



INSTITUTE
FOR WORK & HEALTH
INSTITUT DE RECHERCHE
SUR LE TRAVAIL ET
LA SANTÉ

Accomplishments Report 2005

Research, Knowledge Transfer & Exchange and Activities

**Prepared for the
Scientific Advisory Committee Meeting
6-7 March 2006**



INSTITUTE
FOR WORK & HEALTH

INSTITUT DE RECHERCHE
SUR LE TRAVAIL ET
LA SANTÉ

**Accomplishments Report 2005
Research, Knowledge Transfer & Exchange**

**Prepared for the Scientific Advisory Committee Meeting
6-7 March 2006**

**Institute for Work & Health
481 University Avenue, Suite 800
Toronto, ON Canada
M5G 2E9**

**Telephone: 416-927-2027
Fax: 416-927-4167
Website: www.iwh.on.ca**

Table of Contents

Introduction to the 2005 Year End Report on Research and KTE	1
Population Workforce Studies Program	3
Behavioural Consequences of Insurance and Regulation.....	5
Systematic Review of the Literature on Workers' Compensation System and Occupational Health and Safety Features and Their Consequences for Work-related Injury Experiences (860)	7
Evaluating the Effects of Experience Rating in Ontario (457)	9
The Impact of Experience Rating and Occupational Health and Safety on Claims Experiences in Ontario (416)	11
High Risk Firms Initiative (432).....	12
Dynamics of Parallel Systems of Finance: Interactions between Canada's Workers' Compensation Systems and Public Health Care Systems (462)	13
Understanding Disability Insurance in Canada: Issues and Research Opportunities (404).....	13
WSIB Lost-time Injuries and Income Sources Post-injury (406)	14
Evaluating Benefit Changes in British Columbia: The Amended Workers' Compensation Act, 2002 (422)	17
An Ethnographic Study of Injured Workers' Complex Claims Experience (244)	18
CURA: Workers' Compensation and the Consequences of Work Injury.....	19
Labour Market Experiences and Health	21
Ten-year Mortality Follow-up for Occupations in the 1991 Canadian Census (461).....	23
Health and Labour Market Trajectories (448)	23
Canadian Trends in Socioeconomic Inequality in Avoidable Mortality: 1985-2002 (403).....	24
Human Capital Development (438).....	26
Early Childhood Determinants of Success in the Transition to Adult Social Roles in a Cohort of Canadian Children (755)	27
Work Injuries and Teens (451/442)	29
Prevalence and Determinants of Work-related Injuries Among Young Workers in Ontario and British Columbia (408)	32
Work and Work-related Injuries Among High School Students in British Columbia (234)	34

Table of Contents

Systematic Review: Risk Factors for Work Injury Among Youth (409).....	36
Under-employment and Contingent Work (486).....	38
Precarious Employment and People with Disabilities (Community-University Research Alliance - CURA) (402).....	41
The Impact of Multiple Roles and Gender Role Beliefs on Health and Health Behaviours in Parents of Young Children (109).....	43
Social Inequalities in Mental Illnesses in the Canadian Community Health Survey Cycle 1.2 (304).....	45
KTE in Population Workforce Studies.....	46
Workplace Studies Program	49
Workplace Interventions and Evaluations.....	51
Evaluation of Overhead Patient Lifting Devices in Ontario (252).....	54
Prospective Nursing Care Model (208).....	54
WMSD: Evaluating Interventions Among Office Workers (430).....	55
Workplace Musculoskeletal Health Intervention Research Program (WHIR) (216).....	56
Evaluating a Partner-based Participatory Intervention for Musculoskeletal Disorders in a Medium Workplace (270).....	57
Evaluation of the Impact of a Participatory Ergonomics Intervention (CAW/OHCOW) (238).....	58
Evaluation of Sustainability of Ergonomic Interventions (242).....	58
Exploring Organizational Factors and Safety Climate in the Implementation of an Ergonomic Intervention (229).....	59
Evaluation of a HSA-initiated Collaborative Partnership to Implement Participatory Ergonomic Programs (233).....	59
Exploration of the Feasibility of Participative Interventions to Reduce MSD in the Construction Sector (262).....	60
Evaluation and Sustainability of Ergonomic Interventions (228).....	60
Systematic Review of Computer-related Office Interventions to Improve Musculoskeletal and Visual Health (970).....	61
Review of Occupational Health and Safety Audits (955).....	63

Table of Contents

Systematic Review: Effectiveness of Education and Training Strategies for the Protection of Workers (975).....	65
Manager Commitment in New Economy Organizations (222)	66
Evaluating the Effect of Transformational Leadership on MSK Disorders and Minor Injuries in the Service Sector (275).....	66
The Logic of Practice: An Ethnographic Study of WSIB Front-line Service Work with Small Businesses (227)	67
Are Non-Profit Organizations Healthy Workplaces? Working Conditions and Occupational Health and Safety of Paid Employees and Volunteers (219).....	67
Systematic Review of Studies that Undertake Economic Evaluation of Workplace Interventions Directed at Primary and Secondary Prevention (960).....	69
Methodologies for the Economic Evaluation of Workplace Interventions (218)	70
KTE in Workplace Studies	71
Health Services Research Program	73
Measurement of Health and Function	75
Measurement Methodology Studies (925).....	76
Development and Testing of the DASH Outcome Measure - DASH Instrument (425).....	76
How Are You Now? Testing a Model of Recovery from the Patient’s Perspective One Year After a Traumatic Fracture of an Extremity (115).....	77
The Measurement of Work Disability/Disability at Work (117/910)	78
Disability While at Work: Measuring the Progression of At-Work Disability and Workplace Productivity Loss (121).....	78
Validation of a Classification System for Work-Related Disorders of the Shoulder and Elbow (124)	79
Epidemiology of Disability	81
The Relationship Between Impairment, Activity Limitations, Participation Restrictions and Markers of Recovery in Individuals with MSK Disorders: A Validation Study of Two Conceptual Frameworks (826).....	83
The Arizona State University Healthy Back Study: A Study of the Cost Effectiveness of Chiropractic Versus Medical Care in Returning Injured Workers with Occupational Low Back Pain to Work (555)	86

Table of Contents

What are the Key Modifiable Personal and Environmental Factors that Prevent Disability in People with Back Pain? A Consensus Using Delphi and Q-card Methodologies (111).....	88
The Bone and Joint Decade 2000-2010 Task Force On Neck Pain and Its Associated Disorders (550)	90
The Epidemiology and Primary Care Utilization for Occupational Neck Pain in Ontario (370)	91
Decision Modeling and Economic Evaluation of Management Strategies for Neck Pain (122).....	93
Occupational Mild Traumatic Brain Injury in Ontario: Identification, Prognosis and Health Care Utilization (165).....	93
Studying the Health of Health Care Workers (810).....	94
Investigating the Consequences of Work-related Injuries Among Young Workers in British Columbia (248).....	96
Evidence Based Practice.....	97
Cochrane Collaboration Back Review Group: Systematic Reviews of the Scientific Literature on Spinal Disorders (440, 670)	99
Systematic Review of Conservative Treatment Interventions for Chronic Musculoskeletal Pain (965).....	102
Adherence to Clinical Guidelines for Plain Film Radiography in Acute Low Back Pain Among Chiropractic Trainees (680)	103
Development of a Framework to Identify Clinically Useful Predictive Factors for Low Back Pain (130)	105
Back Guide/Linkages/Ontario Occupational Health Nurses' Association Journal (830, 515, 345).....	106
Prevention of Work Disability.....	107
Workplace-Based Return-to-Work (RTW) Interventions: A Systematic Review of the Literature (142)	109
Determinants of Return-to-Work: Applying the Readiness for Change Model (341).....	111
Effects of Return-to-Work on Health-Related Quality of Life in HIV/AIDS (756).....	111
Training Initiatives in Work Disability Prevention (144)	112
Mental Health Disorder, Treatment and Work Disability in the NPHS (560).....	112
The Economic Costs of Mental Disorders, Alcohol and Illicit Drugs in Ontario: A Cost-of-Illness and Microsimulation Study (231)	113
KTE in Health Services Research Program.....	114

Table of Contents

Data & Information Systems Program	117
Statistical Methods & Data Tools.....	119
Workplace Safety & Insurance Board Data Routine Statistics (845)	121
WSIB Denominators (846)	121
Data Dictionary (301)	122
Keyword Project (311).....	123
Integrated Information Database (307).....	123
Development of an Instrument Database and Questionnaire Design Tools (835).....	124
Systematic Review Program	125
Education & Methodological Development	127
Systematic Review Workshop (114)	128
Methodological Developments in Systematic Reviews (135)	128
Chief Scientist’s Supplementary Program of Research.....	129
Knowledge Transfer & Exchange	130
Building Stakeholder/Audience Relationships.....	133
Building Clinical Networks	133
Workplace Parties Network	134
Building Capacity.....	135
Building Stakeholder Capacity	135
Building KTE Capacity.....	136
Corporate Communications.....	137
Communications	137

Table of Contents

Activity Report

Journal Articles: Peer Reviewed	139
Journal Articles Forthcoming or Submitted: Peer Reviewed	143
Letters to Editor & Commentaries	148
Contributions to Books.....	149
Contributions to Books: Forthcoming	149
Abstracts.....	150
Other Papers, Unpublished Reports and Reviews	152
IWH Working Papers	153
Media Articles by Quarter	155
External Scientific/Academic Presentations.....	158
Educational, Professional, Policy & Other Presentations and Consultations	164
Local and Provincial.....	164
National	168
International.....	169
Plenaries	170
Grants and Awards	
Grants and Awards Funded	173
Research Grants Pending.....	177
Research Personnel Funding	178
Research/Professional Collaborations and Networks, Appointments and Offices.....	179
Teaching, Educational and Service Activities	185
Adjunct Scientists.....	196
IWH Staff – 2005	206
Glossary.....	211

Introduction to the 2005 Year End Report on Research and KTE

The Institute for Work & Health is an independent not-for-profit organization whose mission is to conduct and share research with workers, labour, employers and policy makers to promote, protect and improve the health of working people. The Institute has three core functions: Research, Knowledge Transfer & Exchange (KTE), and Corporate Services. In this report we focus on the activities of the Research and KTE functions.

Our research involves applying a transdisciplinary approach to a range of occupational health and safety matters, particularly the prevention of injury and disability, the effectiveness of treatment modalities, and factors influencing the safety, timeliness and permanence of return to work. We have a special interest in work-related musculoskeletal conditions (which constitute approximately 70 per cent of disability compensation claims involving time lost from injury) and have 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 schemes and their behavioural consequences.

We provide training and mentorship for the next generation of work and health researchers and others by sponsoring masters, PhD students, Post-doctoral colleagues and through our fellowship seminars and workshop programs.

The goal of our KTE activity is to place research knowledge in the hands of key decision makers in a timely, accessible and useful manner. Since 1990 we have provided evidence-based products to inform and assist clinicians, policy makers, employers, labour and other researchers. We also provide evidence to support the policy development processes of federal and provincial institutions and other organizations in Canada.

Research at the Institute

The Institute's Research Department is organized into five programs: the Population/Workforce Program; the Workplace Studies Program; the Health Services Research, Monitoring and Evaluation Program; the Data and Information Systems Program; and a newly-created Systematic Reviews Program. These programs exist primarily for internal organizational purposes. Each comprises a set of projects organized into themes which often cut across programs and brings together research topics and methods having substantial elements in common.

Program: Population/Workforce Studies
Themes

- ▶ Behavioural consequences of insurance and regulation
- ▶ Labour market experiences and health

Program: Workplace Studies
Theme

- ▶ Workplace interventions and evaluations

Program: Health Services Research, Monitoring and Evaluation
Themes

- ▶ Measurement of health and function
- ▶ Epidemiology of disability
- ▶ Evidence-based practice
- ▶ Prevention of work disability

Program: Data and Information Systems
Theme
▶ Statistical methods and data tools

Program: Systematic Reviews
Themes
▶ Reviews
▶ Training and methodological development

The research section of this report is organized according to this structure. Each of the programs is described briefly, followed by a description of program themes and projects.

In addition, the current Chief Scientist, who is now in the last year of his three year secondment to IWH from the University of York in the UK, has continued with his own well established program of research. This work has been supported by and has relevance to IWH, but is outside our theme reporting structure. It is reported on briefly following the reports on the main programs as distinct from contributions to the Institute's primary research agenda.

Knowledge Transfer & Exchange at the Institute

The Institute considers knowledge transfer & exchange (KTE) to be a process by which relevant research information is made available and accessible for practice, planning and policy-making through interactive engagement with stakeholders. Building relationship pathways with stakeholders has proven to be an important factor for successful KTE. This allows us to involve stakeholders early in the research process to provide researchers with audience intelligence to help shape the research questions and provide information about the context in which research results are likely to be used. Stakeholders may also be involved while the research is under way and at the "message extraction stage" when the research has been completed. The target audiences for the Institute's research include policymakers (e.g., federal and provincial governments, third party payers such as WSIB), workplace parties (employers and workers), organized labour and clinicians.

The KTE process is supported by user-friendly materials and a corporate communications strategy that enhances both the Institute's ability to communicate effectively with its stakeholders and its ability to receive their input about content, timeliness and applicability. The communication tools include our corporate newsletters, the IWH website, media relations, special events and the promotion of specific products such as booklets and workshops. In addition KTE actively works to build our audiences' capacity to understand and use research evidence in their own programming, planning and decision-making.

This year the KTE section of the Accomplishments Report is structured in two ways. To provide an integrated picture of how KTE is linked to the research of the Institute, a short KTE summary follows each program section. In addition, there is a separate KTE section that describes our network projects, communication and capacity building activities.

Presentations, Publications, Awards and Collaborators & Staff

This third section reports on 2005 publications, presentations, grants and awards, and provides 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 lists all IWH staff in 2005, as well as IWH adjunct scientists who have contributed to our activities in the past year.

Population Workforce Studies Program

The focus of research in the Population/Workforce Studies program is on upstream issues such as labour-market experiences over the life course and their relationship to health. The research methodologies employed often entail the analysis of complex longitudinal surveys. In recent years we have built up a multi-disciplinary team of researchers with expertise in the analysis of large, longitudinal datasets and in advanced analytic techniques.

The nature of the research undertaken in the Population/Workforce Studies program is inherently multi-disciplinary. Accordingly, many of our projects involve collaborative work with scientists associated with other research programs at the Institute. A number of projects involve collaborative work with researchers based at universities, research centres, and other organizations across Canada and the United States. We are actively seeking to expand these cross-discipline, cross-organization collaborations.

Over the past year the Population/Workforce Studies program continued to pursue two broad research themes: 1) behavioural consequences of insurance and regulation and, 2) labour market experiences and health. Under the first theme, we investigate the design features of workers' compensation systems and occupational health and safety regulation and their behavioral consequences for employers, workers, insurers, and health-care providers. Under the second theme, we investigate the relationship between upstream labour-market experiences related to the availability and nature of work, such as job insecurity and work stress, and their downstream health consequences. We also investigate the reciprocal relationship, whereby health status influences labour-market experiences.

Behavioural Consequences of Insurance and Regulation

Over the last two decades, workers' compensation jurisdictions across North America have experienced substantial declines in injury claim rates, yet in many of these jurisdictions, the costs of workers' compensation and other disability insurance programs have steadily increased. The goal of this research theme is to identify factors driving these trends, and to understand the relative impact of prevention incentives offered to workplaces in the design of insurance programs and by occupational health and safety regulation. These are questions that warrant high quality research attention to support evidence-based policy development.

A fundamental social objective of the historic compromise that gave rise to workers' compensation insurance is providing adequate and equitable benefits to workers who experience a work-related injury, while simultaneously providing affordable insurance to employers. Fulfilling this objective is a complex and challenging task. Researchers and policy-makers have much to learn about designing programs that provide incentives for employers, workers and other stakeholders to give appropriate attention to prevention, effective and optimal care and timely and safe return-to-work. Responding to this policy challenge, Institute scientists have established a comprehensive research program on the behavioural consequences of insurance and regulation. A few of these projects are noted below.

Two years ago, the Institute completed a systematic review of more than 50 empirical studies on the effectiveness of insurance policies and regulatory policies in the prevention of work injury. Several provincial ministries of labour indicated that the results of this review have been valuable in policy development. Following a 2004 policy review of the inspectorate function, for example, the Ontario Ministry of Labour announced a significant increase in the number of inspectors who audit workplaces for compliance with occupational health and safety standards.

Subsequently, the Ontario Ministry of Labour has spearheaded the Ontario High Risk Firm Initiative, an integrated comprehensive approach to workplace health and safety. Under this initiative, the Ontario government has 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. It targets Ontario workplaces with the poorest health and safety performance as indicated by the costs of recent compensation claims.

Early in 2005, the Institute was invited to lead 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 Ministry of Labour, the WSIB and the Health and Safety Associations. At this workshop, Dr. Ben Amick, University of Texas, Dr. Barbara Silverstein, Washington State Department of Labor and Industry, and Dr. John Mendeloff, University of Pittsburgh, participated as external discussants. The discussants gave strong endorsement of the value of a rigorous evaluation of the Ontario High Risk Firm Initiative. Discussions are presently underway to determine a possible future role for the Institute and funding mechanisms for this evaluation. The results will be highly relevant to the Prevention, Workplace Design and Intervention Research priority.

This review of the literature on the effect of specific insurance and regulatory mechanisms also provided an excellent background for the evaluation of the effects of one of the five experience rating programs in Ontario (NEER) which we undertook in 2005 on behalf of the WSIB. In the spring of 2005 the Institute conducted case studies of 90 Ontario workplaces from three economic sectors,

developing questions informed by Ontario labour and employer concerns in this evaluation. Informants were asked to discuss the influence of experience rating on workplace practices for preventing injury and occupational illness, and for enhancing disability management (the reduction of disability and disability costs following a work-related injury or illness). Results have been provided to the WSIB and discussions of the findings with the stakeholder community are currently being planned by WSIB staff. This examination of experience rating is relevant to the Prevention, Workplace Design & Intervention Research priorities.

Researchers in this theme are also looking more broadly at disability insurance schemes in Canada. In one ongoing project we are investigating the nature and effects of interactions between workers' compensation systems and the publicly funded health care system; in another looking systematically we are at the sources and eligibility criteria for disability insurance in Canada and the consequences to economic well-being arising after disability.

Focusing more specifically on the individuals suffering permanent impairment due to work place accidents, Institute researchers previously have completed the first phase of a research program to understand better the adequacy and equity of post-injury income-loss compensation in Ontario, and are now broadening the analysis to look at temporary work disability in Ontario and at similar issues in other jurisdictions.

We have also initiated a new project with WSIB-RAC support to examine the claim circumstances, for that small, but very costly segment of the WSIB clients for whom there are unresolved compensation situations. This study may lead to a better understanding of how claims can become disproportionately complex and costly. The results of these studies will have particular relevance to Fair Compensation and Ontario Workers' Compensation System Research priority.

Project Titles:

Systematic Review of the Literature on Workers' Compensation System and Occupational Health and Safety Features and Their Consequences for Work-related Injury Experiences (860)..... 7

Evaluating the Effects of Experience Rating in Ontario (457)..... 9

The Impact of Experience Rating and Occupational Health and Safety on Claims Experiences in Ontario (416) 11

High Risk Firms Initiative (432) 12

Dynamics of Parallel Systems of Finance: Interactions between Canada's Workers' Compensation Systems and Public Health Care Systems (462)..... 13

Understanding Disability Insurance in Canada: Issues and Research Opportunities (404) 13

WSIB Lost-time Injuries and Income Sources Post-injury (406)..... 14

Evaluating Benefit Changes in British Columbia: The Amended Workers' Compensation Act, 2002 (422)..... 17

An Ethnographic Study of Injured Workers' Complex Claims Experience (244)..... 18

CURA: Workers' Compensation and the Consequences of Work Injury..... 19

Systematic Review of the Literature on Workers' Compensation System and Occupational Health and Safety Features and Their Consequences for Work-related Injury Experiences (860)

Project Status: Completed

Introduction: We recently completed a systematic literature review of empirical research on workers' compensation system design features and their consequences for injury experiences. This focused on initiatives directed at employer behaviour such as experience rating, insurance options, and occupational health and safety regulation enforcement. The project was innovative in that it is the first review of disability compensation to employ the structured and comprehensive methodology of systematic reviews. Moreover, we assessed the quality of empirical articles reviewed and, where possible, synthesized the evidence on the impact of design features using a method known as 'best-evidence synthesis'. This synthesis allows the reader to compare studies and assess the overall strength of the evidence for the relationships under review.

The results of this systematic review yielded 'moderate' evidence that the degree of experience rating reduces the frequency and /or severity of injuries, limited to no evidence of general and specific deterrence of inspections and general deterrence of citations/penalties; and 'strong' evidence that actual citations and penalties reduce frequency and /or severity of injuries. Results have been shared with the WSIB, Ontario Ministry of Labour and other policy makers.

Objectives:

- ▶ To disseminate the findings through peer review and to stakeholders.

Methods: This systematic review of the literature on experience rating and occupational health and safety regulation enforcement. Electronic searches of a number of journal, book, thesis and working paper databases was undertaken to identify studies. Hand searching and word of mouth was also a source of identifying studies. The best evidence method of synthesizing the literature was used to assess the level of evidence on the effectiveness of experience rating and occupational health and safety regulation enforcement on reducing the frequency and duration of work-related injuries and illnesses.

