include physical exposure assessment for work-related musculoskeletal disorders of the upper limb, occupational assessment and modeling of the upper limb during repetitive manual tasks. She is particularly interested in work-rest cycles and has used psychophysical adjustment approaches to assess acceptable demands on the hands during manual tasks.

Dr. Carles Muntaner – Chair in Psychiatry and Addictions Nursing Research, Social Policy and Prevention Research Department, CAMH (since 2004)

Carles Muntaner is the Psychiatry and Addictions Nursing Research Chair, Social Equity and Health Section at the Centre for Addiction and Mental Health (CAMH). He is also professor of nursing, public health sciences and psychiatry at the University of Toronto. Muntaner's research focuses around social class, politics, work organization and health within a global perspective. He is the recipient of the Wade Hampton Frost award of the American Public Health Association and a chair of the Employment Conditions HUB of the WHO Commission on Social Determinants of Health.

Dr. W. Patrick Neumann – Associate Professor, Department of Mechanical and Industrial Engineering, Ryerson University (since 2006)

Patrick Neumann is an assistant professor in the Department of Mechanical and Industrial Engineering at Ryerson University in Toronto. Neumann has been engaged in both epidemiological studies of low-back pain in the auto sector and in ergonomic intervention research. Dr. Neumann's research now focuses on improving work systems, system design, and designing work systems that are both highly competitive and humanly sustainable work systems through improved design processes and the development of human factors simulation tools.

Dr. Aleck Ostry – Tier 2 Canada Research Chair in the Social Determinants of Community Health, University of Victoria (since 2003)

Aleck Ostry is an assistant professor in the Faculty of Social Sciences at the University of Victoria. He is a Canada Research Chair (Tier 2) in the Social Determinants of Community Health and Michael Smith Foundation for Health Research Scholar. Ostry conducts research on the social determinants of health with a focus on workplace health, nutrition policy and health, and rural and northern health.

Dr. Glenn Pransky – Director, Center for Disability Research, Liberty Mutual Research Center for Safety & Health (since 2001)

Glenn Pransky is director of the Center for Disability Research at the Liberty Mutual Research Center for Safety and Health in the United States. He holds appointments at the University of Massachusetts in its medical school and School of Public Health, as well as the Harvard School of Public Health's Department of Occupational and Environmental Health. His research interests are in disability and outcome measurement, particularly for work-related musculoskeletal disorders.

Dr. Susan Rappolt – Associate Professor, Rehabilitation Sciences Building, University of Toronto (since 2004)

Susan Rappolt is an occupational therapist and sociologist. She is chair of the Department of Occupational Sciences and Occupational Therapy at the University of Toronto. She is also senior scientist at the Toronto Rehabilitation Institute. Rappolt is studying the effectiveness of occupational therapy for sustained re-engagement work roles following illness or injury. She also conducts research in knowledge translation and exchange that focus on models for research use in clinical practice, and organizational capacity to support evidence-based professional practices.

Dr. Robert Reville – Director, RAND Institute for Civil Justice (ICJ) (since 2003)

Robert Reville is director of the RAND Institute for Civil Justice (ICJ). He holds a PhD in economics from Brown University. As a labour economist, he has a national reputation in the United States on workers' compensation policy and the impact of disability on employment. He has written extensively on workers' compensation in California, New Mexico and other states. Reville is a member of the Board of Scientific Counsellors of the National Institute for Occupational Safety and Health (NIOSH)

Dr. Harry Shannon – Professor, Program in Occupational Health and Environmental Medicine, McMaster University (since 2004)

Harry Shannon trained in the United Kingdom in mathematics and statistics. He is a professor in the Department of Clinical Epidemiology & Biostatistics at McMaster University, where he has been a faculty member since 1977. He also holds an appointment in public health sciences at the University of Toronto. He is a past president of the Canadian Association for Research on Work and Health (CARWH), and has published extensively in this field. Shannon's research interests include musculoskeletal and other work-related injuries and the relationship between work stress, workplace organization, and health and safety.