Results: Working Paper 213: Strong evidence that specific deterrence from citation and penalties (i.e., actually being cited and fined) is effective.

Researchers: Emile Tompa (Institute Coordinator), Scott Trevithick, C McLeod (University of B.C.)

Stakeholder Involvement: Workplace Safety & Insurance Board (WSIB): This project was initiated after discussions with Ron Lovelock, Marianne Levitsky and Kathryn Woodcock of WSIB.

Presentations:

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. 23 March 2005; Hamilton, ON: Occupational Health, Hygiene and Toxicology Rounds, McMaster University [IWH WP #213]

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. May 2005; Vancouver, Canada: Canadian Association of Research on Work and Health.

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. March 2005; Hamilton, ON: Occupational Health, Hygiene and Toxicology Rounds.

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanism for occupational health and safety. March 2004; Toronto, ON: IWH Scientific Advisory Committee Meetings.

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanism for occupational health and safety. Jan 2004; Toronto, ON: Research Consultation with the Workplace Safety and Insurance Board.

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanism for occupational health and safety. May 2003; Toronto, ON: IWH Plenary Series.

Publications:

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanism for occupational health and safety. Submitted: Journal of Human Resources (IWH Working Paper #213)

The Working Paper can be found at: http://www.iwh.on.ca/products/wp_order.php

Evaluating the Effects of Experience Rating in Ontario (457)

Project Status: Completed

Introduction: Experience-adjusted insurance premiums are included to provide financial incentives to firms to take appropriate measures to reduce the frequency or cost of workers' compensation claims. Claim frequency may be reduced through the implementation of more effective primary prevention efforts in the workplace. However, frequency may also be reduced through under-reporting injuries or illness which would be eligible for compensation. Compensation claim costs, by contrast, may be reduced through more effective disability management efforts, particularly in a firm's efforts to support early return-to-work.

Over the period 1998-2002, there were a total of approximately 14,000 firms covered by the NEER (New Experimental Experience Rating) program which is the primary experience-rating program in Ontario. Representatives of organized labour are concerned that the negative effects of experience rating, such as under-reporting or suppression of eligible compensation claims or inappropriately early return-to-work efforts, may exceed the beneficial effects of these incentives. Employers are concerned that the classification of a firm's experience rating status (whether eligible for surcharge or for rebate) is vulnerable to unfair treatment. There has been no routine monitoring of the frequency of unintended or undesirable consequences of experience rating in Ontario and stakeholders are requesting high quality evidence of the frequency of intended and unintended effects. The Institute has been invited to assist the WSIB in designing research which can inform understanding of the effects of experience rating.

Objectives:

- ▶ To compare occupational health and safety policies and practices reported by informants (senior OHS managers, employee reps, Joint Health & Safety Committee members) from Ontario firms (between 60 and 120 case studies) sampled to reflect three compensation insurance premium histories: a) a recent history of premium rebates, b) a recent history of premium surcharges and c) a recent history of converting from premium surcharge status to premium rebate status.

Methods: In early 2005, the Workplace Safety & Insurance Board (WSIB) contracted with the Institute for Work & Health (IWH) for project management services to conduct a case study design to assess the effects of the NEER experience rating program in Ontario across three economic sectors. The research team surveyed employees and employers in small, medium and large firms from three major economic sectors – transportation, healthcare and manufacturing. Firms and organizations recruited to participate in the study were selected from among those employers with a recent history of rebate or a recent history of surcharge under the NEER program. An equal number of surcharge firms and rebate firms were recruited to participate in the study. In each firm, the management and employee co-chairs of the Joint Health and Safety Committee were interviewed. Semi-structured interviews explored four specific domains of organizational policies and practices: 1) respondents' recognition of the NEER program, 2) respondents' recognition of the costs of workplace injury and disability, 3) respondents' perceptions of their workplace's attention to worker health protection and injury prevention, and, 4) respondents' perceptions of their workplace's attention to the management of work-related disability.

Results: Findings from this research found that NEER functions well, encourages prevention and contributes to positive workplace health and safety practices. Nearly three-quarters of all

managers across all three sectors state that NEER influences practices that support safer workplaces. The large majority of employees stated that they are being encouraged to report accidents and incidents and are being offered modified and early return to work if injured.

Primary compliance motivators differ among employers depending on their success at implementing NEER. Surcharge firms are more likely to be financially motivated to comply. However, for those in rebate, genuine concern for employee well-being is the main motivator. Positive safety culture and high employee morale generally apply to rebate firms. Lower employee morale and lack of safety appreciation among all workplace parties tend to characterize surcharge firms.

NEER is a key lever in firms offering early return-to-work (RTW) and modified duties. However, one area of concern for NEER is that early return to work and modified duties are implemented too aggressively among a very small minority of employers (where employees are back to work too early causing re-injury). Most of the firms surveyed understand that by having a good RTW program, employees undertake modified duties safely, which results in reduced lost time hours and costs while being sensitive to the employees' health needs.

Researchers: Cameron Mustard (Institute Coordinator), Robin Kells

Stakeholder Involvement: WSIB: Revenue Policy and Research & Evaluation staff of the WSIB have been active participants in the specification of the evaluation objectives of this project. Questions guiding this project have been shaped in discussions with labour and employer interests in the province of Ontario.

External Funding: WSIB – Special Contract 2005

The Impact of Experience Rating and Occupational Health and Safety on Claims Experiences in Ontario (416)

Project Status: Ongoing

Introduction: A system of experience rated workers' compensation premiums (NEER and CAD-7) was phased in over the 1980s in Ontario. Subsequently, the injury claim rates for both lost-time and no-lost-time claims decreased suggesting that the programs might have had an impact on employer behaviour. Theoretically, a link between a company's claims history and the premiums paid for coverage provides an incentive to increase safety efforts but to what degree the observed trend in claim rates is attributable to the introduction of experience rating is unclear and controversial. A decrease in claim rates has also been observed over this time period in other jurisdictions, suggesting that the phenomenon might, at least partially, be driven by cross-jurisdictional forces and not strictly by within-jurisdiction policy changes. The phasing-in of experience rating in Ontario provides an interesting natural experiment to test the relationship between experience rating and claim rates. Data for this project will be taken from three sources: WSIB administrative records on firms and their claims activity, Ministry of Labour's administrative records on occupational health and safety regulation enforcement activity, and the Workplace and Employee Survey (WES). The latter will be the source of information on the characteristics of firms that is not available in the two administrative data sources.

Objectives:

- ▶ To assess whether the degree of experience rating is correlated with injury experiences at the industry level, after controlling for other characteristics of relevance.
- ▶ To assess whether the degree of experience rating is correlated with specific aspects of injury experiences such as the frequency, duration and nature of injuries.
- ▶ To investigate the impact of OHS regulation enforcement on injury experiences.

Research Lead: Emile Tompa

High Risk Firm Initiative (432)

Project Status: Ongoing

Introduction: In 2005, the Ontario Ministry of Labour 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. Under this initiative, the Ontario government has 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 Ministry of Labour, the WSIB and the Health and Safety Associations. At this workshop, Dr. Ben Amick, Dr. Barbara Silverstein and Dr. John Mendeloff participated as external discussants. The discussants gave strong endorsement of the value of a rigorous evaluation of the Ontario High Risk Firm Initiative. The results of an evaluation providing high quality evidence on the cost effectiveness of regulatory inspection and enforcement and the cost effectiveness of consultation and education services will be exceptionally valuable to occupational health and safety policy development in a great many jurisdictions around the world. Discussions are presently underway to establish a funding mechanism.

Objectives:

- ▶ Identify a range of options for evaluating the MoL initiative.
- ▶ Conduct workshop to review evaluation options with external discussants, MoL and other stakeholders.
- ▶ Present report and recommendations to MoL.

Research Lead: Cameron Mustard

Dynamics of Parallel Systems of Finance: Interactions between Canada's Workers' Compensation Systems and Public Health Care Systems (462)

Project Status: Ongoing

Introduction: The purpose of this project is to examine the feasibility of conducting a program of research investigating the nature and effects of interactions between Canada's worker's compensation systems and its publicly funded health care system. Understanding the nature of these interactions is important because they may hold important lessons that can inform the development of health care policy with respect to public and private roles in health care finance. In addition, a comparative analysis of the two systems may foster understanding on how to best organize and deliver high-quality care to Canadians, both within health-related aspects of the workers' compensation systems and within the publicly financed health care systems.

Objectives:

Over the 12 month period of funding for this feasibility project, the investigator team will:

- ▶ Conduct a policy analysis that will describe the workers' compensation system and its relationship to and interactions with the public health care system, analyse key points of policy conflict, identify key policy questions and identify key research questions.
- ▶ Assess the availability of data to address key research questions, including an assessment of the feasibility of linking workers' compensation claim records to administrative records in the public insurance systems.

Research Lead: Cameron Mustard (Institute Coordinator), J Hurley (Principal Investigator, McMaster University)

External Funding:

Hurley J, Tompa E, Gnam W, Lavis J, Culyer A, Mustard CA. The dynamics of parallel systems of finance: Interaction between Canada's workers' compensation systems and public health care systems. CIHR: \$74,513; 2005 – 2006. (Administered at McMaster University)

Understanding Disability Insurance in Canada: Issues and Research Opportunities (404)

Project Status: Ongoing

Introduction: In Canada, the provision of income insurance for labour market earning losses arising from disability in working-age populations is provided by five primary sources. Unlike many other Organization for Economic Co-operation and Development (OECD) economies in Canada, these programs are poorly integrated. They have different definitions of disability, differing conditions for eligibility and duration of entitlement, and different levels of benefit generosity. There are very profound deficits in our understanding of the economic circumstances of disabled working-age adults, especially information on the change in household economic well-being following the onset of disability. There is only limited information currently available in Canada on the demographic or occupational characteristics that influence the probability of eligibility for specific insurance programs. Additionally, there is very limited information on the consequences to economic well-being arising from work disability.

Objectives:

To better understand the nature of disability income, this project will develop:

- ▶ empirical estimates of the cause-specific incidence of disability in working-age Canadians integrated with estimates of source/amount of disability insurance benefits received.
- ▶ empirical simulation, and models of the impact of an aging labour force, longer duration of labour force participation and the relaxation of mandatory retirement on expected expenditures for disability insurance benefits.

Research Lead: Cameron Mustard

WSIB Lost-time Injuries and Income Sources Post-injury (406)

Project Status: Ongoing

Introduction: Better understanding of the adequacy and equity of income-loss compensation for individuals sustaining permanent impairment due to a workplace accident is needed. This project focuses on two key concerns. First, how successful are injured workers in re-entering the labour force and recouping at least a fraction of their earnings, and what characteristics determine success? Second, does workers' compensation adequately and equitably replace lost earnings? The first phase of the project will focus on addressing these two issues in Ontario. In the second phase we will investigate cross-jurisdictional differences in program adequacy and equity for a similar population using data from British Columbia and several U.S. jurisdictions. In the third phase, we will investigate the post-accident earnings experiences of individuals sustaining a temporary work disability arising from a work-related accident.

Objectives:

Part One

Phase One: Permanent Impairment in Ontario

- ▶ To determine the degree of and factors influencing labour-market success and the adequacy and equity of workers' compensation income benefits under two Ontario programs.
- ▶ To describe the changes in individual and family income sources before and after permanent impairment and family formation/dissolution patterns after permanent impairment.

Phase Two: Permanent Impairment Benefits in Additional Jurisdictions

- ▶ To compare adequacy and equity of workers' compensation program across-jurisdictions.

Part Two

Phase Three: Temporary Work Disability in Ontario

- ▶ To describe the long-term labour-market earnings of these individuals.

Methods: There are two parts and three phases to this project. The principal data source for both Part 1 and 2 is the Canadian Longitudinal Administrative Databank (LAD). Part 1 is focused on long-term disability beneficiaries, and Part 2 on short-term disability beneficiaries. For the descriptive analyses, a control group for each event observation will be identified through a matching based on characteristics such as age, gender, labour-market earnings over the four years prior to accident, and region of residence at the time of accident. The descriptive analysis will consist of an evaluation of the adequacy and equity of wage replacement rates offered by the two long-term disability programs under analysis. For the analytical component, post-accident labour-

market earnings will be modeled using a fixed-effects, difference-in-differences regression analysis framework. Other related analyses will also be undertaken to investigate the social and economic costs of work injury based on the matched event-control and regression frameworks.

Results: WP210/210A/210B discuss findings from pilot: We find that percentage of permanent impairment significantly underestimates the percentage of earnings losses of claimants. Based on pre-injury earnings, the Loss of Earnings Capacity Program is more adequate and equitable than the percentage of Total Bodily Impairment Program. Based on control-counterpart earnings, the adequacy and equity of the two programs are more comparable. We conclude that permanent disability benefits based on percentage of total bodily impairment, a common approach to benefits determination, is less desirable than loss of earnings-capacity based benefits, on the grounds of adequacy, equity, and benefits costs. Working papers have been completed and two papers have been submitted for peer review.

Researchers: Emile Tompa (Institute Coordinator), Sudipa Bhattacharyya, Roman Dolinski, Miao Fang, Cameron Mustard, Sandra Sinclair, Scott Trevithick, Marjan Vidmar

Stakeholder Involvement: Linda Jolley (WSIB) and Steve Mantis (Canadian Injured Workers Alliance) since inception: A working group of senior WSIB members was formed in 2002: Judy Geary, John Slinger, Richard Allingham, Joe Sgro, and Robert Dean. Dr. Robert Reville, (RAND) has also provided helpful comments at several points during the project.

Presentations:

Tompa E, Mustard C, Sinclair S, Vidmar M. The impact of permanent impairment on labour-market earnings post-accident. April 2002; IWH Internal Plenary Series.

Tompa E, Mustard C, Sinclair S, Vidmar M. The impact of permanent impairment on labour-market earnings post-accident. May 2002; IWH Research Advisory Committee Meeting.

Tompa E, Mustard C, Sinclair S, Reville B, Boden L, Biddle J. Permanent partial disability in Canada and the US: comparative international research. March 2003; IWH Scientific Advisory Committee Meetings.

Tompa E, Mustard C, Sinclair S, Trevithick S, Vidmar M. Post-accident earnings and benefits adequacy and equity of Ontario workers sustaining a permanent impairment from workplace accidents. May 2003; Vancouver, BC: Research Consultation with the WSIB.

Tompa E, Mustard C, Sinclair S, Trevithick S, Vidmar M. Post-accident earnings and benefits adequacy and equity of Ontario workers sustaining a permanent impairment from workplace accidents. March 2004; Phoenix, USA: Annual Meeting of the Workers' Compensation Research Group.

Tompa E, Mustard C, Sinclair S, Trevithick S, Vidmar M. Post-accident earnings and benefits adequacy and equity of Ontario workers sustaining a permanent impairment from workplace accidents. 1-3 Dec 2004; Rome, Italy: 6th International Congress on Work Injury.

Tompa E, Mustard C, Sinclair S. Evidence from Canada on the adequacy, equity and cost of two approaches to compensation for permanent impairment from work accidents. 18-20 April 2006; Washington, DC, NORA Symposium 2006: Research Makes a Difference. [IWH WP #210]

Publications:

Tompa E, Mustard C, Sinclair S. Evidence from Canada on the adequacy, equity and cost of two approaches to compensation for permanent impairment from work accidents. Submitted: ILRR [IWH WP #210]

Tompa E, Mustard CA, Sinclair S. Permanent disability compensation: A review of the adequacy and equity of two approaches to benefits determination in Canada. Submitted: CPP (Project 406: WSIB Lost Time Injuries) [IWH WP #210]

Tompa E, Mustard CA, Sinclair S, Trevithick S, Vidmar M. Post-accident earnings and benefits adequacy and equity of Ontario workers sustaining a permanent impairment from workplace accidents. (IWH Working Paper #210)

Tompa E, Mustard CA, Sinclair S, Trevithick S, Vidmar M. Post-accident earnings and benefits adequacy and equity: an evaluation of the pre-1990 Ontario permanent disability program. (IWH Working Paper #210A)

Tompa E, Mustard CA, Sinclair S, Trevithick S, Vidmar M. Post-accident earnings and benefits adequacy and equity: an evaluation of the post-1990 Ontario permanent disability program. (IWH Working Paper #210B)

External Funding:

Tompa E, Mustard CA, Sinclair S. Post-accident earnings and benefits adequacy and equity. NIOSH, \$150,000US; 2004-2006

Evaluating Benefit Changes in British Columbia: The Amended Workers' Compensation Act, 2002 (422)

Project Status: Completed

Introduction: Following the enactment of Bill 49 in British Columbia (June 30, 2002), the B.C. Workers' Compensation Board revised a number of compensation benefit policies: 1) compensation benefits, 2) cost-of-living adjustment, 3) benefits for permanent disability, 4) the integration of federal Canada Pension Plan disability benefits with permanent disability benefits and 5) post-retirement permanent disability benefits. At the time of policy amendment, the Panel of Administrators requested that the impact of these changes be assessed. In late 2004, the Institute for Work & Health was invited to undertake a short-term project to assess options for evaluating the effects of these policy changes. The options focus on evaluation designs based on the linkage of B.C. WCB administrative records to Statistics Canada's Longitudinal Administrative Database (LAD), replicating methods being used in an IWH study (project 406) of benefit for Ontario permanent partial disability benefit recipients. This design option would provide the opportunity to compare labour market outcomes between Ontario and B.C. WCB beneficiaries.

Objectives:

- ▶ To investigate the labour market success of workers in B.C. who have sustained a permanent impairment due to a work-related injury.
- ▶ To investigate the adequacy and equity of workers' compensation benefits under two benefit programs that have existed in B.C.
- ▶ To undertake cross-jurisdictional comparisons of workers' compensation program adequacy and equity.

Results: Following review of the first phase feasibility assessment report submitted by the Institute for Work & Health, benefits policy staff of WorkSafeBC determined that a decision on further work on this project would be postponed to 2006.

Researchers: Cameron Mustard (Institute Coordinator), Emile Tompa

Stakeholder Involvement: Benefits policy staff of the B.C. WCB

External Funding: Mustard CA. British Columbia Workers' Compensation Board \$13,500. 2005

An Ethnographic Study of Injured Workers' Complex Claims Experience (244)

Project Status: Ongoing

Introduction: Preliminary findings from a study of Ontario's Injured Workers Outreach Services (IWOS) indicate that workers who join these injured worker support groups have very complex and unresolved compensation situations. As such, they represent the segment of WSIB clients who pose the greatest proportional costs to the system. These workers have experienced difficulties with compensation procedures and requirements which have led to an impasse with their claims; for instance, they may be 'cut off' from compensation payments, or they may be engaged in unsuccessful labour-market re-entry training. Further research on the experiences and situations of this group of workers is expected to identify problematic processes and procedures that workers encounter as they pass through the compensation system. By identifying these areas for intervention, it is expected that the results of this study can aid policy makers and injured worker groups by pointing to ways to improve the claims experience of workers who spend a disproportionate period of time on benefits.

Objectives:

- ▶ Further analyze IWOS interview data.
- ▶ Develop a model of injured workers which encompasses their experience with the health care and compensation systems.
- ▶ Gain a better understanding of what brings injured workers to peer support groups.
- ▶ Consider injured worker experience in the context of WSIB programs and services.

Research Lead: Ellen MacEachen

External Funding:

MacEachen E, Ferrier S, Cole DC. An ethnographic study of injured workers' complex claims experiences. WSIB-RAC: \$88,198; 2005 - 2007. (On Nov 8th, \$9,473. additional funding was awarded to the original study, new total: \$97,671.)

CURA: Workers' Compensation and the Consequences of Work Injury

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 Community-University Research Alliance (CURA) on workers' compensation and work injury 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. Currently we are awaiting the results of a grant submission to Social Sciences and Humanities Research Council of Canada (SSHRC) prior to undertaking this work.

Objectives:

- ▶ Undertake the five-year program laid out in the proposal submitted to SSHRC.
- ▶ 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.

Research Lead: Emile Tompa

Labour Market Experiences and Health

Two broad dimensions of labour market activity characterize this theme: work availability and the nature of work. Availability includes such phenomena as employment and unemployment, working time and job security. The nature of work relates to the actual work done: such elements as job characteristics, position in firm or occupational hierarchy and other organizational characteristics. Global economic integration and rapid technological change have brought about many changes in labour markets, including changes in these two broad dimensions, as employers adopt arrangements like “flexible staffing” and/or vary the size/number of task-related demands on workers.

Some project teams within the theme include colleagues from outside the Institute (for example, from Statistics Canada, McMaster University, Queen’s University, University of Texas and University of British Columbia). Virtually all projects have extensive stakeholder involvement at most stages from conception onwards. Stakeholder partners include Health Canada, Statistics Canada, provincial ministries of health and labour, health authorities and other provincial and community-based organizations.

The range of the research on the theme is broad and is supported in part by external funding. Some is initially directed at the development of databases in order that they can be more usefully used to address policy questions; other strands investigate phenomena and test hypotheses. The research portfolio includes pioneering work using longitudinal databases (e.g., to understand the empirical links between occupational working experiences, earned income and transfers on the one hand and mortality/life expectation and measures of health status on the other); equally pioneering work relates to young people (e.g., the influence of childhood health status on early adult role performance at home and work, work-related injury rates amongst adolescents and high school students, and the correlates of injuries occurring to young workers).

Early results of our research on young workers have demonstrated that all workers are at increased risk of on the job injury during the first month of employment. However, as young workers tend to change jobs more frequently they are more likely to be in the first month more often than older workers. A growing body of recent research attempts to explain why young people (i.e., adolescents 15 to 19 years old) have a high risk of work injuries. Though many correlates of work injuries have been identified, there has been no systematic review of the literature to assess the empirical strength of individual and work-related risk factors. IWH researchers have in 2005 undertaken a systematic review of this literature as part of a pilot project funded by WSIB. The results of this review are noted below. As such, it will contribute to the Prevention, Workplace Design and Intervention Research priority.

The majority of projects in this theme are ongoing multi-year studies, with many at the stage of initial results which are described in the following pages.

Project Titles:

Ten-year Mortality Follow-up for Occupations in the 1991 Canadian Census (461)	23
Health and Labour Market Trajectories (448).....	23
Canadian Trends in Socioeconomic Inequality in Avoidable Mortality: 1985-2002 (403)	24
Human Capital Development (438).....	26

Early Childhood Determinants of Success in the Transition to Adult Social Roles in a Cohort of Canadian Children (755).....	27
Work Injuries and Teens (451/442).....	29
Prevalence and Determinants of Work-related Injuries Among Young Workers in Ontario and British Columbia (408).....	32
Work and Work-related Injuries Among High School Students in British Columbia (234).....	34
Systematic Review: Risk Factors for Work Injury Among Youth (409).....	36
Under-employment and Contingent Work (486).....	38
Precarious Employment and People with Disabilities (Community-University Research Alliance - CURA) (402).....	41
The Impact of Multiple Roles and Gender Role Beliefs on Health and Health Behaviours in Parents of Young Children (109).....	43
Social Inequalities in Mental Illnesses in the Canadian Community Health Survey Cycle 1.2 (304).....	45
KTE in Population Workforce Studies.....	46

Ten-year Mortality Follow-up for Occupations in the 1991 Canadian Census (461)

Project Status: Ongoing

Introduction: The relationship between life expectancy and occupation has been poorly described 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 program uses a new population-based longitudinal person-oriented database formed by Statistics Canada from the linkage of existing administrative datasets. The resulting database will consist of records for approximately 4.5 million persons, with approximately 45 million years of follow-up. Approximately 300,000 deaths are expected to occur in this sample over the study's ten year follow-up period. The linkage to be 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. These estimates are currently unavailable.

Research Lead: Cameron Mustard

Health and Labour Market Trajectories (448)

Project Status: Ongoing

Introduction: Over the past four 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 Workplace Employee Survey (WES)). Over the next year the longitudinal cohort in the NPHS will extend to eight years, and the SLID will contain information across three different panels from 1993 to 2002. Each of these surveys contains detailed information on health status, disability status, labour market entry, labour market exit and labour market trajectories.

Objectives:

- ▶ Estimate the longitudinal patterns of employment tenure in the Canadian labour force.
- ▶ Develop new methods of measuring changes in working conditions.
- ▶ Estimate the extent to which changes in employment tenure and working conditions are associated with subsequent changes in health status and health behaviours.
- ▶ Estimate the extent to which changes in health status and health behaviours are associated with subsequent changes in employment tenure and working conditions.
- ▶ Test the consistency of reporting across gender, and different measures of socioeconomic status (education, household income etc.).

Research Lead: Cameron Mustard

Canadian Trends in Socioeconomic Inequality in Avoidable Mortality: 1985-2002 (403)

Project Status: Completed (Further work pending)

Introduction: The Longitudinal Administrative Database (LAD) is a 20% sample of Canadian tax filers, from 1982 to the present. It contains detailed information about income components, family relationships and geography. For some unknown percentage of the individuals in the database information on living/dead status is captured. However, there is no cause-of-death information. Linkage of the LAD to the Canadian Mortality Database (CMDB) will improve coverage on living/dead status and add cause-of-death information to the file.

Objectives:

- ▶ Estimate the magnitude of mortality risk associated with labour market income and social welfare transfers.
- ▶ Examining geographic differences across Canada in mortality risk.
- ▶ Examine all-cause and premature mortality (deaths before age 75): 1) by level of labour market income, 2) by the dynamics of labour market income, and 3) by the prevalence of income from social welfare transfers.

Methods: The objective of this research project is to estimate the magnitude of mortality risk associated with labour market income and social welfare transfers over a minimum ten year follow-up period in a 20% sample of Canadian residents aged 30-79 at baseline. The work will be primarily descriptive. Strengths of this study include availability of annual measures of income over the follow-up period, annual measures over the follow-up period which can proxy for health status and information on the cause of death. We will devote considerable attention to examining geographic differences across Canada in all-cause mortality risk and premature mortality risk, relative to the cumulative labour market income and social welfare transfers over a minimum ten year follow-up period. Descriptive analyses will examine all-cause mortality and premature mortality; 1a) by level of labour market income, 1b) by the dynamics of labour market income, and 1c) by the prevalence of income from social welfare transfers. All analyses will be stratified by gender. Additionally, descriptive analyses will examine the consistency of findings across geographic areas of the country. Finally, within the limits of the measures available to this study, risk estimates will be adjusted for evidence of health selection, where declines in health status may precede changes in income and which may separately, influence the risk of mortality.

Results: Income and premature adult mortality have been repeatedly shown to be associated. In the United States, analysis of the Panel Study of Income Dynamics showed that income drops and persistent low income have a negative effect on subsequent mortality. The Canadian analysis replicates the US analysis conducted by McDonough in the Canadian population. The Longitudinal Administrative Database (LAD), a 20% representative sample of Canadian tax filers, linked longitudinally from 1982 to the present will be the Canadian data source, and the Panel Study of Income Dynamics (PSID, 1968-1997) is the source of American data. The data were analysed by Cox proportional hazards regression, with time-varying, lagged exposure measures. Income is family income using 1993 dollars, and covariates include age, calendar year (dichotomized at 1992), and time-averaged household size. Results for the Canadian population were similar for those observed earlier in the United States, where persons experiencing a large decline in annual income were at higher risk of subsequent mortality.

Researchers: Cameron Mustard, Jacob Etches, Hyunmi Lee, Emile Tompa

Stakeholder Involvement: The project was offered funding support from Health Canada's Health Policy Research Program. This program develops focused RFPs that target gaps in Health Canada's evidence base for policy. This project was funded through RFA-12, "Health Impacts of Economic Change." In June 2004, this funding contribution was declined due to delays in receiving linkage approval from Statistics Canada and new funding is being sought.

Presentations:

Etches J, Mustard CA. Income dynamics and mortality in Canada and the United States. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health.

Etches J, Mustard CA. Income dynamics and premature mortality in Canada. 16-17 May 2005; Vancouver, BC: Canadian Association of Researchers in Work & Health (CARWH) Bi-Annual Symposium.

External Funding:

Mustard CA, Tompa E, Manuel D. Canadian trends in socioeconomic inequalities in avoidable mortality: 1985-2002. CIHR: \$180,000; 2005 - 2007.

Human Capital Development (438)

Project Status: Completed

Introduction: In early 2005, the Canadian Policy Research Networks and the Queen's University School of Policy Studies invited the Institute for Work & Health to participate in a national research forum examining our understanding of the factors contributing to optimal human capital development and the connections between human capital acquisition and individual and societal outcomes in Canada.

Objectives:

- ▶ Contribute an original synthesis paper, summarizing the research evidence concerning the influence of physical, mental and behavioral health of children on subsequent human capital acquisition.
- ▶ Participate in a national meeting to consider research priorities to further our understanding of the factors contributing to optimal human capital development in Canada.

Methods: The synthesis paper reviewed a selection of research studies and review papers that have considered the influence of child health status on educational attainment and occupational attainment in early adulthood.

Results: This review considered evidence for the long-term persistence of health status deficits in childhood on human capital attainments in young adulthood. The review has considered only a selected range of dimensions of child health. Of the factors reviewed, none have a high prevalence. For example, Fetal Alcohol Syndrome may affect 2-5 children per 1,000, the incidence of low birth weight is approximately 50 per 1,000 children and the prevalence of behavioural disorder is in the range of 50-80 per 1,000 children. While the prevalence of any one condition may be low, the cumulative prevalence of all childhood disorders that may have consequences for human capital attainment will be in the range of 15-25% of the population of children. Of equal importance, there is significant evidence for long-term effects on human capital attainment for each of the child health status factors considered in this review. The paper concludes with a series of observations concerning the policy implications of these findings. This paper was presented at the CPRN sponsored workshop Towards an Integrated Approach to Human Capital Development in Ottawa in January 2006.

Researchers: Cameron Mustard (Institute Coordinator), Jacob Etches, Emile Tompa

Stakeholder Involvement: Funding for this program of work has received support from Human Resources and Skills Development Canada, the Canadian Council on Learning, the Canada Millennium Scholarship Fund, the Ontario Ministry of Training, Colleges and Universities and Alberta Human Resources and Employment.

Publications:

Mustard C, Etches J, Tompa E. The effects of deficits in health status in childhood and adolescence on human capital development in early adulthood. In: Towards an Integrated Approach to Human Capital Development. Canadian Policy Research Networks, School of Policy Studies, Queen's University, Forthcoming.

External Funding:

Mustard CA, Tompa E. Human capital development. CPRN: \$7,500; 2005

Early Childhood Determinants of Success in the Transition to Adult Social Roles in a Cohort of Canadian Children (755)

Project Status: Ongoing

Introduction: There is only a small number of cohort studies that have measured emotional, physical and behavioral health during childhood and subsequently followed these children into adulthood. Very little information is available concerning the implications of childhood health and behavioral status for adult role function, especially labour-force participation. The Ontario Child Health Study (OCHS) was established in 1983, enrolling 3,200 Ontario children between the ages of 4-16. This cohort was re-surveyed in childhood, in 1987 and again in early adulthood in 2000 (at ages 21-33).

Objectives:

- ▶ Describe attainment and performance in three major adult role domains: worker, parent and partner.
- ▶ Describe the potential predictors of adult role function which will include adult health status and a series of childhood attributes and experiences organized into three distinct levels: community-level socioeconomic factors, structural and functional characteristics at the family level, and aspects of health and functioning assessed at the level of the individual child.
- ▶ Estimate the strength of association between the potential predictors of adult role function and attainment and performance as a worker, parent, and partner.

Methods: The Ontario Child Health Study (OCHS) baseline survey of 3,294 children in 1,869 families was conducted in 1983, with a followup conducted in 1987. By the year 2000, the OCHS sample was aged 21-33 years of age. Instrument development and pilot testing was conducted in the spring and summer of 1999 with completion accomplished in November 1999. Survey pilot work was conducted in the spring and summer of 2000, and fieldwork commenced in October 2000. Survey administration was conducted by Statistics Canada. Instruments were administered to OCHS respondents and their spouse/partner and children if applicable. Community-level measures of social and economic environments were obtained from Census data. Fieldwork as completed in the late fall of 2001 and Statistics Canada delivered the final dataset to the McMaster site in December 2002.

Results: In 2005, a pair of research reports were completed based on analyses of the Ontario Child Health Study. In an examination of family and neighbourhood influences on educational attainment, results indicate that social contexts experienced early in the life course have the potential to exert powerful long-term influences on educational attainment of young adults. Child health, interpersonal functioning and emotional-behavioral problems had influences on education attainment. In an examination of childhood predictors of the risk of unintentional injury in young adulthood, we found that a childhood profile of conduct disorder resulted in an elevated risk of unintentional injury in early adulthood.

Researchers: Cameron Mustard (Institute Coordinator), Curtis Breslin, Amber Bielecky, M Boyle (McMaster University)

Stakeholder Involvement: There was extensive consultation with academic and policy audiences in the design and selection of content for the 2000 follow-up. In the spring of 2004, the OCHS project team convened a day-long workshop attended by researchers and research users.

Presentations:

Mustard CA, Kalcevich C, Boyle M. Childhood health status and inter-generational socio-economic mobility in the Ontario Child Health Study. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health Joint Meeting.

Mustard CA, Boyle M. Dan Offord Memorial Symposium: Ontario Child Health Study 2001. 18-23 Oct 2005; Toronto, ON: AACAP/CACAP Joint Annual Meeting.

Publications:

Mustard CA, Kalcevich C, Frank JW, Boyle M. Childhood and early adult predictors of risk of incident back pain: Ontario Child Health Study 2001 follow-up. *Am J Epi* 2005; 162(8):779-786. (Project 755: Ontario Child Health Survey)

Boyle M, Hong S, Georgiades K, Duku E, Racine Y, Mustard CA. Ontario Child Health Study follow-up 2001, Evaluation of sample loss. Submitted: *Child Development* [IWH WP #212]

Boyle M, Georgiades K, Racine Y, Mustard CA. Neighborhood and family influences on educational attainment: Results from Ontario Child Health Study follow-up 2001. Submitted: *Child Development* [IWH WP #306]

External Funding:

Boyle M, Mustard CA, Offord D, Dooley M, Rosenbaum P, Bennett K, Cairney J, MacMillan H, Lipman E. Ontario child health study: Early influences on health and development in adulthood. CIHR: \$304,000 IWH; 2003-2005 (Administered at McMaster University)

CIHR: \$97,700: 2002-2004 (Administered at McMaster University)

CPHI: \$415,200: Feb. 2001 - March 2002 (Administered at IWH)

MRC: \$1,452,700: Feb. 1999-Dec 2002 (Administered at McMaster University)

Work Injuries and Teens (451/442)

Project Status: Ongoing

Introduction: Over the past two decades, a growing body of research suggests that both the incidence rates and the types of occupational injuries in young workers (i.e., workers 12 to 19 years of age) are different from those in adults. A number of environmental and individual factors may also lead to a different set of risk and protective factors being associated with youth work injuries compared to adults. Young workers occupy a particular niche in the North American labour market that is characterized by part-time, temporary work, and concentration in certain jobs and industries. In addition, developmental factors may play a more prominent role in young workers' risk.

The long-term goal of this research program is to facilitate Canada's ability to formulate evidence-based prevention of work injuries among adolescents and young adults. Currently, we are analyzing secondary data from relevant population-based surveys to identify the risk and protective factors associated with youth work injuries and develop a conceptual model of youth work injury risk. Planned qualitative research will provide deeper understanding of what forces constrain and propel the way young workers comprehend their jobs and work safety.

Objectives:

Using Canadian health surveys (i.e., NPHS, CCHS, NLSCY, SLID) the set of research objectives that will be pursued include:

- ▶ Identify the individual, job, and geographic correlates of youth work injuries.
- ▶ Determine whether individual, job, and geographic correlates for other youth unintentional injuries (e.g., sports) are comparable to those of work injuries.
- ▶ Identify individual and job factors associated with moving frequently from job to job.
- ▶ Examine prospectively the relationship between work experience and work injury (i.e., inexperience increases injury risk).
- ▶ Examine prospectively the post-injury earnings losses of young people injured at work.

We also used a focus group methodology, to pursue the following objectives:

- ▶ To characterize young males and females their work experience.
- ▶ To summarize their understandings of work safety and their practices (what work they perform and how they do it).
- ▶ To identify the interactional (relations with supervisors, co-workers, and parents), material (physical work hazards), and organizational (employment conditions) account for young workers' understandings and practices.
- ▶ To examine how gender roles affect the meaning of work and work safety.

Methods: For the first set of research questions, we have been conducting multivariate analyses on cross-sectional and longitudinal surveys conducted by Statistics Canada. The second set of questions will involve analysis of textual data from young worker focus groups.

Results:

Age related differences:

Many population-based studies find that the rate of work injuries is higher among adolescent and young adult workers compared to their adult counterparts. However, these injury rates have rarely been adjusted for job characteristics that might confound these age differences. In this

analysis age-related differences in work injuries were examined in a representative sample of 56,510 working Canadians aged 15 years and over.

For men, adjusting for job characteristics substantially reduced, but did not eliminate the elevated risk status of adolescent and young adult workers. For women, only young adult women showed an elevated risk of work injury with job characteristics controlled. This is one of the few multivariate studies specifically examining contributors to age-related differences in work injuries in a population-based sample of workers. The substantial reduction in age-work injury association in the fully adjusted model suggests that differences in the types of jobs young workers hold play a critical role in their high risk status.

Antecedents of youth work injury:

The purpose of this analysis is to examine the relative contribution of individual factors (e.g., gender), job characteristics (e.g., job type) and temporal factors (e.g., job tenure) to the likelihood of lost days of work due to a work disability (i.e., work disability absence) among adolescents and young adults.

In the fully adjusted model, males were 0.76 times more likely to have a work disability absence compared to females (95%CI: 0.47-1.22). Manual jobs were 2.65 times more likely (95%CI: 1.59-4.41) and manual/non-manual jobs were 1.70 times more likely (95%CI: 0.78-3.68) to have a work disability absence compared to non-manual jobs. Hours worked was positively and linearly associated with the likelihood of a work disability absence, with more than 40 hours/week being especially risky. Education level was inversely associated with likelihood of work disability absences.

Young workers holding manual jobs and those working long hours were at increased risk for work disability absence compared to young workers with non-manual jobs. In addition, low education level was associated with the increased likelihood of a work disability absence. After controlling for other potential risk factors, no gender difference was observed. To decrease work disability absence among young people, the main focus should be on job characteristics such as the physical demands of a job. Also, while a relationship between work hours and work disability absence is expected, policies that limit overtime work among teenagers may decrease the occurrence of work disability absences. Finally, young workers with less education appear to be a particularly vulnerable population, possibly due to inadequate job skills or particularly dangerous jobs (i.e., residual confounding of hazard exposures). Consequently, job training and injury prevention programs targeting this subgroup of workers may be warranted.

Researchers: Curtis Breslin (Institute Coordinator), Sheilah Hogg-Johnson, Ellen MacEachen, Anjali Mazumder, Cameron Mustard, Jason Pole, Peter Smith, Emile Tompa, Ryan Zhao, B Amick (University of Texas)

Stakeholder Involvement: B Kusiak (Ministry of Labour)

Publications:

Breslin FC, Adlaf EM. Part-time work and adolescent binge drinking: The moderating effect of family and community context. *J Stud Alcohol* 2005;784-794.

Breslin FC, Shannon HS. Injury prevention across work and other settings: Opportunities and challenges for collaboration in research and practice. *Scand J Work Environ Health* 2005;31:401-403. [IWH WP #289]

Breslin FC, Smith P. Age-related differences in work injuries: A multivariate, population-based study. *Am J Ind Med* 2005; 48:50-56.

Breslin FC, Smith P, Mustard CA. Young people and work injuries: An examination of jurisdictional variation within Canada. Submitted: *Inj Prev*.

Presentations:

Breslin FC. Pilot survey of young workers. 10 Feb 2005; Toronto, ON: Young Worker Health and Safety Steering Committee, Ontario Ministry of Labour.

Breslin FC. Young workers: What we know and what we need to know. 17 June 2005; Montreal, PQ : Institut de recherche Robert-Sauvé en santé et en sécurité du travail.

External Funding:

Breslin FC, Tompa E, Hogg-Johnson S, Amick B. Work injury and young people: A prospective study. NIOSH: US \$100,000; 2004 - 2006.

Breslin FC, MacEachen E, Shannon HS, Morrongiello B. Work injuries among adolescents: Towards a gendered conceptual framework. CIHR: \$48,024; 2004 - 2005.

Breslin FC, Smith P, Koehoorn M, Vidmar M. Prevalence and determinants of work-related injuries among young workers. WISB/RAC: \$138,000; 2002-2004.

Prevalence and Determinants of Work-related Injuries Among Young Workers in Ontario and British Columbia (408)

Project Status: Ongoing

Introduction: There is a growing body of evidence that young workers are at increased risk of work injuries. Preliminary evidence suggests that individual, work situation and community factors influence the risk of compensated work injuries among young workers. However, the role of workers' compensation policies and youth lost-time claims has not been well documented. This project addresses these issues by conducting secondary data analysis of Ontario and British Columbia workers' compensation databases, each of which contains over 100,000 lost-time claims by young workers.

Objectives:

Using both Ontario and B.C. workers' compensation data, we plan to:

- ▶ Determine the relative contribution of work situation (e.g., occupation) and worker characteristics (e.g., gender) in explaining any differences in relative risk of injury in young workers (15-19 and 20-24 year olds) and adults.
- ▶ Estimate the association between geographic/community level factors and claim rates.
- ▶ Describe and compare the trends in pattern of claim rates over the 1990s for young workers across the provinces and different age groups.
- ▶ Estimate the association between workers' compensation policy changes and claim trends.

Methods: To compute annual claim rates broken down by age (i.e., 15 to 19, 20 to 24, and 25 to 64 years old), gender, industry, and occupation, denominators will be derived using customized tables from the Labour Force Survey. This method of calculating denominators will allow for rates based on full-time equivalents. To examine geographic variation in claim rates, we will use the 1996 Census to compute claim rates for census divisions in both provinces. The census will also provide area-level information on indicators of socioeconomic status such as income and education.

Results:

Job tenure and claim rates:

This analysis examined the relationship between months on the job and lost-time claim rates, with a particular focus on age-related differences. We found that at any age, the claim rates decline as time on the job increases. For example, workers in the first month on the job were over four times more likely to have a lost-time claim than workers with over one year in their current job. The job tenure-injury associations were stronger among males, the goods industry, manual occupations, and older adult workers. These present results suggest that all worker subgroups examined show elevated risk when new on the job. Recommendations for improving this situation include earlier training, starting workers in low hazard conditions, reducing job turnover rates in firms, and improved monitoring of hazard exposures that new workers encounter.