Dr. Nancy Theberge – Professor, Department of Kinesiology, University of Waterloo (since 2003)

Nancy Theberge is a professor in the Departments of Kinesiology and Sociology at the University of Waterloo. She teaches courses in the sociology of health; work and health; and social aspects of injuries in sport and work. Theberge conducts research on participatory ergonomics (PE) and the social factors related to successful implementation of PE programs. She has a related research program on the professional practices of ergonomists and human factors engineers.

Dr. Gabrielle van der Velde – Scientist, Toronto Health Economics & Technology Assessment Collaborative (since 2008)

Gabrielle van der Velde is a scientist at the Toronto Health Economics and Technology Assessment (THETA) Collaborative, and a scientific associate in the Division of Decision Making and Health Care Research, Toronto General Research Institute, University Health Network. Her work at THETA focuses on health technology assessment, including systematic review, meta-analysis and economic evaluation. Her research expertise also includes the measurement of health-related quality-of-life, including Rasch analysis of health instruments and valuation of health for economic evaluation.

Dr. Maurits van Tulder – Epidemiologist, Institute for Research in Extramural Medicine and Vrije Universiteit Medical Centre, The Netherlands (since 2003)

Maurits van Tulder is an epidemiologist at the Department of Health Sciences and the EMGO Institute of the VU University in Amsterdam, the Netherlands. He is also co-editor of the Cochrane Collaboration Back Review Group. van Tulder is the author of many scientific papers in peer-reviewed scientific journals and has written several books and book chapters. His interests are in evidence-based practice and include trials, systematic reviews and economic evaluations of diagnostic and therapeutic interventions for musculoskeletal disorders. He also participated in or chaired several guideline committees on back pain.

Dr. Richard Wells – Professor, Department of Kinesiology, University of Waterloo (since 2001)

Richard Wells is a professor in the Department of Kinesiology at the University of Waterloo (UW) and director of the Centre of Research Expertise in Musculoskeletal Disorders (CRE-MSD). He is also the director of UW's Ergonomics & Safety Consulting Service, which is an information dissemination and consulting centre. He specializes in applied mechanics as it applies to human function and injury. For the last decade, his main research and training interests have been work-related musculoskeletal disorders of the upper-extremity and low back in industrial and office settings.

Dr. Kathryn Woodcock – Associate Professor, School of Occupational and Public Health, Ryerson University (since 2001)

Kathryn Woodcock is an associate professor in the School of Occupational and Public Health at Ryerson University in Toronto. Her research interests include the application of human factors engineering to occupational and public safety issues of human performance and error, interface design, accident investigation and safety inspection expertise, practices, and tools, and disability and accessibility, particularly deafness and hearing loss.