Time trends:

Using workers' compensation administrative data and the Canadian Labour Force Survey this analysis examined the extent to which shifts in the demographic composition of the workforce and occupational changes in industries between 1990 and 2003 account for the progressive decline in lost-time compensation claim rates in Ontario. We determined that lost-time claims

declined by 50.5% over this 14-year period. The declining proportion of manual jobs was positively associated with declining claim rates. The decline in lost-time claim rates appear to be more closely related to changes in the prevalence of manual work rather than changes in the demographic composition of the workforce. The role of the physical demands of the job draw attention to future opportunities to reduce work injuries, including economic and work safety policies that facilitate technological and safety improvements.

Comparison of BC and Ontario Claims:

Using comparable methods of estimating claim rates in Ontario and British Columbia we examined claim rates for similar demographic and industrial groups from 1990 to 2001. In both provinces, the lost-time claim rates declined substantially during this period. Men and younger workers showed the largest declines. The declines tended to be larger in Ontario than in British Columbia. Using comparable methods across jurisdictions to derive claim rates and examine worker subgroups appears useful for prevention planning, intervention evaluation, and policy assessment.

Researchers: Curtis Breslin (Institute Coordinator), Cameron Mustard, Sheilah Hogg-Johnson, Emile Tompa, Mieke Koehoorn, Marjan Vidmar, Ryan Zhao, Hyunmi Lee, Peter Smith

Stakeholder Involvement: Ministry of Labour, Bob Kusiak

Presentations:

Breslin FC, Smith P. Poster: Baptism of fire: The relationship between job tenure and lost-time claim rates. 4-6 April 2005; Toronto, ON: Health & Safety Canada 2005, Industrial Accident Prevention Association (IAPA) Conference and Trade Show.

Publications:

Breslin FC, Tompa E, Mustard CA, Zhao R, Hogg-Johnson S, Smith P. Trends in work-related disability: Do changes in workforce composition and job characteristics account for the decline? Submitted: Am J Pub Health. [IWH WP #313]

Breslin FC, Smith P, Koehoorn M, Lee H. Harmonizing claim rates across jurisdictions: A case study of lost time claims in Ontario and British Columbia. Submitted: Scand J of Work, Environ Health. [IWH WP #312]

External Funding:

Breslin FC, Koehoorn M, Mustard CA, Hogg-Johnson S. Incidence and correlates of lost-time claims among adolescents and young adults in Ontario and British Columbia. WSIB RAC: \$147,844; 2002-2004 extended to Dec 31, 2005.

Work and Work-related Injuries Among High School Students in British Columbia (234)

Project Status: Ongoing

Introduction: The British Columbia High School Study is a multi-wave survey of smoking behaviour in high school students. Questions on work and work-related injuries included in this existing survey will invite self-reported information on patterns of work (e.g., types of jobs and work hours) and work-related injury rates among high school students. This will help us better understand work related injury in this youth population beyond workers' compensation claim data. A second wave of the survey will be administered to approximately 6,250 students.

Objectives:

- ▶ Describe patterns of work among high school students in urban and rural areas of B.C.
- ▶ Calculate work-related injury rates among high school students in urban and rural areas of B.C.
- ▶ Investigate associations between injuries and demographic, occupational, geographic and psychosocial (self-reported measures of stress and social networks) variables.
- ▶ Describe the consequences of work-related injuries in terms of medical aide, reporting of injuries, absence from work or school and compensation benefits.
- ▶ Investigate the feasibility of using web-based surveys (in comparison to pencil and paper based surveys) for occupational research among young workers.

Methods: This study is a cross sectional survey design. The proposed research study represents the inclusion of a new 2-page section on work patterns and work-related injuries to an existing survey of health behaviours among adolescents. As part of this existing survey, we will sample a total of 7,000 adolescents in grades 8-12 attending randomly selected secondary schools in five regional areas of British Columbia. Ten school districts within these areas have been targeted to include students from a range of urban, rural and remote communities. Data will be collected by two mechanisms: a pencil and paper survey and a web-based survey. The new section will include items to measure work for pay, types of work, hours of work, work-related injury, type of injury, and injury consequences. This data will be used to calculate injury rates and to investigate risk factors for work-related injuries (demographic/ socioeconomic, occupational, geographic). Linkage with the other variables included on the survey will also allow us to further explore the relationship between injury risk and measures of stress, social networks and self-esteem.

Results: Reliance on claim data may not provide a complete picture of youth injury experiences in the work force for a number of reasons including under reporting to compensation systems and incomplete denominator data in an inexperienced and transient segment of the workforce. Of a total of 8,056 respondents 4,307 reported working for pay during the previous year (53.5%) and of these 520 (12.1%) reported a work related injury. Only half of these were reported to the workplace (n =265).the overall self reported rate for work injuries resulting in both medical attention and absence from work/school was 11.1 injuries per 100FTEs. The self-reported workers' compensation claim rate was 3.6 claims per 100 FTEs.

Research Lead: M Koehoorn (University of British Columbia)

Stakeholder Involvement: WCB of B.C. Young Worker Safety Steering Committee (Prevention Division) and the B.C. Injury Research and Prevention Unit (Centre for Community Child Health Research)

Publications:

Koehoorn M, Breslin C. Self-reported work and work-related injuries among high school students in British Columbia. Forthcoming: JOEM (Project 234: BC High School Study)

External Funding:

Koehoorn M, Breslin FC. Youth at work: B.C. high school survey on work-related injuries. Workers' Compensation Board of British Columbia: \$50,215; 2004-2006 (Administered at UBC)

Systematic Review: Risk Factors for Work Injury Among Youth (409)

Project Status: Ongoing

Introduction: A growing body of recent research attempts to explain why young people (e.g., adolescents 15 to 19 years old) have an elevated risk of work injuries. Though many correlates of work injuries have been identified there has been no systematic review of the literature to assess the empirical strength of individual and work-related factors. This is one of the systematic reviews being undertaken in 2005 as part of an IWH pilot project funded by WSIB to focus on reviews of the literature in the area of workplace intervention.

Objectives:

- ▶ Conduct a systematic review of individual and work-related risk factors associated with youth work injuries.

Methods: To locate the literature on risk factors for youth work injuries, we will use the systematic search strategies developed by the Cochrane Collaboration and here at the Institute for Work & Health to locate relevant reports and unpublished literature.

Literature search: For our literature search the research question is, What individual, job, and workplace factors are associated with work injuries among adolescents? The inclusion criteria are that the study sample be primarily composed of people 15 to 19 years old who are performing paid work for an employer or a family business. The outcome measure must be an indicator of work injury, which includes musculoskeletal disorders, acute injuries (e.g., burns), and traumatic injuries, but excludes occupational disease and fatalities. The predictors can include demographic variables, job characteristics, and psychosocial and organizational factors. With regard to study design, we will include cross-sectional or prospective studies with self-report measures. We will search MEDLINE and PsycINFO databases as well as the occupational health and safety references supplied by the Canadian Centre for Occupational Health and Safety. All of the databases will be searched from 1980 to present using database-specific terms to cover adolescent or young workers, occupational injuries, and intervention studies with a particular focus on risk factor analysis. For articles identified from the databases, titles and abstracts will be screened to determine if they meet the inclusion criteria. Once the relevant studies have been identified, the following kinds of data will be extracted from the article/report: Study question, study design, study population characteristics, data analysis, brief description of the measures used, results, reliability and validity information (if any).

Results: This review systematically assessed the evidence on risk and protective factors for teenage and young adult workers. Of the 6,043 articles originally identified 46 met the pre-established quality and relevance criteria. The bulk of the studies, especially those using multivariate analyses, focused on teenage workers. However, where comparable data were provided for young adults, the same risk pattern was observed.

In general, we found that when it comes to injury risk, the type of job or workplace mattered more than the nature of the young workers themselves. Specifically, there was consistent evidence that number of work hazards and perceived work overload were associated with injury risk. A potential exception to the preeminence of job/workplace factors in work injury risk was that teenagers of visible minority groups showed an elevated injury risk even after job/workplace factors were controlled.

Our evidence synthesis leads us to make the following recommendations for workplace parties (employers, organized labour, relevant government agencies, prevention/compensation system):

- ▶ Focus on reducing unsafe work conditions to decrease injuries among high-risk subgroups such as young males.
- ▶ Increase awareness about work overload being a risk factor for work injuries among young workers and supervisors.

Researchers: Curtis Breslin (Institute Coordinator), Jason Pole, Sudipa Bhattacharyya, Emile Tompa, Emma Irvin, Stella Chan, Lynda Robson, Kathy Knowles Chapeskie, Kim Cullen, Quenby Mahood, Doreen Day, Judy Clarke, Anna Wang

Stakeholder Involvement: B Kusiak (Ministry of Labour), C Carr, C-M Fortin (WSIB), W Utin (Erlangen, Nürnberg, Germany) Meetings with stakeholders will be set up during and at the end of the review process.

Presentations:

Day D, Breslin C, Irvin E. Poster: Systematic review methodology – Risk and protective factors for youth work injuries. 6-8 Nov 2005; Halifax, NS: 2005 Canadian Injury Prevention and Safety Promotion Conference.

Publications:

Breslin FC, Day D, Tompa E, Irvin E, Bhattacharyya S, Clarke J, Wang A. Systematic review of risk factors for work injury among youth. Toronto: Institute for Work & Health.

External Funding:

Breslin FC. Systematic Review: Risk factors for work injury among youth. McMaster University: Institutional Capacity Enhancement (ICE) pilot project: \$13,325; 2004 - 2005.

WSIB – Pilot Funding: Prevention Systematic Reviews: \$345,000 annually; 2004-2007.

Summary Report can be found at: <http://www.iwh.on.ca/research/sr-lmeh.php>

Under-employment and Contingent Work (486)

Project Status: Ongoing

Introduction: The key question to be addressed by this study is as follows: what are the health consequences of precarious employment experiences? The project will use two existing longitudinal health and labour-market surveys from Statistics Canada: the Canadian National Population Health Survey (NPHS), and the Canadian Survey of Labour and Income Dynamics (SLID). A number of conceptual and methodological issues will be addressed in the analytical work. Development of theoretical and operational constructs for the measurement of precarious employment is an important first step. Four health outcome measures will be used in the analyses: 1) self-reported health status; 2) the Health Utilities Index (HUI); 3) work disability; and 4) illness-related work absences. An important issue to be addressed is the need to test and control for selection effects, i.e., controlling for the possibility that less healthy workers are more likely to be selected into underemployment and contingent work.

Objectives:

- ▶ Determine whether individuals who experience precarious employment have lower levels of health or suffer larger declines in health than those who are in secure employment positions.
- ▶ Determine whether the association between precarious employment and health, if present, is stronger for individuals who experience it more frequently, or for longer periods of time.
- ▶ Determine whether the association between precarious employment and health, if present, is magnified or modified by the context of these experiences.
- ▶ Determine whether exposure to precarious employment experiences is more likely to result in adverse general and mental health outcomes for individual with specific socio-demographic characteristics (e.g., women, older individuals, single parents, visible minorities, individuals with little formal education, and people with disabilities).

Methods: Our research proceeded in three stages, namely: 1) development of a conceptual framework for “work-related precarious experiences”, which highlights the key dimensions of work experiences that make these insecure or physically hazardous and elaborates the paths between these experiences and downstream health effects; 2) examination of the trends, patterns and prevalences of nonstandard work forms and the dimensions of work-related precariousness across gender and age groups for the period 1976 to 2002; and, 3) statistical regression analyses to investigate the impact of exposures to precarious employment experiences on several health-related outcomes including level of general and functional health, and the probability of transitioning to worse health. For the modeling component, we used a statistical procedure that accommodates the special properties of panel data, including the need to adjust for the correlation of multiple individual observations taken across time. We also took several steps to control for the problem of reverse causality (i.e., where poor health precedes exposure to negative employment experiences), lending credibility to our findings.

Results: Conceptual paper: We developed a conceptual framework of the relationship between precarious employment experiences and health in which there are 8 key dimensions of work experiences that affect health through stress, exposure to hazards, and material deprivation. Here are the 8 dimensions: 1) Degree of certainty of continuing work; 2) Control over work processes; 3) Legal and institutional protection; 4) Income and benefits adequacy; 5) Work-role status; 6) Socio-cultural environment at work; 7) Risk of exposure to physical hazards; 8) Training and career advancement opportunities.

Trends paper: We describe trends in non-standard work in Canada over the last 3 decades. Key findings are that non-standard work arrangements have been on the rise. In particular, the youngest and oldest age groups have experienced increases, as have women in general. Specific forms and arrangements that have increased dramatically are part-time work, involuntary part-time work, solo self-employment, and multiple job holding.

Underemployment paper: We find that certain groups have a higher prevalence of exposure to underemployment, specifically visible minorities and younger individuals. Results from regression analyses indicate that the negative health impact of underemployment is unevenly distributed across different “social locations.” Depending on age and gender, exposure to some types of underemployment affects some groups of workers but not others.

Precarious Employment paper: The results from logistic regressions stratified by gender and age group did not identify a significant association between within-year exposure to nonstandard work and self-reported health status. In the models with proxies for dimensions of precarious employment experiences, among the key work-related factors that translate into declines in health and/or contribute to lower levels of health are: working in a manual occupation, having no employer-provided pension plan, having low individual earnings, and working substantial unpaid overtime hours.

Researchers: Emile Tompa (Institute Coordinator), Heather Scott, Roman Dolinski, Cameron Mustard, Scott Trevithick, Supipa Bhattacharyya

Stakeholder Involvement: Summary discussion document being prepared. Engage Ministry of Labour (MoL), WSIB, Human Resources Development of Canada (HRDC), Toronto Organization for Fair Employment (TOFE) in discussions.

Presentations:

Scott-Marshall H, Tompa E, Trevithick S. The health consequences of under-employment. 9-11 March 2005; Newport Beach, CA: 4th International Conference on Work Environment and Cardio Vascular Disease (ICOH) [IWH WP #274]

Scott-Marshall H. A renewed framework for investigating the nature and health consequences of work-related insecurity for the new economy. 15-17 May 2005; Vancouver, BC: Canadian Association for Research on Work and Health (CARWH) Bi-Annual Symposium

Tompa E, Scott-Marshall H, Dolinski R. The health consequences of precarious employment experiences. 9-11 March 2005; Newport Beach, CA: 4th International Conference on Work Environment and Cardio Vascular Disease. [IWH Working Paper #268]

Tompa E, Scott-Marshall H, Dolinski R. The health consequences of precarious employment experiences. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium [IWH WP #268]

Tompa E, Scott-Marshall H, Dolinski R. The health consequences of precarious employment experiences. July 2005: International Health Economics Association

Publications:

Dolinschi R, Tompa E, Bhattacharyya S. Precarious employment experiences and functional health. [IWH WP #273]

Scott-Marshall H, Tompa E, Trevithick S. The social patterning of underemployment and its health consequences. Submitted: Soc Sci & Med [IWH WP #274]

Tompa E, Scott-Marshall H, Dolinschi R. The health consequences of precarious employment experiences. Submitted: Soc Sci & Med [IWH WP #268]

Tompa E, Scott-Marshall H, Dolinschi R, Trevithick S, Bhattacharyya S. Precarious employment experiences and their health consequences: towards a theoretical framework. Forthcoming: Work: A Journal of Prevention, Assessment and Rehabilitation [IWH WP #232]

Tompa E, Dolinschi R, Scott-Marshall H, Trevithick S, Bhattacharyya S. Work-related precariousness: Canadian trends and policy implications. Submitted: Canadian Public Policy [IWH WP #281]

Tompa E, Trevithick S, Scott-Marshall H, Dolinschi R, Bhattacharyya S. Precarious employment experiences and their health consequences: Towards a theoretical framework. [IWH WP #232]

External Funding:

Tompa E, Lavis JN, Mustard CA. The health and safety consequences of underemployment and contingent work. CIHR: \$134,643; 2002-2004

Tompa E, Lavis JN, Mustard CA. The health and safety consequences of underemployment and contingent work. WSIB RAC: \$13,024; 2002-2004 (Top-up to CIHR funding)

Precarious Employment and People with Disabilities (Community-University Research Alliance - CURA) (402)

Project Status: Completed

Introduction: This project will investigate the characteristics of individuals (who) and the nature of elements (what) are missing from the available data (WSIB, CSST, Statistics Canada Health and Labour-market Surveys) on work injury and work injury absence as they relate to precarious employment. Through a literature review and review of the information recorded in various data sources, we will assess the type and magnitude of underestimation of the burden of work injury arising due to individuals being employed in precarious work. These burdens may be transferred to private insurance systems, to individual workers and their families, and/or to other publicly funded insurance systems such as Employment Insurance and provincial health care insurance.

Objectives:

- ▶ Assess who and what is missing in the data on work injury and work injury absence.
- ▶ Describe the burden of work injury not accounted for in OHS data and statistics.
- ▶ Assess whether and how precarious employment experiences are an important factor in the transfer of the burden to other programs and to other sectors of society.

Methods: Literature review of studies investigating the employment experiences of people with disabilities over the last decade in Canada and the United States. Cross-section time series data analyses of employment experiences of people with disabilities as compared to women and people of colour based on data from the Labour-market Activity Survey and the Survey of Labour and Income Dynamics.

Results: Our findings show that people with disabilities are more loosely attached to the labour force than people without disabilities. They are more likely to leave the labour force during downturns in the business cycle, and more likely to be unemployed if they remain. Their low levels of individual and household income shape their experience of precariousness. Finally, they are more likely to fall below Statistics Canada's low-income thresholds, and considerably more likely to require social assistance than people without disabilities.

Labour force participants with disabilities have lower average annual earnings than non-disabled participants. Even if the average annual earnings of people with disabilities with their non-disabled counterparts in specific forms of employment, from part-time work (temporary and permanent or self-employment or wage work) to full-time wage work (temporary and permanent), are compared, the former have lower earnings across all forms. Furthermore, they are more likely to be engaged in non-standard work and, in particular, part-time work. Though the levels of satisfaction with part-time employment for people with disabilities are similar to those of the non-disabled, it may be that people with disabilities assume that appropriate accommodation in full-time work (wage work or self-employment) is not feasible.

Though many policy initiatives are geared towards public sector employers, the proportion of labour force participants with disabilities employed in this sector is similar to the proportion of non-disabled participants. A higher proportion of women with disabilities than men with disabilities work in this sector, although, as noted, the aggregate of these two groups totals a public sector employment rate similar to that of the people without disabilities. Notably, there are some indications of improvements in public sector employment rates for women with disabilities, advances that, in the early-to-mid-1990s, were lower than those of women without disabilities.

Based on the trends observed, there is little indication that people with disabilities are catching up to their non-disabled counterparts. People in some social locations, within the disabled population, fare relatively better than people in others. Men with disabilities, both visible minority men and non-visible minority men, appear to be the least disadvantaged of this group. In fact, men with disabilities fare better than women without disabilities on many of the dimensions investigated. Whether this finding can be attributed to the protection provided by legislation is unclear. What is evident is that women with disabilities certainly experience greater disadvantage as labour force participants. Gender is thus a critical factor not addressed adequately in disability policy. In the face of the rise of precarious employment, policy developments have not demonstrably improved the labour market experiences of people with disabilities. At best, they may have kept the dramatic churning of the labour market at bay.

Researchers: Emile Tompa (Institute Coordinator), Scott Trevithick, Jaime Guzmán, Supida Bhattacharyya, Ellen MacEachen, Heather Scott, Roman Dolinski, Renée-Louise Franche, K Lippel (Université du Québec à Montréal (UQAM))

Stakeholder Involvement: This work is part of a research program on precarious employment supported by a Community-University Research Alliance (CURA) initiative. The research program was developed in conjunction with the community of workers in precarious employment, in particular the Toronto Organization for Fair Employment (TOFE).

Presentations:

Bhattacharyya S, Mansurova L. CV module workshop for members of the Community-University Research Alliances (CURA) injured workers group. 23 June 2005.

MacEachen E. Qualitative research terms and methods. 3 Nov 2005; Toronto, ON: Injured worker community working group, injured workers consultants.

Publications:

Tompa E, Scott-Marshall H, Trevithick S, Bhattacharyya S. Precarious employment and people with disabilities. In: Vosko LF, editor. Precarious employment: Understanding labour market insecurity in Canada. Montreal: McGill University Press, 2006

The Impact of Multiple Roles and Gender Role Beliefs on Health and Health Behaviours in Parents of Young Children (109)

Project Status: Ongoing

Introduction: The impact of parental stress, occupational stress, and their interaction on mental health has received considerable attention in the past decade. However, little is known about the impact of multiple roles such as parental and occupational activity on health and health risk behaviors, particularly among parents of very young children. This longitudinal multi-site study examines the impact of multiple roles on health risk behaviors, psychological health, and physical health perception of healthcare workers and their partners, using three waves of data collection. A special emphasis is placed on women before, during, and after taking a maternity leave from work. This approach will assess pre-existing workplace and home factors as determinants of health and of health risk behaviors.

Objectives:

- ▶ To examine the impact of gender, parenting status and parenting arrangements on health and health behaviors (physical activity, diet, smoking, alcohol consumption, stress reduction, sleep hygiene) during the adaptation to the parental role.
- ▶ To examine the impact of modifiable psychosocial factors — multiple role strain, over-commitment, occupational stress — on psychological health, physical health perception, and health risk behaviors in working parents and non-parents.
- ▶ To examine the impact of the occupational environment on the health of mothers returning to work.

Methods: Longitudinal multi-site study of health care sector employees (and their partners) who are taking maternity leaves, compared to other employees (and their partners). Three data collection points for the maternity group and two for the comparison group.

Results: Sleep paper: The experience of work-family conflict can have a detrimental impact on employee health, both physically and psychologically. Poor sleep quality is often associated with physical and psychological health conditions, particularly those involving chronic pain or depression. This study examined the relationship between work-family spillover, Karasek's job demand-control-support model and sleep quality. Multiple regression analyses revealed that positive family to work spillover is associated with good sleep quality after controlling for age, physical health, depressive symptomatology and number of children, $F(9, 171) = 9.96, p < .05$. Potential mediating pathways are noted. This research highlights the importance of examining both positive and negative factors associated with work-family balance issues.

Depression paper: Literature pertaining to the relationship between workplace factors and depression has been compartmentalized: Work conditions, family conditions, and work-family balance have been studied separately as predictors of depressive symptoms but not concurrently. In this analysis work conditions and work-family spillover were considered concurrently as modifiable workplace factors associated with depressive symptomatology, while controlling for confounding socioeconomic factors.

Path analysis supported the presence of a direct relationship between depressive symptoms and high effort-reward imbalance, high negative work-family spillover, low positive family-to-work spillover, and low education. The indirect effect of low support from work was mediated by negative work-to-family spillover and high effort-reward imbalance. The indirect effect of high effort-reward imbalance was mediated by increased negative work-to-family spillover. The

indirect effect of having children 18 years or younger was mediated by decreased positive family-to-work spillover. An indirect effect of low education was mediated by high effort-reward imbalance and high negative work-to-family spillover. The association between work conditions and depressive symptomatology is mediated by increased negative work-to-family spillover. The impact of having young children is mediated by decreased positive family-to-work spillover.

Researchers: Renée-Louise Franche (Institute Coordinator), Alysha Williams, Selahadin Ibrahim, Cameron Mustard

Stakeholder Involvement: Staff at the three hospital sites - Thunder Bay Regional, Ottawa Civic and Toronto's University Health Network: Involved from the beginning of the project in the planning of the study.

Publications:

Franché R-L, Williams A, Ibrahim S, Grace SL, Mustard CA, Minore B, Stewart DE. Path analysis of work conditions, and work-family spillover as modifiable workplace factors associated with depressive symptomatology. Accepted: Stress & Health. [IWH WP #229]

Williams A, Franche R-L, Ibrahim S, Mustard CA, Layton FR. Examining the relationship between work-family spillover and sleep quality. In press, J Occup Health Psychol [IWH WP #276]

Presentations:

Franché R-L, Pole J, Hogg-Johnson S, Vidmar M, Breslin C. The impact of work-related musculoskeletal injuries on workers' caregiving activities. 7-10 June 2006; St. John's NFLD: Abstract submitted to Safety-Net and Canadian Association for Research on Work and Health (CARWH) International Conference.

External Funding:

Franché R-L, Minore B, Mustard CA, Feldberg G, Stewart D. The impact of multiple roles and gender role beliefs on health and health risk behaviours in parents of young children. SSHRC: \$198,600; 2001-2003 extended to Sept 2005

Social Inequalities in Mental Illnesses in the Canadian Community Health Survey Cycle 1.2 (304)

Project Status: Ongoing

Introduction: Using the 1996/97 Canadian National Population Health Survey (NPHS) researchers have calculated the cost of depression and distress to be \$14.4 billion in 1996. The etiology of mental illnesses is complex and poorly understood. Work-related psychosocial factors are one set of factors implicated in the onset and progression of mental illnesses. The Canadian Community Health Survey (CCHS) Cycle 1.2 (n~30,000) is the first Canadian survey to measure several mental illnesses (depression, distress, mania, panic disorder, social phobia, substance abuse, eating disorders, agoraphobia), work stressors, non-work social support and other socio-demographic variables at the national level. Using the CCHS, this study investigates the association between mental illnesses and work characteristics across occupational/income/educational categories. Although cross-sectional, it will shed some light on the possible factors that link social position to mental illnesses.

Objectives:

- ▶ Investigate the association of work psychosocial factors with prevalent mental health disorders.

Research Lead: Selahadin Ibrahim

KTE in Population Workforce Studies

Project Title: Linking with Policy-makers

Introduction: One of the goals of KTE is to find effective ways to make IWH research evidence available to inform policy development. Decision-makers in the policy field include insurers, provincial and federal ministries of labour and health. KTE works closely with the Office of the President in this work.

KTE focus in 2005 continued in the area of youth injury and further dissemination of results of the literature review on experience rating programs and occupational health and safety regulatory practices.

Objectives:

- ▶ To assist with stakeholder input and message extraction for the systematic review on the prevention of youth injury.
- ▶ To reach policy-makers outside Ontario with messages from experience rating and occupational regulatory practices.
- ▶ To support policy initiatives led from the President's Office.

Messages:

Young workers:

The first month on the job poses the highest risk of injury for all new workers, including young workers.

The type of job or characteristics of the workplace are more important for risk assessment than the individual characteristics of young workers themselves.

Effectiveness of experience rating and occupational regulatory practices:

There is moderate evidence that the degree of experience rating reduces the frequency and/or severity of injuries.

When orders and fines are imposed on a firm as the result of an inspection, the frequency and severity of injuries are reduced.

Audiences: Policy makers including Ministry of Labour (MoL), WSIB, other worker compensation boards and prevention partners such as the health and safety associations.

Summary of Accomplishments:

Young Workers:

Meeting in February 2005 with stakeholder representatives to refine the questions for the young workers systematic review.

Meeting in November 2005 with stakeholders to assist with message extraction and implications of findings of the systematic review.

Briefing: Non-traumatic injuries among young workers—completed and posted on IWH web site
News release August 11, 2005: Job characteristics contribute greatly to increased risk of injury among young workers.

Meetings held with stakeholders in late 2005 to develop audience-linked messages.

Focus groups for Systematic Review: Risk Factors for Work Injury Among Youth.

Effectiveness of Experience Rating and Occupational Health and Safety Regulatory

Practices: Office of the President arranged briefings with MoL staff and senior management of WSIB. Experience rating results shared with WCBs nationally via AWCBC forum. Representatives from Ministries of Labour across Canada reported that the findings from this review have proved valuable in current policy/program developments.

Team: Kathy Knowles Chapeskie, Jane Brenneman Gibson, Melissa Cohen, Cameron Mustard, Robin Kells, Curtis Breslin, Emile Tompa.

Workplace Studies Program

Over the course of 2004/5, this program has undergone internal reorganization with Drs Ellen MacEachen and Philip Bigelow assuming the role of joint program chairs. Drs John Frank and Donald Cole continue to contribute to the development of the program. As an outcome of the program's 2005 planning retreat, the key thematic focus of research here will continue to as *workplace interventions and evaluations*.

The overall goals of the Workplace Studies program are to understand the determinants of workplace health and well being and to evaluate the effectiveness of methods to improve outcomes in specific work settings. Workplaces and workers' compensation system leaders want more effective ways to reduce the risk factors for work-related illness and injury. Both are interested in intervention research that demonstrates effectiveness, or its absence, of methods for improving workplace conditions and health. Currently, policy makers struggle to develop regulatory or incentive structures to improve prevention with few rigorous evaluations of workplace intervention. The organization of work is increasingly understood to have an important role in shaping exposures involved in the onset of many health problems, including work-related musculoskeletal disorders (WMSD). Work organization at the individual, job, unit and workplace levels is a feature of the Institute's work in this theme, with an emphasis on how work organization determines biomechanical and psychosocial work exposures.

Workplace Interventions & Evaluations

Some projects within this theme are directed essentially at understanding processes that have impact on health and safety in the workplace, such as the way in which informal interests of managers interact with the legal and policy environment in 'new economy' workplaces, the impact of transformational leadership on musculoskeletal disorders and injuries, the behaviour of non-profit organisations in respect of occupational health and safety. Several projects focus on the evaluation of the effectiveness of particular workplace interventions such as preventing RSI in the newspaper industry. Others are systematic reviews of entire literatures on aspects of prevention, such as office ergonomic interventions to improve musculoskeletal and visual health and effectiveness of systems of inspection in preventing musculoskeletal disorders. Yet other projects focus on methodology such as the development of appropriate methods of economic evaluation of workplace interventions.

The main audiences for the research reported here are workplace parties such as consultants and ergonomists working for health and safety associations, management and labour and ergonomists and kinesiologists in general whose focus is primary prevention. By combining research evidence with the experience of labour and management, we hope to maximize the relevance, timeliness and implementability of the research.

One large project which IWH researchers undertook in 2005 and which will carry forward into 2007 is an evaluation of the Ministry of Health and Long-Term Care initiative on patient lift devices. Patient lifting, transferring and repositioning is the leading cause of injury in Ontario's health care workplaces. In the May 2004 provincial budget, the Government of Ontario announced that it would invest \$60M in fiscal year 2004/05 for the purchase and installation of 11,000 patient lifts in Ontario health care institutions. In March 2005, the Institute entered a research agreement with the Ministry of Health and Long-Term Care to evaluate the effects of the program.

The evaluation will measure the impact of patient lifts on musculoskeletal function and injury among caregivers as well as the impact of patient lifts on caregiver workload. It will also measure the quality of training for caregivers and assess the economic costs and benefits of patient lift equipment.

The interdisciplinary research team includes members from the Institute for Work & Health, University of Toronto, University of Western Ontario, Toronto Rehabilitation Institute, University of Waterloo and York University. The project will report initial findings in late 2006. The outcome of this evaluation may provide useful information on effective prevention strategies relevant to the WSIB Prevention, Workplace Design and Intervention Research priority.

Several of the systematic reviews undertaken through the WSIB funded pilot on systematic reviews to examine and synthesize the international literature on the effectiveness of prevention interventions in the workplace fall within this theme. Reviews on the effectiveness of participatory ergonomic interventions and of OH&S management systems were completed in late 2004. Several more reviews were completed in 2005 including: a narrative review on the effectiveness of workplace health and safety audit tools; a narrative review of economic evaluation of primary and secondary MSD prevention interventions in workplace setting; systematic review of computer-related office interventions to improve musculoskeletal and visual health; and the previously mentioned systematic review on risk factors for work injury among young workers.

Additional initiatives in this theme continue to build on the longstanding collaboration with IWH adjunct scientist Richard Wells and other colleagues at the University of Waterloo based CRE-MSD. Three pilot studies affiliated with the CRE-MSD and involving HSA partners were started in 2005. In a study with the Industrial Accident Prevention Association (IAPA), Institute researchers are designing a protocol to improve the process for evaluations of participatory ergonomic interventions. Working with the Electrical and Utilities Safety Association (EUSA) IWH researchers are concurrently developing instruments to be used in the evaluation of a EUSA program of ergonomic interventions to prevent work place MSK disorders. And in conjunction with the Ontario Service Safety Alliance (OSSA) and Queen’s University, IWH researchers are examining the impact of transformational leadership on musculoskeletal disorders in subordinates. The results of all three of these studies are expected in 2006. These, along with the systematic reviews will contribute to the *Prevention, Workplace Design and Intervention Research* priority.

Project Titles:

Evaluation of Overhead Patient Lifting Devices in Ontario (252).....	54
Prospective Nursing Care Model (208).....	54
WMSD: Evaluating Interventions Among Office Workers (430).....	55
Workplace Musculoskeletal Health Intervention Research Program (WHIR) (216).....	56
Evaluating a Partner-based Participatory Intervention for Musculoskeletal Disorders in a Medium Workplace (270)	57
Evaluation of the Impact of a Participatory Ergonomics Intervention (CAW/OHCOW) (238)	58
Evaluation of Sustainability of Ergonomic Interventions (242).....	58
Exploring Organizational Factors and Safety Climate in the Implementation of an Ergonomic Intervention (229).....	59
Evaluation of a HSA-initiated Collaborative Partnership to Implement Participatory Ergonomic Programs (233).....	59
Exploration of the Feasibility of Participative Interventions to Reduce MSD in the Construction Sector (262)	60
Evaluation and Sustainability of Ergonomic Interventions (228)	60
Systematic Review of Computer-related Office Interventions to Improve Musculoskeletal and Visual Health (970)	61
Review of Occupational Health and Safety Audits (955)	63
Systematic Review: Effectiveness of Education and Training Strategies for the Protection of Workers (975).....	65
Manager Commitment in New Economy Organizations (222).....	66

Evaluating the Effect of Transformational Leadership on MSK Disorders and Minor Injuries in the Service Sector (275)	66
The Logic of Practice: An Ethnographic Study of WSIB Front-line Service Work with Small Businesses (227)	67
Are Non-Profit Organizations Healthy Workplaces? Working Conditions and Occupational Health and Safety of Paid Employees and Volunteers (219)	67
Systematic Review of Studies that Undertake Economic Evaluation of Workplace Interventions Directed at Primary and Secondary Prevention (960)	69
Methodologies for the Economic Evaluation of Workplace Interventions (218).....	70
KTE in Workplace Studies.....	71

Evaluation of Overhead Patient Lifting Devices in Ontario (252)

Project Status: Ongoing

Introduction: The Government of Ontario announced a commitment to invest \$60M in fiscal year 2004/05 in the purchase and installation of 10,000 new overhead lifts for Ontario health care institutions. There is a clear need for rigorously conducted research that would evaluate the effectiveness of this programme. We will be taking advantage of this unique “natural experiment” to conduct an extensive before-after quasi-experimental study.

Objectives:

- ▶ To evaluate the new lift installation programme from three key perspectives: prevention of lifting-related injuries in health care staff; the quality of patient care; the quality of work life for health care staff directly involved in patient lifting. The overall emphasis of the evaluation will be to determine the cost-effectiveness of the lift programme.

Research Leads: Cameron Mustard, Mickey Kerr

Prospective Nursing Care Model (208)

Project Status: Ongoing

Introduction: The nurse practice environment is a key determinant of nurses’ health and job satisfaction and may also be a major contributor to quality of patient care. Additionally, results from the Ontario site of a large international survey on nurse practice and patient outcomes suggest that hospital restructuring may have had a negative effect on several important elements of nurse well-being, including burnout and job satisfaction. However, this was a one-time cross-sectional survey, which is inherently unsuited to rigorous examination of an essentially dynamic process. In order to create an evidence-base for judgments about the links between the practice environment and nursing practice we are taking advantage of a unique "natural experiment" whereby three recently merged hospitals will now all be adopting a new professional nursing practice model. We are conducting a longitudinal evaluation of this new common practice model, with special emphasis on its potential impact on nurse well-being, organizational climate, and the quality of patient care.

Objectives:

- ▶ Determine the multilevel (individuals; units and (former) hospitals) impact of adopting a new, common clinical practice model for nursing care across three recently merged campuses of The Ottawa Hospital.
- ▶ Three main research questions will be addressed in this study are: 1) What are the effects of introducing a new model for nursing care on nurse work stress and nurse well being? 2) What are the effects of introducing the new nursing care model on organizational climate, at both the unit and hospital (site) levels? 3) What are the effects of introducing the new nursing care model?

Research Lead: Mickey Kerr

WMSD: Evaluating Interventions Among Office Workers (430)

Project Status: Ongoing

Introduction: Workplace parties have expressed considerable interest in evidence of effectiveness, evaluation of workplace programs designed to prevent and limit work-related musculoskeletal disorders of the neck and upper limb (MSD). This final phase of collaborative research with the Star-SONG workplace partners aims to assess the impact of a joint labour-management directed program on all aspects of prevention of MSD among office workers in the newspaper industry. In particular we are interested in using structural equation modelling to look at change over time in this cohort and to gain a fuller understanding of the adequacy and financing of health care utilization for work attributable MSD.

Objectives:

- ▶ Assess whether the “Stop RSI” Program results in a workforce wide reduction in self-reported exposures to physical and psychological risk factors for MSD with a concomitant reduction in the self-reported period prevalence and severity of MSD symptoms and their associated disability.
- ▶ Evaluate an enhanced workplace MSD surveillance system for risk factors and symptoms of MSD.
- ▶ Monitor baseline levels of symptoms, function, work performance limitations and self-efficacy among those reporting MSD to the occupational health centre and receiving a variety of individually focused worksite interventions and clinical treatments funded by the workplace.
- ▶ Model changes in rates of sickness absence, rates of health care utilization and associated costs for MSD, to assess whether these measures are different across organizational units of the company or across groups of employees reporting different levels of risk factors, and to determine whether the “Stop RSI” Program results in reductions in these measures over time.

Research Lead: Donald Cole

Workplace Musculoskeletal Health Intervention Research Program (WHIR) (216)

Project Status: Completed

Introduction: The burden of workplace-associated injury, particularly musculoskeletal disorders, has been attributed to both physical and social aspects of work settings. Differences in burden occur both across jobs/sectors and across genders. Workplace parties (union and management representatives) and insurers have urged researchers to work with them on interventions to reduce this burden. Some of the major perceived barriers to the implementation of ergonomics programs or to healthier organizational design are the disinterest in research evidence or, among those interested, the lack of sufficient rigorous and persuasive intervention research. Following on a pilot study whose ultimate goals were much broader we have scaled down this project for 2005 and will seek to address these issues through a suite of smaller projects partnering with those workplaces willing to share information on interventions underway or participate in pro-active workplace intervention research.

Objectives:

Improve our understanding of the factors influencing the success of workplace interventions designed to reduce the burden of musculoskeletal disorders through:

- ▶ Systematic evaluations of the effectiveness of diverse workplace interventions, designed with workplace parties and tailored to their specific needs and interests;
- ▶ Long-term follow-up in workplaces working with system partners or participating in assessments or demonstration projects;
- ▶ Comparisons across intervention experiences.

Methods: Initially, through a layered process of screening and assessment within a defined cohort of workplaces, program researchers would seek to better characterize those workplaces interested in intervention research findings as well as those workplaces willing to participate in workplace intervention research. Subsequently, researchers will undertake systematic evaluations of the effectiveness of diverse workplace interventions, designed with workplace parties and tailored to their specific needs and interests, to improve injury and musculoskeletal health outcomes. The team worked with system partners to develop the strategies and tools required to fulfill these objectives and to mobilize the resources needed to implement the research program.

Results: In our working paper #316 we describe the development phase of a research program that, over its course, included at least six partner organizations, twelve members of the research team from six universities, and over 20 members of the broader provincial workplace health and safety system. The multistakeholder involvement in the design of a multi-year program to evaluate workplace-based interventions to reduce the burden of work-related musculoskeletal disorders was reflected upon. We documented the interactions between the researchers and stakeholders, from the conceptualization of the research program to the collaborative initiation of three different streams of workplace health intervention evaluations. Finally we described the development of partner-researcher collaboration, tracked the conceptual and instrumental transformations in research design, and reported on indicators of the partners' research knowledge utilization.

We also drew on our experience on challenges in workplace recruitment for working paper #317 where we argued for the combination of knowledge transfer and exchange with intervention evaluation.

Researchers: Donald Cole (Institute Coordinator), Philip Bigelow, Roman Dolinski, Sue Ferrier, Irina Rivilis, Michael Swift, Emile Tompa, Dwayne Van Eerd, Dee Kramer (University of Waterloo), N Theberge (University of Waterloo), R Wells (University of Waterloo)

Stakeholder Involvement: A. Clarke (Clarke Browne & Associates), L. Scott (Organizational Solutions). Primarily in associated pilot work and for work disability management.

Publications:

Kramer DE, Cole DC, Hepburn G, Theberge N, WHIR development team. Walking a mile in each others' shoes: The evolution of a research design with workplace health and safety partners as part of the process. [IWH WP #316]

Cole DC, Van Eerd D, Bigelow P, Rivilis I. Integrative interventions for MSDs: Nature, evidence, challenges and directions. Submitted: Am J Ind Med [IWH WP: 317]

External Funding:

Cole DC, Hepburn CG, Tompa E, Theberge N, Wells R, Barling J, Vezina N, Lanoie P. Workplace interventions to reduce workplace injuries and improve musculoskeletal health: a program of intervention research. CIHR: \$99,500; 2003-2004.

Evaluating a Partner-based Participatory Intervention for Musculoskeletal Disorders in a Medium Workplace (270)

Project Status: Ongoing

Introduction: Acute injuries and musculoskeletal disorders are the most common compensation claims, accounting for a large part of measured costs. To address the costs of these injuries, participatory ergonomic (PE) interventions are often recommended. Such interventions are not easy to evaluate rigorously. The Industrial Accident Prevention Association (IAPA) have expressed an interest in improving the evaluation of PE interventions.

Objectives:

- ▶ Document the nature (and process) of a participatory ergonomics intervention involving consultants, workplace individuals and researchers.
- ▶ Determine what data can be collected to characterize the workplace, establish pre-post comparisons, document the process of a participatory intervention, and track the most important and feasible indicators of MSK burden.
- ▶ Determine how best to provide feedback on intervention characteristics.