## Glossary

A	ACE	Association of Canadian Ergonomists
	ACPAC	Advanced Clinician Practitioner in Arthritis Care
	ACR	American College of Rheumatology
	ALBP	Acute Low Back Pain
	AMA	American Medical Association
	APA	American Psychological Association
	ARHP	Association of Rheumatology Health Professionals
	AWCBC	Association of Workers' Compensation Boards of Canada
B	BRG	Cochrane Back Review Group (CCBRG) or Cochrane Collaboration Back Review Group)
C	CAMH	Centre for Addiction & Mental Health
	CARWH	Canadian Association for Research on Work and Health
	CCA	Canadian Chiropractic Association
	CCHS	Canadian Community Health Survey
	CCOHS	Canadian Centre for Occupational Health and Safety
	CHSRF	Canadian Health Services Research Foundation
	CIAR	Canadian Institute for Advanced Research
	CIHR	Canadian Institutes of Health Research
	CLUG	Cochrane Library Users' Group
	CMA	Canadian Medical Association
	CMCC	Canadian Memorial Chiropractic College
	COA	Canadian Orthopaedic Association
	CPA	Canadian Physiotherapy Association
	CPHA	Canadian Public Health Association
	CPHI	Canadian Population Health Initiative
	CPRN	Canadian Research Policy Networks
	CPSO	College of Physicians and Surgeons of Ontario
	CRE-OD	Centre for Research Excellence – Occupational Disease
	CRE-IDO	Centre for Research Expertise in Improved Disability Outcomes
	CRE-MSD	Centre for Research Excellence – Musculoskeletal Disorders
CSAO	Construction Safety Association of Ontario	
CSEB	Canadian Society for Epidemiology and Biostatistics	
CURA	Community-University Research Alliance	
D	DASH	Disabilities of the Arm, Shoulder and Hand
E	EBP	Evidence-based Practice
	EI	Educational Influential
	EPICOH	Epidemiology in Occupational Health
	EUSA	Electrical & Utilities Safety Association
H	HCHSA	Health Care Health & Safety Association
	HCP	Health Care Provider
	HRDC	Human Resources Development of Canada
	HSALC	Health and Safety Association Liaison Committee
	HSAs	Health and Safety Associations
	HWP	Healthy Workplace
	HWW	Health Work & Wellness Conference
I	IAPA	Industrial Accident Prevention Association
	ICES	Institute for Clinical Evaluative Sciences
	ICOH	International Commission of Occupational Health

	ILO INCLEN IPPH	International Labour Organization International Clinical Epidemiology Network Institute of Population and Public Health (CIHR)
J	JCQ JHSC	Job Content Questionnaire Joint Health and Safety Committee
K	KTE KTEAC KTE C of P	Knowledge, Transfer & Exchange Knowledge, Transfer & Exchange Advisory Committee KTE Community of Practice
L	LAD LBP LTD	Longitudinal Administrative Databank Low-back pain Long Term Disability
M	MOH-LTC MOL MSK	Ministry of Health and Long Term Care Ministry of Labour Musculoskeletal
N	NCE NHS NIH NICE NIOSH NLSCY NOIRS NORA NPHS	Networks of Centres of Excellence National Health Service The National Institutes of Health National Institute for Clinical Excellence National Institute for Occupational Safety and Health (USA) National Longitudinal Survey of Children and Youth National Occupational Injury Research Symposium (USA) National Occupational Research Agenda National Population Health Survey
O	OCHS OEA OEMAC OFL OHA OHCOW OHIP OHN OKA ONA OOHNA OSSA	Ontario Child Health Study Office of the Employer Adviser Occupational & Environmental Medical Association of Canada Ontario Federation of Labour Ontario Hospital Association Occupational Health Clinic for Ontario Workers Ontario Health Insurance Plan Occupational Health Nurse Ontario Kinesiology Association Ontario Nurses Association Ontario Occupational Health Nurses Association Ontario Service Safety Alliance
P	PHS POCKET PSHSA	Public Health Sciences, University of Toronto Physicians of Ontario Collaborating for Knowledge Exchange & Transfer Public Services Health & Safety Association
Q	QoLR	Quality of Life Research
R	RFP RNAO RPNAO RSI RTW	Request for Proposals Registered Nurses Association of Ontario Registered Practical Nurses Association of Ontario Repetitive Strain Injury Return-to-work
S	SAC SER	Scientific Advisory Committee Society for Epidemiologic Research

	SLID	Survey of Income & Labour Dynamics
	SR	Systematic Review
	SRC	Systems Review Committee
	SSHRC	Social Sciences and Humanities Research Council of Canada
	Star/SONG	Star/Southern Ontario Newspaper Guild
T	TENS	Transcutaneous electrical nerve stimulation
U	UE	Upper Extremity
	UHN	University Health Network
W	WCB	Workers' Compensation Board
	WMSDs	Work-related Musculoskeletal Disorders
	WSIB	Workplace Safety & Insurance Board
	WSN	Workplace Safety North
	WSPS	Workplace Safety & Prevention Services
	WSIB/RAC	Workplace Safety & Insurance Board Research Advisory Council