Research Lead: Dwayne van Eerd

Evaluation of the Impact of a Participatory Ergonomics Intervention (CAW/OHCOW) (238)

Project Status: Ongoing

Introduction: This project will monitor the effect of establishing a participative ergonomics (PE) change team within a Canadian Auto Workers (CAW) organized work site. A PE intervention will involve workplace parties jointly assessing and taking action on musculoskeletal hazards. The project will monitor the CAW and Occupational Health Clinics for Ontario Workers (OHCOW) ergonomists' activities, document the workplace's response, track implementation, assess effectiveness, and estimate any cost savings associated with participatory ergonomics.

Objectives:

- ▶ To determine the nature of the relationships among ergonomists, union leadership, company management, and the research team engaged in a 'participatory ergonomics' intervention evaluation.
- ▶ To determine what data can feasibly be gathered by each of the participating parties to: 1) contrast pre- and post-measures of attitudes, hazards, and health status among those involved in the intervention; 2) document the activities of each of the parties; 3) track existing or new indicators that represent important measures of MSK burden, quality, and productivity; and 4) characterize the workplace as a setting.

Research Lead: S Naqvi, Occupational Health Clinics for Ontario Workers; Donald Cole (IWH)

Evaluation of Sustainability of Ergonomic Interventions (242)

Project Status: Ongoing

Introduction: The evidence for the effectiveness of workplace interventions for reduction of work-related musculoskeletal disorders (WMSD) burden in workplaces remains inconclusive. A recent systematic review conducted at IWH found that inspector orders and enforcement could reduce injuries. One randomized controlled trial of a brief inspector-led ergonomic intervention has been conducted in Australia but its generalizability to other jurisdictions and its impact on subsequent incidence of WMSD and lost time costs remains unevaluated. The Quebec Health and Safety Council (CSST) has asked the Institute for Research on Safety & Health at Work (IRSST) to evaluate the impact of their inspector led response to new cases of WMSD or to poor WMSD incidence profiles based on workers' compensation lost time data. IWH has been asked to cooperate in the research to promote sharing of experiences with workplace intervention evaluations for WMSD.

Objectives:

- ▶ Conduct follow-up of the implementation of workplace interventions ordered by CSST inspectors and carried out by a range of public and private sector interveners.
- ▶ Measure the effects of interventions on worker exposure to risk factors for WMSD within a subset of companies.
- ▶ Evaluate the impact of the interventions on compensable WMSD claims by company.

Research Lead: Donald Cole

Exploring Organizational Factors and Safety Climate in the Implementation of an Ergonomic Intervention (229)

Project Status: Ongoing (Evolving into project 233)

Introduction: Musculoskeletal (MSK) disorders are a leading cause of pain and disability among workers in a variety of industries. Ergonomic programs often focus on content factors as well as the structure of the interventions but fail to consider process factors such as employee participation, leadership commitment, and organizational safety climate. The Electrical and Utilities Safety Association (EUSA) is launching a pilot program aimed at introducing effective and sustainable MSK disorder prevention programs. This research will development instruments addressing process factors and safety climate for use in the evaluation of this new prevention program.

Objectives:

- ▶ Review the currently available measures and instruments for the evaluation of process factors that are applicable to ergonomic intervention programs.
- ▶ Develop instruments that evaluate process factors specific to the EUSA program.
- ▶ Incorporate the modified/developed instrument within the data collection protocol developed for the program evaluation.
- ▶ Conduct data analysis to determine reliability of the scales and to explore the relationship of these variables to program outcome variables.

Research Lead: Philip Bigelow

Evaluation of a HSA-initiated Collaborative Partnership to Implement Participatory Ergonomic Programs (233)

Project Status: Ongoing

Introduction: MSDs and musculoskeletal pain are major problems for the electrical and utilities sector and traditional prevention techniques have not led to long term solutions. Participatory approaches have been shown to be more effective but have not been widely adopted. The Electrical & Utilities Safety Association (E&USA) is partnering with the IWH, CRE-MSD and eight firms to implement and evaluate best-practice participatory ergonomic (PE) programs. This research will evaluate this unique partnership approach to the implementation of sustainable PE programs in the sector. Findings from this research will help Health and Safety Associations (HSAs) improve the effectiveness of their MSD prevention efforts.

Objectives:

- ▶ Develop an understanding of facilitators and barriers to PE program implementation,
- ▶ Conduct a comprehensive evaluation of PE program effectiveness, and
- ▶ Assess the quality of relationships built among partners resulting from their participation in the PE intervention.

Research Lead: Philip Bigelow

Exploration of the Feasibility of Participative Interventions to Reduce MSD in the Construction Sector (262)

Project Status: Ongoing

Introduction: This study will focus on the potential for developing participatory interventions to reduce the burden of work-related musculoskeletal disorders (WMSDs) in smaller firms within the construction sector. It will explore what decision-makers in the construction sector believe are the barriers and facilitators to adopting research and evidence-based best practices in ergonomics. In particular, it will explore how construction firms and workers could improve the use of research knowledge if they were co-producers of the knowledge, and were the ones to identify the salient questions and ways to address ergonomic problems.

Objectives:

- ▶ Gain an understanding of the feasibility of small construction companies adopting ergonomics.
- ▶ Identify a particular sub-sector for which participatory ergonomics is an approach with a high probability of success.
- ▶ Exchange information about ergonomic interventions and the needs of the sector in terms of MSD reduction.
- ▶ Develop sustainable relationships with stakeholders.

Research Lead: Philip Bigelow

Evaluation and Sustainability of Ergonomic Interventions (228)

Project Status: Ongoing

Introduction: Ergonomic programs are being introduced and recommended as a prevention strategy for musculoskeletal disorders. The purpose of this project is to increase our understanding of the benefits of workplace participatory ergonomic intervention prevention programs for work-related musculoskeletal disorders. We have recruited four sets of matched lines/plants from our previous studies. In each intervention plant we formed and facilitated a participatory ergonomics team over a period of 10-20 months. We have arranged to continue monitoring these locations. We have a wide range of measures including questionnaires and, in the intervention plants, observations, video analysis, interviews and field notes. Organizations need evaluation tools and ways of sustaining such ergonomic programs. Through our earlier work, we have developed a framework and measures for assessing the process and outcomes of the intervention. The proposed next phase of the research program will continue the monitoring the workplace after we withdraw from facilitating the team, thus assessing the sustainability of the ergonomic change team and its activities.

Objectives:

- ▶ To develop health and financial performance evaluation approaches for lagging indicators.
- ▶ To assess the sustainability of the participatory ergonomics programs.

Research Lead: Emile Tompa

Systematic Review of Computer-related Office Interventions to Improve Musculoskeletal and Visual Health (970)

Project Status: Completed

Introduction: This review addresses the question of whether office interventions among computer-users affect musculoskeletal and visual health status. Researchers define computer-mediated office work as the non-manufacturing and non-manual handling of work, where computers are used for information storage, management, analysis or communication. Traditional office environments that rely on desktop or laptop computers to process information are of primary interest. Safety interventions may include engineering controls, administrative controls or the use of personal protective equipment. The health outcome measures are musculoskeletal and visual symptoms, and musculoskeletal and visual clinical diagnoses. One of the objectives for the literature review on this topic is to advance the field's thinking about intervention research.

Objectives:

- ▶ Provide a comprehensive summary of the effectiveness of computer-related office interventions to improve musculoskeletal and visual health by systematically reviewing the quantitative literature.
- ▶ Assess the methodological strengths and weakness of the existing quantitative studies, and to provide recommendations to guide future research initiatives.

Methods: Literature review and consultation with OH&S stakeholders.

Results: From an initial pool of more than 7,000 articles, we identified 28 that met our methods and relevance criteria for inclusion.

Across all included studies, the results suggest a mixed level of evidence for the effect of ergonomic interventions on either MSK outcomes or visual symptoms. This means we found medium to high quality studies with inconsistent findings on the effects of the interventions on MSK or visual outcomes. The finding of mixed evidence may be due to the heterogeneity of intervention types grouped together across the studies reviewed. Importantly, we found no evidence that any office ergonomic intervention had a negative or deleterious effect on musculoskeletal or visual health. Furthermore, our conclusions do not change when we consider only high quality studies.

We found no strong evidence that any specific office ergonomic intervention categories had positive effects on either musculoskeletal or visual health. However there is considerable heterogeneity among interventions that are described with similar terms such as “workstation adjustment” and “office equipment”. In addition, the varied MSK outcomes and visual outcomes need to be comparable before strong conclusions can be stated about effects.

A moderate level of evidence was found for three intervention categories:

- There was moderate evidence that workstation adjustments as implemented in the studies reviewed had NO effect on MSK or visual outcomes.
- There was moderate evidence that rest breaks together with exercise during the breaks had NO effect on MSK outcomes.
- There is moderate evidence that alternative pointing devices have a POSITIVE effect on MSK outcomes.

It should be noted the workstation interventions were usually compared to ergonomic training. The results should not discourage researchers and practitioners from continuing to develop different workstation adjustments or rest break patterns combined with exercises. However, care should be taken in making any generalizations about the role for either workstation adjustments alone or rest breaks plus exercises in improving musculoskeletal or visual health.

While moderate evidence exists for alternative pointing devices improving MSK outcomes, the evidence is aggregated across studies examining quite different pointing devices (an alternative mouse and a trackball). This suggests that care should be taken in making recommendations about specific alternative pointing devices to improve musculoskeletal health.

Relatively few studies evaluated a single specific ergonomic intervention. We also encountered a diversity of office ergonomic interventions and MSK and visual endpoints, as well as a wide range of workplaces and geographical locations where the interventions were implemented. Thus the review team concluded there was a mixed level of evidence (moderate and high quality studies with inconsistent findings) for a range of commonly discussed interventions:

- There was mixed evidence that ergonomics training, arm supports, alternative keyboards and rest breaks have an effect on MSK outcomes.
- There was mixed evidence that screen filters have an effect on visual outcomes.

Finally, many office ergonomic interventions involve a unique combination of interventions (e.g. lighting, workstation adjustment, VDT glasses) or a unique intervention (e.g. new chair). Such single studies provide an insufficient level of evidence for us to make general assertions about intervention effectiveness, regardless of the quality of the studies:

- There was insufficient evidence to determine an effect on MSK outcomes for any of the following interventions: exercise training; stress management training; ergonomics training together with workstation adjustment; a new chair; lighting change plus workstation adjustment plus VDT glasses; a new office; lens type and VDT glasses.
- There was insufficient evidence to determine an effect on visual outcomes for any of the following interventions: ergonomics training; rest breaks; lighting change plus workstation adjustment plus VDT glasses; lens type; VDT glasses; herbal eye drops; and OptiZen™ eye drops.

Many interventions could provide fertile ground for additional high quality studies. However, researchers, funders, employers and organized labour should attend to the effects and study quality as one way to gauge level of interest and investment in further research. Clearly high quality studies are necessary to achieve the strong level of evidence we desire for these interventions.

Researchers: Dwayne Van Eerd, (Institute Coordinator), Emma Irvin, Kim Cullen, B Amick, S Brewer (University of Texas), K Daum (University of Alabama – Birmingham), F Gerr (University of Iowa), S Moore (Texas A&M University System Health Science Center), D Rempel (University of California – San Francisco)

Publications:

Van Eerd D, Brewer S, Amick B, Irvin E, Daum K, Gerr F, Moore S, Cullen K, Rempel D. Workplace interventions to prevent musculoskeletal and visual symptoms and disorders among computer users: A systematic review. Toronto: Institute for Work & Health, 2006

Brewer S, Van Eerd D, Amick B, Irvin E, Daum K, Gerr F, Moore S, Cullen K, Rempel D. Workplace interventions to prevent musculoskeletal and visual symptoms and disorders among computer users: A systematic review. Submitted: American Journal of Industrial Medicine

Presentations:

Cullen KL, Van Eerd D, Rivilis I, Cole DC, Irvin E, Tyson J, Mahood Q. Effectiveness of participatory ergonomics interventions: A systematic review. 30 Sept – 2 Oct 2005; Ottawa, ON: Canadian Kinesiology Alliance Annual Conference

Publications:

Brewer S, Van Eerd D, Amick B, Irvin E, Daum K, Gerr F, Moore S, Cullen K, Rempel D. Workplace interventions to prevent musculoskeletal and visual symptoms and disorders among computer users: a systematic review. Submitted: Am J Ind Med

External Funding: WSIB – Pilot Funding: Prevention Systematic Reviews: \$345,000 annually; 2004-2007

Summary Report can be found at: <http://www.iwh.on.ca/research/sr-wie.php>

Review of Occupational Health and Safety Audits (955)

Project Status: Completed

Introduction: Occupational health and safety (OHS) auditing is a systematic process for assessing compliance and verifying various aspects of occupational health and safety system performance. The growth in the number of management system standards that incorporate health and safety aspects of production have facilitated widespread development and use of OHS audits. Despite their widespread and expanding use in Canada and internationally, there have been no substantive reviews of the literature supporting their use. This review will provide a synthesis of the literature on the reliability and validity of audit instruments.

Objectives:

- ▶ Critically evaluate the research evidence for the reliability and validity of OHS management audit tools.
- ▶ Critically evaluate the research evidence for the reliability and validity of OHS hazard audit tools.

Methods: Literature review and consultation with OH&S stakeholders.

Results: We found very little literature that examined the reliability and validity of audits. Among the literature discussed here, few had the primary intent to specifically look at the measurement properties of the instruments. Being a narrative review, we did not set out to systematically assess the methodological quality of the literature. However, it can be stated that the quality was not strong. The highest quality work appeared to be associated with graduate theses. This paucity of literature might result from the literature search not being exhaustive. However, other researchers have had similar experiences. In 1988, Eisner and Leger remarked that, “A thorough search of the scientific literature on occupational safety and health failed to discover any publication evaluating the [ISR] scheme” by academic authorities (p. 143). Dyjack and Levine (1996) said, “We have been unable to identify published studies evaluating the accuracy and repeatability of either publicly or

privately held occupational health and safety assessment instruments.” Two years later, the same research group had a similar statement about audit reliability when their paper on the subject was published (Dyjack et al., 1998, p. 790).

Certainly there are obstacles to conducting validity studies that compare audit scores against a criterion like injury rate. Resource availability is one challenge, since audits often require several days on site. Availability and comparability of criterion data across work sites can sometimes be an issue, especially for the high-hazard processes and high reliability organizations. There are likely fewer obstacles to conducting studies of other measurement properties, such as content validity, inter-rater reliability and responsiveness.

The review found some reports of audit tools demonstrating their content validity. Other reports were surprisingly lacking in this information, even when the audit tool was their focus. It seems that this issue is not well appreciated in some circles. Perhaps the literature from other fields could offer some guidance (e.g. Ware, 1987).

Interrater reliability was studied in the literature concerned with OHS management audits. Agreement among raters was often surprisingly low. Interrater reliability was studied in only a preliminary manner in the literature concerned with audits of high-hazard processes and high reliability organizations. It raises the question of whether this concept is little known among experts studying these types of organizations. None of the reviewed articles in either stream of literature considered test-retest reliability.

Audit instrument responsiveness to changes in the OHS program was never studied directly, but some studies provided data that allowed the calculation of effect sizes, which ranged from medium to medium-large (Cohen, 1977).

Construct validity was demonstrated in a couple of studies through a comparison or correlation of audit scores and outcome criteria like injury rates. In others, consistent with prediction, audit scores were shown to increase in response to an OHS intervention. There is room for further attempts at construct validation in the literature. The relationship between audit scores and other measures of organizational OHS performance (e.g. safety climate) could be investigated. Given the common use of audit instruments, there is ample room in the literature for more information about their measurement properties.

Practical Implications of Review Findings

In the case of OHS management system—based audits, the findings raise questions about instruments in common use. It appears that a good deal of effort goes into developing the content for many of the audit tools reviewed. Unfortunately, a lot of this effort is not documented well, so content validity often remains uncertain. It would be helpful if authors went into more detail about the conceptual models and definitions that guided their work, as well as the process used to draw upon expert opinion.

Given the available findings, it is conceivable that some of the audit instruments in common use have low inter-rater reliability. This is not a large concern when instruments are used to make a baseline assessment or initial diagnosis of an organization. It is a concern, however, when audits are used to determine whether an organization has met a particular standard, since it could result in the inappropriate withholding or awarding of an accreditation. Low reliability would also be a concern when audits are used to monitor an organization on an ongoing basis, especially since they

are carried out infrequently. Poor agreement between the auditors used over time could generate a false picture of the progress being made in an organization.

There has been little study of audit results in conjunction with outcome criteria. A database with both quantitative audit scores and OHS outcomes would provide the basis for the weighting used in scoring different sections of a quantitative audit instrument.

Researchers: Philip Bigelow, Lynda Robson (Co-Principal Investigators), Emma Irvin

Stakeholder Involvement: An initial survey of stakeholders pertaining to their priorities for systematic review topics was performed and audits were one of those put forward. No other involvement of stakeholders has taken place.

Publications:

Bigelow P, Robson L. Occupational health and safety management audit instruments: A literature review. Toronto, Institute for Work & Health, 2005. (Project 955: SR: Audit Tools)

External Funding: WSIB – Pilot Funding: Prevention Systematic Reviews: \$345,000 annually; 2004-2007

Summary Report can be found at: <http://www.iwh.on.ca/research/sr-wie.php>

Systematic Review: Effectiveness of Education and Training Strategies for the Protection of Workers (975)

Project Status: Ongoing

Introduction: There is considerable interest in the effectiveness of training (and certification) as a generic prevention strategy for workers of all ages, including youth. Participants also distinguished between intermediate outcomes in domains of knowledge and attitudes, and final outcomes in domains of practices and prevention. There is a need to observe contextual issues surrounding training strategies. For example, jurisdictions with active safety enforcement cultures may value training differently to jurisdictions that neglect safety enforcement. This review is being undertaken in collaboration with research colleagues at NIOSH.

Objectives:

- ▶ Provide a comprehensive summary of the effectiveness of education and training strategies for the protection of workers by systematically reviewing the quantitative literature.
- ▶ Assess the methodological strengths and weakness of the existing quantitative studies, and to provide recommendations to guide future research initiatives.

Research Lead: Lynda Robson

Manager Commitment in New Economy Organizations (222)

Project Status: Ongoing

Introduction: This study explores how the inherent flexibility of current occupational health and safety policy functions in the context of ‘new economy’ work organizations, which are also very flexible. Work organizations are increasingly fluid with downsizing, out-sourcing, joint ventures, and alliances and with tenuous, insecure labour relations. How do these organizations actually implement health and safety systems when their own organizational structures are precarious? How do current occupational health policy and laws function in this context? Through this qualitative research will explore the meaning of managerial ‘commitment’ in workplaces, and examine how decision-makers in new economy workplaces form and implement health and safety systems.

Objectives:

- ▶ Gain a grounded understanding of manager ‘commitment’ to occupational health and safety when workplaces themselves are changing and unstable.
- ▶ Examine how managers in such changing environments make decisions about occupational health and safety.
- ▶ Examine how health and safety policy is implemented in new economy workplaces.
- ▶ Explore characteristics of new economy workplaces.

Research Lead: Ellen MacEachen

Evaluating the Effect of Transformational Leadership on MSK Disorders and Minor Injuries in the Service Sector (275)

Project Status: Ongoing

Introduction: Transformational leadership has been the dominant relationship theory examined in the past decade. Data have demonstrated a relationship between leaders who engage in these behaviours and both the attitudes and performance of subordinates. In recent years the impact of transformational leadership on physical safety (using health related outcomes, such as minor injuries) of subordinates has been examined with encouraging results. The impact of this leadership approach on musculoskeletal disorders (MSD) has not yet been examined.

Objectives:

- ▶ Examine the relationship between transformational leadership behaviours, and safety behaviours, injuries, and MSDs in subordinates.
- ▶ Determine the most important measures and most feasible instruments to characterize the workplace, to document the process of a transformational leadership intervention, and to track MSD burden.

Research Lead: Donald Cole

The Logic of Practice: An Ethnographic Study of WSIB Front-line Service Work with Small Businesses (227)

Project Status: Ongoing

Introduction: Front-line WSIB staff play a critical role in the execution and outcomes of institutional policies, strategies and programs. Yet, there is remarkably little scientific understanding of this key junction of the occupational health and safety (OHS) system: the interface between the administrative apparatus and the users/clients. This junction is particularly significant in relation to small workplaces which engage directly with front-line service providers and have few other intermediaries between themselves and the WSIB.

Objectives:

- ▶ Generate an empirically based understanding of how front-line WSIB staff working in the small business sector actually conceive and accomplish their work.
- ▶ Draw out the implication of their practices for the OHS system, workers and employers.
- ▶ Describe and explain, from a sociological perspective, the work of three groups of service workers: claims adjudicators, customer service representatives, and nurse case managers.

Research Lead: Joan Eakin (University of Toronto), Ellen MacEachen

Are Non-Profit Organizations Healthy Workplaces? Working Conditions and Occupational Health and Safety of Paid Employees and Volunteers (219)

Project Status: Completed

Introduction: The non-profit sector (NPS) includes 7.5 million volunteers and employs over 1.6 million Canadians. In spite of this, little is known about workers, organizations and working conditions in the NPS. Provincial and federal governments, aiming to contain spending and reduce deficits, have shifted the delivery of many social services to the NPS. In part, this transfer entails governments establishing contracts with nonprofit organizations (NPOs) for the provision of social and health services. Work once done by unionized civil servants is devolved to a sector that mostly uses low paid, non-unionized or free labour. Service contracts with public agencies and other short term grants have largely replaced long term 'core' funding. Non-profit organizations face increasing competition, accountability and reporting requirements as a result of changes in the structure of funding.

These changes may have considerable consequences on working conditions in NPOs, as well as on the health of volunteers and employees. Although most NPOs employ paid staff and volunteers they are rarely viewed as workplaces by researchers and policy makers. There is a lack of research on the occupational health and safety (OHS) issues affecting the NPS. Given increased workloads and financial pressures, are organizations able to provide safe and healthy work environments?

Objectives:

- ▶ Examine psycho-social and physical working conditions in non-profit social service organizations.

Methods: Direct observation and interviews.

Results: The study characterizes the workplace studied and some of the visible and hidden hazards in these. The focus is on how workplace missions of client-centredness, "going beyond the call of duty" and personal treatment facilitate smooth organizational functioning and the government of workers. Missions have both protective and harmful effects on workers. They are an important source of intrinsic reward yet they are implicated in the discounting of workplace risks. Workers often engage in potentially risky activities for the sake of their clients and in order to be considered a "good employee".

The final chapter is still being written but will examine how traditional OH&S programs may not be appropriate in these workplaces and what sort approaches should be taken.

Researchers: Iggy Kosny (PhD Candidate), Joan Eakin, L Holness (St. Michael's Hospital), S Hwang (St. Michael's Hospital)

Stakeholder Involvement: Workplaces (non-profit organizations) and researchers.

External Funding:

Kosny I, Eakin J, Holness L, Hwang S. Are non-profit organizations healthy workplaces. National Network on Environments and Women's Health: \$29,925; 2004 - 2005.

Systematic Review of Studies that Undertake Economic Evaluation of Workplace Interventions Directed at Primary and Secondary Prevention (960)

Project Status: Ongoing

Introduction: This study is a systematic review of studies that undertake economic evaluations of workplace-based interventions directed at primary and secondary prevention of injury, illness, and disability. Primary prevention studies to be considered are those that are directed at reducing the probability of work-related injuries and illness. Secondary prevention studies to be considered are those that are directed at reducing the impact of injury and illness (not exclusively work-related) on work disability through various work-place based return-to-work policies, programs and practices. Not included would be workplace-based interventions directed at improving the general health of workers, e.g., some health promotion programs. Some interventions (e.g., ergonomics interventions) may be focused on improving productivity, quality, or other firm objectives. These will be included only if there is a primary or secondary prevention outcome included in the quantification of consequences.

Objectives:

- ▶ The first paper from this research will be an environmental scan of economic evaluations of workplace-based interventions for the prevention of MSK disorders for a special edition issue of an occupational health and safety journal.
- ▶ The primary product will be a report that synthesizes the evidence on the economic evaluation of workplace-based interventions directed at primary and secondary prevention of injury, illness, and disability.
- ▶ A third paper from this study will be a methodological paper that will review the state of the art of economic evaluation in the intervention literature.

Methods: SR to unfold in stages: 1) Feasibility, 2) Pilot, 3) Full systematic review and consultation with OH&S stakeholders in 2006.

Results: The feasibility and pilot stages of this project were completed in 2005. Focus was on methods and quality of economic analyses in OHS interventions focused on MSK in office settings. We found mixed quality of economic analyses. Ten methodological issues are identified with a focus on providing recommendations to assist researchers in taking the application of methods further in this arena. As a consequence of this work we will undertake a full systematic review of this literature in 2006. The results of the initial work will feed into an international Economic Evaluation Methods Workshop which will be hosted by the Institute in spring 2006.

Researchers: Emile Tompa (Institute Coordinator), Claire De Oliveria, Lynda Robson, Emma Irvin, Roman Dolinski

Stakeholder Involvement: Early in the development of this systematic review we will convene a meeting/consultation of stakeholders consisting of representatives from the Workplace Safety & Insurance Board, the Occupational Health and Safety Branch of the Ministry of Labour, and some of the Health and Safety Associations. The objective of the meeting will be to refine the purpose and scope of the systematic review as well as get feedback from stakeholders on some of the methodological issues such as the search strategy, quality assessment, and synthesis criteria.

Presentations:

Tompa E, Dolinschi R, de Oliveira C. Practice and potential of economic evaluation of workplace-based interventions for occupational health and safety. 23 Sept 2005; Annapolis Maryland: International Workshop on Workplace-based Office Interventions for Primary and Secondary Upper Extremities Disorders.

Publications:

Tompa E, Dolinschi R, de Oliveira C. Practice and potential of economic evaluation of workplace-based interventions for occupational health and safety. Special issue of AJIM. [IWH WP #311]

External Funding: WSIB – Pilot Funding: Prevention Systematic Reviews: \$345,000 annually; 2004-2007

Methodologies for the Economic Evaluation of Workplace Interventions (218)

Project Status: Ongoing

Introduction: Workplace parties have expressed ongoing interest in the ‘business case’ for workplace interventions to reduce the burden of injury and illness. In addition, policy makers have solicited literature reviews and sought a greater emphasis on economic evaluation. The focus of this project in 2005 will be to develop a coherent framework and enhanced methods for economic evaluation of workplace interventions for health and safety. An environmental scan/methods paper will be undertaken through work on project #228 (Evaluation and Sustainability of Ergonomic Interventions). This project will be used to develop capacity through internal and external team building with plans to hold an international workshop on methods and application of economic evaluation as applied to workplace interventions.

Objectives:

- ▶ Develop team of researchers internally who are interested in advancing methods of economic evaluation of workplace interventions.
- ▶ Identify external collaborations for economic evaluation initiatives.
- ▶ Plan an international workshop and methods and application of methods.

Research Lead: Emile Tompa

KTE in Workplace Studies

Project Title: Evidence-based prevention messages for workplace parties

Introduction: The main audiences for the evidence from the workplace studies program are workplace parties (employers and workers), organized labour, consultants working for the health and safety associations, ergonomists and kinesiologists. The KTE focus in 2005 was engaging these parties in the research process and systematic prevention reviews and disseminating the evidence from these reviews.

Objectives:

- ▶ To incorporate stakeholder and audience input early in the research and systematic review process.
- ▶ To disseminate the evidence from the systematic reviews to workplace audiences.

Messages:

Completed (2004) Systematic Reviews

Participatory Ergonomics Systematic Review

A participatory ergonomic interventions in workplaces is one means of preventing MSDS among Canadian workers.

The Effectiveness of Occupational Health and Safety Management Systems (OHSMs) Systematic Review

Even though both voluntary and mandatory OHSMs appear to have positive effects in workplaces, the evidence is not strong enough to make recommendations either in favour or against OHSMs.

Audiences: WSIB (prevention division), Workplace parties (employers and workers) organized labour, HSAs, ergonomists, kinesiologists

Summary of Accomplishments

Engaging the Stakeholders:

- ▶ Stakeholders were engaged early in the 2005 prevention reviews to refine the review questions.
- ▶ Meeting with the Kinesiology Educational Influentials (EIs) to review findings from the *Workplace Interventions to Prevent Musculoskeletal and Visual Symptoms and Disorders Among Computer Users*.
- ▶ A number of HSAs (EUSA, OSSA, THSA) have become research partners with workplace studies group and CRE-MSD researchers.

Keeping Audiences Informed:

For each systematic review a general audience (GA) summary has been created and posted on the IWH Website (<http://www.iwh.on.ca/research/sr-wie.php>)

- *The Effectiveness of Occupational Health and Safety Management Systems: A Systematic Review*
- *Occupational Health and Safety Management Audit Instruments: A Literature Review*

Workplace Interventions & Evaluations

- *Effectiveness of Participatory Ergonomic Interventions: A Systematic Review*
- *Workplace Interventions to Prevent Musculoskeletal and Visual Symptoms and Disorders Among Computer Users: A Systematic Review*

Also sent to the Canadian Centre for Occupational Health and Safety (CCOHS)

GA summary sent to 100 key audiences from President and Chief Scientist.

GA summary sent by e-mail to targeted stakeholder list (700)

Results of systematic reviews presented and discussed at HSA Liaison Committee (HSA consultants).

Articles appeared in At Work

Team: Jane Brenneman Gibson, Dee Kramer, Kathy Knowles Chapeskie, Kiera Keown, Rhoda Reardon

Health Services Research

The Health Services Research Group uses qualitative and quantitative methods to create and synthesize evidence on the course and management of the more burdensome work-relevant health conditions (including soft tissue injury, chronic pain and depression). Their research seeks ways of reducing the burden that these conditions poses on individual workers, employers, insurers and society. The research is made useful through an exchange with relevant audiences including clinicians, employers, workers, insurers, policy-makers and the general public which enables both evidence-based decision-making and a program of research that is informed by 'real world' experience.

The program includes four themes: Measurement of Health and Function; the Epidemiology of Disability; Evidence-based Practice; and Prevention of Work Disability.

Measurement of Health and Function

Studying the etiology, burden, likely course and treatment of a musculoskeletal disorder presents substantial challenges of measurement. The pathology of a musculoskeletal disorder, whether a structural lesion or an inflammatory mechanism, is frequently difficult to diagnose. Conceptual frameworks for the classification of the disorder lack consistency. Finally, the measurement of pain and functional limitation arising from these disorders requires imaginative and innovative approaches to assessment. Over the past 15 years the Institute for Work & Health has continued to make original contributions to both the conceptualization of musculoskeletal disorders and the measurement of functional deficit.

In 2004, IWH researchers participated in an international invitational symposium at the Prevention of Work-related Musculoskeletal Disorders Conference (PREMUS) on classification systems for musculoskeletal disorders. The symposium led to the establishment of an international collaboration, including IWH researchers, who will be developing a database of all current MSD classifications systems starting with upper extremity disorders. The ultimate goal of this initiative is for researchers and clinicians to come to agreement on a single classification system which would facilitate more accurate communication on the prevalence on different MSD disorders and on appropriate and effective treatment interventions. This group will be reconvening in June 2006 to discuss progress to date.

A focus in 2005 in this theme is a series of linked research initiatives which are aimed at improving our ability to measure the impact of an injury or illness on work productivity through self reported instruments. Building on research already underway in a WSIB funded upper extremity clinic IWH scientists have recently received funding support through the Canadian Arthritis Network to investigate a series of measures of work disability. Their research on measuring the impact of health status limitation has caught the attention of international researchers interested in measuring important constructs in clinical trials. Like others with musculoskeletal disorders, individuals with arthritis periodically miss days off work, but they may also be less productive while at work. This research will compare new approaches to measuring self-reported “decreased productivity at work”. The results will provide guidance on which measure is best suited to quantify work disability in those with arthritis and to help plan workplace interventions. Work in this area is most relevant to the *Occupational Diseases, Injury and Health Services Research* priority.

Project Titles:

Measurement Methodology Studies (925).....	76
Development and Testing of the DASH Outcome Measure - DASH Instrument (425).....	76
How Are You Now? Testing a Model of Recovery from the Patient’s Perspective One Year After a Traumatic Fracture of an Extremity (115)	77
The Measurement of Work Disability/Disability at Work (117/910).....	78
Disability While at Work: Measuring the Progression of At-Work Disability and Workplace Productivity Loss (121).....	78
Validation of a Classification System for Work-Related Disorders of the Shoulder and Elbow (124).....	79

Measurement Methodology Studies (925)

Project Status: Ongoing

Introduction: This is a group of studies/projects which focus on measurement issues rather than answering an applied research question. Studies include investigating best methods for using a given questionnaire; the application of item response theory to improve the calibration of an instrument; the application of cluster analysis to longitudinal data; meaning and measurement of responsiveness and other measurement properties (reliability, validity); the integration of e-health and technology into measurement. There is overlap with other projects within this theme (described in greater detail subsequently) as data gathered from other studies is often used in measurement methodology work.

Research Lead: Dorcas Beaton

Development and Testing of the DASH Outcome Measure - DASH Instrument (425)

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 created and placed on the Web, and a summary article written in *At Work*. 2004 saw specific testing of the QuickDASH in clinical and research settings. The DASH User's Manual, first published in 1999, was developed to be an all encompassing guide to the DASH outcome measure and contained documentation on how to use the DASH. The DASH outcome is a widely accepted measure, and its measurement properties are standing up when tested by other investigators literally around the world. Reviews of outcome measures continue to agree that the DASH is amongst the most thoroughly tested and supported measures in the field of upper limb research.

Research Lead: Dorcas Beaton

How Are You Now? Testing a Model of Recovery from the Patient's Perspective One Year After a Traumatic Fracture of an Extremity (115)

Project Status: Ongoing

Introduction: This project tests a model of recovery from a patient's perspective in working-aged patients one to two years after a fracture that required operative fixation. The model includes functional status and change in health state which are indicators of being better. It also includes indicators of adaptations or shifts in personal values and goals which can lead a patient to say they are better when they may still have residual effects of the disorder. Approximately 250 patients were recruited from St. Michael's Hospital and Sunnybrook and Women's Health Sciences Centre.

Objectives:

- ▶ Test a model of recovery from a patient's perspective.
- ▶ To describe the prevalence of resolution of symptoms, adaptation, or redefinition in people who say they are better.
- ▶ To test factors felt to be associated with outcome (SES, gender, age, baseline severity, expectations, satisfaction).

Methods: This project is a cross sectional study of persons 1-2 years after an operatively managed fracture of the extremity. Several measures of function, pain, sociodemographics, and recovery were fielded. Analysis of the factors associated with self-reported recovery were evaluated with various approaches. (A detailed protocol is available)

Results: Patients and their physicians did not agree with their perceptions of recovery 2-3 years after an operatively managed fracture. Indeed 20% discordance was observed in each direction. Path analysis supported our apriori model that there are multiple pathways to recovery. Some new measures of adaptation and redefinition of meaning of health and goals were helpful in demonstrating the different paths. Research might be aided by including alternate pathways to self-perceived recovery.

Researchers: Dorcas Beaton (Principal Investigator), Claire Bombardier, Renée-Louise Franche, Selahadin Ibrahim, Rhoda Reardon, M Gignac (ACREU), E Schemitsch (St. Michael's Hospital), G Devins (Sunnybrook & Women's Health Sciences Centre), A Davis (Toronto Rehabilitation Centre), H Cruder (University Health Network)

Presentations:

Beaton DE. Are you better and how are you now? July 2005; Toronto, ON: Clinical Epidemiology Rounds, Hospital for Sick Children.

The Measurement of Work Disability/Disability at Work (117/910)

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. In this set of projects we will identify new measurement properties, factors associated with work disability, and also create links between clinical, community and workplace populations as well as between different local, national and international networks of researchers interested in the measurement of work disability.

Objectives:

- ▶ Understand the development, use and measurement properties of currently existing measures of work disability and work productivity.
- ▶ Conduct a concurrent comparison of different measures of at-work disability.
- ▶ Provide leadership to two research transfer initiatives: OMERACT workshop and CAN-IWH Strategic Service Resource (SSR) initiative.
- ▶ Make recommendations for the role of self-report measures of work disability in workplace studies at IWH and in the broader community.

Researchers: Dorcas Beaton and Claire Bombardier

Disability While at Work: Measuring the Progression of At-Work Disability and Workplace Productivity Loss (121)

Project Status: Ongoing

Introduction: This study is a longitudinal cohort study of 240 persons with arthritis recruited for the initial work disability in arthritis study (117). The study also follows a group of persons with arthritis who are a community based sample rather than a clinic based one.

Research Lead: Dorcas Beaton

Validation of a Classification System for Work-Related Disorders of the Shoulder and Elbow (124)

Project Status: Ongoing

Introduction: Work-related musculoskeletal disorders of the shoulder and elbow are common, costly and complicated disorders. The WSIB has established a specialty clinic where experts assess workers with these disorders to determine the worker's likely course and optimal care. A classification system would help with this task if it could predict those workers likely to have a good or bad outcome. We have now developed a classification system which subdivides clinic attendees into four subgroups. The purpose of our present study is to test how well the classification system works, by reproducing it in a different group of workers and seeing if it will predict outcomes two to three years after initial clinic visit. A computer system will be set up so the patient data, in the form of a summary report and prognostic sub group classification, will be immediately available to clinicians for their assessment.

Objectives:

- ▶ To compare numbers, costs, and duration of lost time for workers who attended the Shoulder & Elbow (S&E) Clinic between January 1st and December 31st 2001 with all comparable workers in Ontario with a lost time claim.
- ▶ To describe the long-term (two to three year) outcomes of workers who attended the Clinic in the year 2001. To assess the ability of the subgroups to predict these outcomes.
- ▶ To assess the robustness of the classification system by repeating the analysis using identical data gathered from a prospective cohort of workers attending the Clinic in 2003.
- ▶ To revise the methods used for routine data collection in the S&E Clinic in order to allow the team access to information used to classify workers prior to their assessment.

Methods: This project file represents two funded projects: 1) Validation of a classification system for shoulder and elbow disorders (WISB RAC funded, 2002)(IWH Project 124) looking at the workers attending one specialty clinic for shoulder and elbow disorders and examining their administrative data, burden, and return to work status. We also followed 188 people up 2-3 years after clinic attendance. 2) Managing the Tail of the Curve (WSIB RAC funded 2005) (IWH project # 113). In spring of 2005 we received additional funding to initiate a one year cohort study on new referrals to either the Toronto Shoulder and Elbow Clinic, or the London upper extremity specialty clinic. We are moving to a secure, web-based data collection system and touch screen technology.

Results: The workers attending the clinic are experiencing significantly more time off and costs compared to similar claimants across the province. We developed a classification system which predicted return to work success in the time after clinic, and might be useful for identifying those in need of more intervention. We also developed a method to have a summary of the questionnaire automatically, and instantaneously printed from a computer using scanning technology and some programming. This means that the prognostic information is in the hands of the clinicians at the time of assessment. Now we are moving forward to a prospective cohort to test the findings in a better study design, and to expand our data collection across two specialty clinics (project 113).

Researchers: Dorcas Beaton (Principal Investigator), Sheilah Hogg-Johnson, Anusha Raj, A Valente (St. Michael's Hospital), E Harniman (St. Michael's Hospital), R Richards (Sunnybrook & Women's Hospital Sciences Centre)

Stakeholder Involvement: WSIB RAC: Funding this project, and the results will be presented to them regularly. The clinicians in the clinic are integrally involved in several stages of the project. Clinicians are integrally involved in several stages of the project.

Presentations:

Beaton DE, Govinda Raj A, Hogg-Johnson S, Richards RR. Predictive validity of an aggregate measure of pain and function in workers with compensated, musculoskeletal disorders of the shoulder and elbow. Nov 2005; San Diego, CA: American College of Rheumatology (ACR) Annual Scientific Meeting.

Publications:

Beaton DE, Kennedy C and the Workplace Upper Extremity Group. Beyond return to work: Testing a measure of at-work disability. *Qual Life Res* 2005; 14(8):1869-1879.

Beaton DE, Govinda Raj A, Hogg-Johnson S, Richards RR. Predictive validity of an aggregate measure of pain and function in workers with compensated, musculoskeletal disorders of the shoulder and elbow. *J Arth & Rheum* 2005; 52(9): S659-660.

Beaton DE, Solway, S Pitts S, Richards RR. A comparison of four measures of at-work disabilities in workers attending the WSIB Shoulder and Elbow Specialty Clinic. Canadian Association of Occupational Therapists (CAOT) conference, Vancouver, Canada. (May 2005).

Beaton DE, Solway S, Pitts S, Richards RR. A comparison of four measures of at-work disabilities in workers attending the WSIB Shoulder and Elbow Specialty Clinic. Canadian Orthopaedic Association (COA) conference, Montreal, Canada. (June 2005).

External Funding:

Beaton DE, Richards RR, Hogg-Johnson S. The validation of a classification system for work-related disorders of the shoulder and elbow. WSIB RAC: \$159,556; 2003-2005 (Administered at St. Michael's Hospital)

Epidemiology of Disability

A changing economic environment arising from global economic integration brings with it new opportunities and threats to the workforce. The health of Canada's workforce is an important factor affecting the productivity in the Canadian economy. As a result, increasing importance will be placed on research that aims to understand the factors that lead to disability at work and the role of therapeutic interventions in minimizing disability and restoring function.

Understanding the etiology of disability resulting from musculoskeletal disorders, the largest single cause of work disability in Canada, is a challenging research frontier, requiring the collaborative insights of epidemiology and clinical sciences. To understand the prospects for restoration of function, it is necessary to understand the impact of clinical management on musculoskeletal disorder – both at the level of the effectiveness of therapeutic innovations and at the level of the organization and delivery of health services.

There are several ongoing studies within this theme which focus on the effectiveness (and in some cases cost-effectiveness) of interventions in the management of work relevant musculoskeletal disorders. One study undertaken with colleagues at Arizona State University addresses the issue of cost-effectiveness of chiropractic versus medical care in returning workers with occupational low back pain to work.

The study suggests that those workers who do return to work show indicators of better health i.e., less pain and better quality of life. The first paper from this study describes the most usual course of back pain as episodic and recurrent in nature and has been submitted for publication. The results of the duration on benefits and cost effectiveness analyses which will be forthcoming in 2006 will be written up in several papers and will have direct applicability to policy makers at the WSIB.

Researchers in this theme are also working in collaboration with The Decade for Bone and Joint 2000-2010 World Health Organization Task Force on Neck Pain and Its Related Disorders. This work will ultimately contribute to the development of a clinical practice guideline for the treatment of neck pain.

In 2005 researchers completed the first phase of analysis in another study examining the epidemiology and health care utilization for neck pain complaints among claimants to the WSIB. The purpose of this first phase was to develop a method to accurately enumerate all workers with musculoskeletal injuries who make lost-time claims to workers' compensation boards. Using neck pain as an example, researchers identified nature of injury and part of body codes to classify neck pain cases and reviewed claims of a random sample of 434 claimants. We computed the proportion of claimants classified as having neck pain. The proportion of claimants classified with soft-tissue injuries to the neck varied from 0.88 for codes including "neck/cervical region", 0.69 for "back region" to 0.05 for those coded as "shoulder/upper arm". We conclude that restricting the enumeration of injuries to specific part of body codes can lead to a gross underestimation of the magnitude of soft-tissue disorders in epidemiological studies using workers' compensation data. The study demonstrates that neck pain is a common and burdensome problem for Ontario workers. Workers in the health care sector experienced the greatest burden of neck pain. Furthermore, the results highlight the importance of properly capturing all neck pain cases when describing its prevalence.

All three of these research projects are strongly linked to the *Occupational Disease, Injuries and Health Services Research* priority.

Project Titles:

The Relationship Between Impairment, Activity Limitations, Participation Restrictions and Markers of Recovery in Individuals with MSK Disorders: A Validation Study of Two Conceptual Frameworks (826) 83

The Arizona State University Healthy Back Study: A Study of the Cost Effectiveness of Chiropractic Versus Medical Care in Returning Injured Workers with Occupational Low Back Pain to Work (555)..... 86

What are the Key Modifiable Personal and Environmental Factors that Prevent Disability in People with Back Pain? A Consensus Using Delphi and Q-card Methodologies (111) 88

The Bone and Joint Decade 2000-2010 Task Force On Neck Pain and Its Associated Disorders (550)..... 90

The Epidemiology and Primary Care Utilization for Occupational Neck Pain in Ontario (370)..... 91

Decision Modeling and Economic Evaluation of Management Strategies for Neck Pain (122)..... 93

Occupational Mild Traumatic Brain Injury in Ontario: Identification, Prognosis and Health Care Utilization (165) 93

Studying the Health of Health Care Workers (810) 94

Investigating the Consequences of Work-related Injuries Among Young Workers in British Columbia (248)..... 96

The Relationship Between Impairment, Activity Limitations, Participation Restrictions and Markers of Recovery in Individuals with MSK Disorders: A Validation Study of Two Conceptual Frameworks (826)

Project Status: Ongoing

Introduction: Musculoskeletal disorders are a leading cause of disability and health care utilization in Canada. For most individuals the course of musculoskeletal disorders is episodic but a significant proportion of this population suffers from recurrent episodes of chronic disability. Despite improvements in our understanding of musculoskeletal disorders, defining and measuring "recovery" from these disorders remains problematic.

Objectives:

- ▶ To determine whether the construct of "resolution of the disorder" mediates the relationship between impairments, activity limitations, participation restrictions and self-assessment of recovery in a population-based cohort of Saskatchewan residents who sustained musculoskeletal injuries in a motor vehicle collision.
- ▶ To determine whether the indirect relationship between impairments, activity limitations, participation restrictions and self-assessment of recovery is mediated by the construct of "readjustment/redefinition" among subject who do not experience a resolution of their disorder.

Methods: We used data from a population-based incidence study of individuals with MSK disorders following traffic collision injuries in Saskatchewan. The cohort includes 6,139 insurance claimants who completed an insurance proof of claim form shortly after a traffic collision. Follow-up interviews took place at six and 12 weeks, and again at six, nine and 12 months post-injury. The data includes a measure of self-assessment of recovery and other standardized health status measures that will be used to measure: 1) impairment (pain intensity in 10 parts of the body and percentage of body in pain); 2) activity limitations (physical functioning and role physical subscales of the SF-12 questionnaire); and 3) participation restrictions (ability to perform occupation and insurance claim closure). We propose to use the Vanderbilt Pain Management Inventory to measure the construct of "readjustment/redefinition" and the CES-D questionnaire to measure depression. We used structural equation modeling to test the validity of the proposed framework.

Results:

The Relationship Between Impairment, Activity Limitations and Recovery from Traffic-related Musculoskeletal Injuries: We used this cohort of Saskatchewan residents to test whether resolution of the disorder and coping mediates the relationship between physical/psychological impairment and activity limitations, and recovery. Subjects who sustained a motor vehicle injury between 1997 and 1999 and reported pain of at least moderate in intensity were included. Measures of impairment (pain intensity in 10 locations), depression and activity limitations were obtained at six-week post-collision. The outcome, self-reported recovery, was measured at three months post-collision. Mediators (resolution of impairment, resolution of activity limitation and coping) were measured at the three month follow-up. We built two distinct structural equation models to quantify the direct and indirect relationship between impairment, activity limitations and recovery. One model used resolution of impairment (n=1,244) as a mediator and the other used resolution of activity limitations (n=1,209). Results suggest that the effects of impairment and depression are mediated by resolution of impairment, resolution of activity limitations and passive, but not active coping. In the first model (Fit: CFI=0.91; TLI=0.89), the standardized coefficient for the indirect effect of impairment through resolution and coping was -0.16 (p<0.01) and -0.07 (p<0.05) for activity limitations. The effect of depression (standardized coefficient = -0.15; p<0.01) was mediated through passive coping. The standardized

coefficient for the direct effect of resolution of impairment on recovery was 0.34 ($p < 0.001$) while the indirect effect through passive coping was 0.14. Results were similar for the second model. In conclusion, resolution and coping mediate the relationship between impairment, depression and activity limitations and self-reported recovery.

Researchers: Pierre Côté (Principal Investigator), Dorcas Beaton, Sheilah Hogg-Johnson, Selahadin Ibrahim, Vicki Kristman, J Cassidy (The Toronto Western Hospital), L Carroll (University of Alberta)

Stakeholder Involvement: Clinicians (medical doctors, chiropractors, physiotherapists, occupational therapists); researchers (epidemiologists, clinical epidemiologists, biostatisticians).

Presentations:

Côté P. Rehabilitation for whiplash injury: Does it promote faster recovery? 23 Feb 2005; Toronto, ON: GTA Rehab Network, Best Practices Day.

Carroll LJ, Cassidy JD, Côté P. Depression is a whiplash associated disorder: Depressive symptoms after whiplash. 28 April 2005; Edmonton, AB: Dept. of Health Sciences 3rd Annual Research Day.

Côté P, Ibrahim S, Carroll L, Cassidy JD, Beaton DE, Kristman VL, Hogg-Johnson S. Poster: The relationship between impairment, activity limitations and recovery from traffic-related musculoskeletal injuries. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health.

Côté P. MSK as recurrent chronic disease: How does this change our thinking about prevention and treatment. 25 October 2005; Toronto, ON: OSSA Staff Development Retreat. BMO Institute of Learning.

Côté P, Hogg-Johnson S, Cassidy JD, Carroll L, Bombardier C, Frank JW. The impact of early patterns of care on the recovery of whiplash injuries: A population-based cohort study. 21 Nov 2005; Stockholm, Sweden: Conference on Whiplash Associated Disorders. Research Challenges from an International and National View. Nobel Forum, Nobels Karolinska Institute.

Côté P, Hogg-Johnson S, Cassidy JD, Carroll L, Bombardier C, Frank JW. The impact of early patterns of care on the recovery of whiplash injuries: A population-based cohort study. 24 Nov 2005; Amsterdam, The Netherlands. EMGO Institute.

Cassidy, JD, Carroll LJ, Côté P, Frank J. Does rehabilitation benefit whiplash recover? 24 Nov 2005; Amsterdam, The Netherlands: Special Seminar, The Institute for Extramural Medicine (EMGO), VU University Medical Center.

Publications:

Côté P, Hogg-Johnson S, Cassidy D, Carroll LJ, Bombardier C, Frank JW. Initial patterns of clinical care and recovery from whiplash injuries: A population-based cohort study. *Arch Intern Med* 2005; 165:2257-2263.

Mercado AC, Carroll L, Cassidy JD, Côté P. Passive coping as a risk factor for disabling neck or low back pain. *Pain* 2005; 117:51-57.

Carroll LJ, Cassidy JD, Côté P. Depression is common after whiplash injury: The incidence, timing and course of depression after whiplash. Submitted: *Spine* [IWH WP #272]

Carroll LJ, Cassidy JD, Côté P. The role of pain coping strategies in prognosis after whiplash injury: Passive coping predicts slowed recovery. Submitted: Pain

Cassidy JD, Carroll LJ, Côté P, Frank JW. Does rehabilitation benefit whiplash recovery? Submitted: Spine

Cassidy JD, Côté P, Carroll LJ, Kristman V. The incidence and course of low back pain in the general population: A population-based cohort study. *Spine* 2005; 30: 2817-2823

Abstract:

Côté P, Ibrahim S, Carroll L, Cassidy JD, Beaton DE, Kristman V, Hogg-Johnson S. The relationship between impairment, activity limitations and recovery from traffic-related musculoskeletal injuries. 27-30 June 2005; Toronto, ON: Joint Meeting of the Society for Epidemiologic Research and the Canadian Society for Epidemiology and Biostatistics. *Am Journal Epidemiology* 161(Suppl): 258.

External Funding:

Côté P, Beaton DE, Cassidy J, Carroll L, Bombardier C, Hogg-Johnson S. The relationship between impairment, activity limitations, participation restriction and markers of recovery in individuals with musculoskeletal disorders: A validation study of two conceptual frameworks. CIHR: \$74,580; 2004 - 2006.

The Arizona State University Healthy Back Study: A Study of the Cost Effectiveness of Chiropractic Versus Medical Care in Returning Injured Workers with Occupational Low Back Pain to Work (555)

Project Status: Ongoing

Introduction: The relative cost-effectiveness of chiropractic and medical approaches for the treatment of occupational low back pain has been debated for many years. To date, research is inconclusive as to what type of primary care is most cost-effective. No study has yet combined rigorous economics and epidemiological methods to clarify this issue.

Objectives:

- ▶ To estimate the cost-effectiveness of chiropractic versus medical care in returning injured workers with occupational low back pain to work.

Methods: The ASU Healthy Back Study is a prospective cohort study of injured workers who file workers' compensation claims for occupational back pain. The study population includes nearly 200,000 workers from five U.S. employers spread over 37 States. The employers are: America West Airlines, American Medical Response, The Earthgrains Co. (now part of Sara Lee Corporation Baking Division), Maricopa County, and Marriott International, Inc. We established recruitment protocols specific to each employer to assure timely notifications of all work-related back injuries. When a worker reported a back injury, the employer notified the research team. The notification data include worker's demographic characteristics, occupation, and a description of the worker's injury. Injured workers who agreed to participate in the survey were contacted by telephone and a baseline interview was conducted as soon as possible. Follow-up interviews were conducted at one, six, and twelve months after onset.

Results: It is commonly accepted that 90% of injured workers compensated for back pain return to work within one month after onset, and this marks the end of the episode of back pain. However, this model does not capture the recurrent nature of back pain and disability. The purpose of our study is to describe the one-year patterns of employment and health outcomes of workers who make a workers' compensation claim for back pain. We conducted a cohort study of 1,321 injured workers with incident episodes of back pain. Injured workers were followed at one-month, six months and one year after onset. We describe the course of back pain in terms of patterns of employment, pain intensity, functional limitations and health-related quality of life. Our results indicate that a significant proportion of workers with compensated back pain experienced multiple episodes of work absence (30.2%; 95% CI 25.0-35.1). The proportion of injured workers who reported no episodes of work absence declined from 42.4% (95% CI 39.0-46.1) at one month to 33.6% (28.0-38.7) at one year. At one year, 2.9% (1.6-4.9) of workers had not yet attempted to return to work. Overall, workers who did not miss work and workers who returned to work and stayed reported significantly better health status than workers who experienced multiple episodes of work absence or workers who had not returned to work. We observe considerable movement among employment patterns throughout the one-year follow-up, including spells of work disability experienced by workers who initially reported mild back problems.

Researchers: Pierre Côté (Principal Investigator), John Frank, W Johnson (Arizona State University), M Baldwin (East Carolina University).

Stakeholder Involvement: Clinicians (physicians, chiropractors), Researchers (economists, epidemiologists)

Presentation:

Côté P, Baldwin ML, Johnson WG, Frank JW. Course of occupational back pain: Time to take another look beyond the first return to work. 10-14 Dec 2005; Philadelphia, PA. 133rd Annual Meeting of the American Public Health Association.

Publications:

Côté P, Baldwin ML, Johnson WG. Early patterns of care for occupational back pain. *Spine* 2005; 30:581-587.

Côté P, Baldwin ML, Johnson WG, Frank JW. The course of back pain in workers: Time to take another look beyond the first return-to-work. Submitted: Pain [IWH WP #302]

External Funding:

Côté P, Johnson W. Costs and outcomes of occupational back pain: Post injury employment patterns. NIOSH: \$1,368,902; 2003 – 2005.

What are the Key Modifiable Personal and Environmental Factors that Prevent Disability in People with Back Pain? A Consensus Using Delphi and Q-card Methodologies (111)

Project Status: Completed

Introduction: Recent research and the World Health Organization's advice are changing the way we see disability. Disability is no longer seen as the end stage of injury, it is a process that can be prevented by acting on certain personal and environmental factors. The factors associated with the development of disability in people with back pain (low back, upper back and neck) can be described as risk factors, prognostic factors, causal factors or predictive factors depending on when they are assessed and the researcher's background and approach. The International Classification of Functioning, Disability and Health (ICF) calls for their reframing as personal and environmental factors that modulate disability (the impact of back pain on the person's activities and participation).

To guide disability prevention interventions and policies this project used consensus methods to ask researchers, care providers, workers, employers and insurance representatives to take a critical look at the existing studies to identify: What are the factors that have the largest impact and are easiest to modify? What are the factors where consensus is not possible and thus require the more research?

Objectives:

- ▶ To reach consensus among expert researchers and Ontario stakeholders on the relative impact and modifiability of personal and environmental factors that prevent participation restrictions in people with back pain. The terms participation restrictions, personal factors, and environmental factors are used here as defined in the ICF.

Methods: Evidence-based summaries for 32 modifiable factors were used by 33 experts (researchers, care providers, patient representatives, employers, insurers) in a 3-round Delphi process, to reach consensus on the factors' relative impact (expected improvement in participation if the factor could be modified for a usual population of people with back pain) and modifiability (amount of time and resources required to change the factor). Consensus was strong, moderate or low (>85%, 50-84%, 33-49% of experts respectively).

Results: Judging from ICF, available research is "unbalanced" toward return to work, with little attention to other disability outcomes. It is also "patchy", with some factors ignored and others partially studied. Despite clear definitions and evidence summaries, there was substantial disagreement. After three rounds, there was strong consensus that Care Provider Reassurance had a high impact. There was moderate consensus that Expectation of Recovery and Decreased Fears had a high impact; and that Back Supports, Care Provider Reassurance and Patient Knowledge were relatively easy to change. There was low consensus that Patient Knowledge and Appropriate Care had a high impact and that Temporary Duties were easy to change. Some experts would still rank the following factors at the top, despite a majority decision to drop them: Amount of Pain, Job Satisfaction, Fitness, Function, Lifting Devices, Workstation Design and Physical Workload.

Researchers: Jaime Guzman (Principal Investigator), Jane Brennehan Gibson, Andrea Furlan, Jill Hayden, Debbie Jones, P Loisel (Sherbrooke University), D Cassidy (The Toronto Western Hospital)

Stakeholder Involvement: Nineteen of the panel members are stakeholders, the rest are researchers.

Presentations:

Guzman J, Frank JW, Hayden J, Cassidy JD, Loisel P, Furlan A, Flannery JF. What are the key modifiable personal and environmental factors that prevent disability in people with back pain? A consensus using Delphi and Q-card methodologies. 16-17 May 2005; Vancouver, BC: Institute for Work & Health and Toronto Rehabilitation Institute. Canadian Association for Research on Work and Health (CARWH) Bi-Annual Symposium.

Publications:

Guzman J, Frank JW, Hayden J, Cassidy D, Flannery J, Loisel P, Furlan A, Gibson J, Jones D. Key factors in back disability prevention. Background document for a consensus panel on the factors that prevent participation restrictions in people with back pain.

Guzmán J, Frank J, Hayden J, Cassidy D, Flannery J, Loisel P, Furlan A, Gibson J, Jones D. Key factors in back disability prevention. [IWH WP# 314]

External Funding:

Guzman J. What are the key modifiable personal and environmental factors that prevent disability in people with back pain? A consensus using Delphi and Q-card methodologies. WSIB RAC; \$29,504; 2004 - 2005.

The Bone and Joint Decade 2000-2010 Task Force On Neck Pain and Its Associated Disorders (550)

Project Status: Ongoing

Introduction: Neck pain is a common source of pain and disability in the industrialized world. Although several treatments are available for neck pain, there is a lack of consensus about the relative effectiveness of these therapies. This international project, started in 1999, includes a suite of studies, designed to answer different research questions. Several Institute staff are participating as members of the Task Force Scientific Secretariat (TFSS) (which has Canadian, U.S. and Swedish participation) as well as the Task Force Advisory Group (TFAG). The TFAG also has additional international representatives from Brazil, France, Australia and Switzerland.

Objectives:

- ▶ Conduct a systematic literature review on the epidemiology, diagnosis, treatment (benefit and harm) and prognosis of neck pain.
- ▶ Determine the risks of stroke associated with manipulation and the risks of gastrointestinal events associated with non-steroidal anti-inflammatory medication.
- ▶ Conduct a decision analysis study of patient preference with regard to the most common treatment for neck pain. See: Cost Analysis for Neck Pain (Project 122/3).
- ▶ Develop clinical guidelines for the treatment of neck pain.

Research Lead: Pierre Côté

The Epidemiology and Primary Care Utilization for Occupational Neck Pain in Ontario (370)

Project Status: Ongoing

Introduction: Much attention has been given to occupational back pain and upper extremity conditions. Often times, neck complaints are grouped with either back complaints or upper extremity complaints. In this project, we will focus on neck complaints as a separate entity.

Objectives:

- ▶ Develop a methodology to define and identify occupational neck pain (ONP) claims from the WSIB databases.
- ▶ Determine the prevalence and incidence of ONP claims in Ontario.
- ▶ Determine the administrative course of ONP claims and identify the predictors of duration of wage replacement benefits in a cohort of injured workers who made a claim to the Ontario WSIB in 1997-1998.
- ▶ Describe the health care utilization (type of health care provider(s), frequency of visits, diagnoses, type of service) of claimants with ONP one year before and two years after their injury. Specifically, we will describe the health care utilization of claimants with ONP as they transit through the acute, subacute and chronic phases of their injury.
- ▶ Determine whether the implementation of the Workplace Safety and Insurance Act (Bill 99, 1998) was associated with a change in the administrative course and health care utilization for ONP claims in Ontario.

Methods: We designed a cohort study of Ontario injured workers who made a claim to the Ontario WSIB between 1997-1998. We will form the cohort by accessing the WSIB claims database. Claims and health care billings data will be obtained for a period from one-year prior and two years after the date of injury. The WSIB data will be linked to the Ontario Ministry of Health data (OHIP) for the same period. The linked data will include demographic information, injury data, duration of claim, employer data, comorbidities, and health care utilization data. Definitions of ONP will be developed based on clinical criteria obtained through consensus of experienced clinicians using the part of body (head, neck and shoulder) and nature of injury (sprains and strains, occupational injury unspecified, and inflammation) codes recorded in the WSIB database. The sensitivity and specificity of these definitions in identifying neck pain cases will be validated through detailed abstraction of clinical information from a random sample of WSIB files. Based on these definitions we will compute the prevalence and incidence of ONP. Kaplan-Meier estimates of the time on wage replacement benefits will be used to describe the course of occupational neck pain claims. Cox model will be used to identify the predictors of the duration of wage replacement benefits. Descriptive statistics will be used to document the health care utilization. To describe the impact of Bill 99 on the prevalence, incidence, course and health care utilization, we will stratify the analysis by year of claim (1997 and 1998). This study will provide us with a broad description of the problem of ONP in Ontario. This information is necessary to develop secondary prevention strategies that may help reduce the burden of disability related to neck injuries.

Results: In our initial paper from this project we report on our approach to more accurately enumerate workers with musculoskeletal injuries who file lost-time claims to workers' compensation. Using neck pain as an example, we identified nature of injury and part of body codes to classify neck pain cases and reviewed claims of a random sample of 434 claimants and computed the proportion of claimants classified as having neck pain. We found that the proportion of claimants classified with soft-tissue injuries to the neck varied greatly from 0.88 for codes including "neck/cervical region", 0.69 for "back region" to 0.05 for those coded as "shoulder/upper arm". It appears that restricting the enumeration of

injuries to specific part of body codes can lead to a gross underestimation of the magnitude of soft-tissue disorders in epidemiological studies using workers' compensation data. Our approach leads to more accurate enumeration.

Researchers: Pierre Côté (Institute Coordinator), Dorcas Beaton, Claire Bombardier, Sheilah Hogg-Johnson, Vicki Kristman, Mana Rezai, Dwayne Van Eerd

Stakeholder Involvement: Ontario Ministry of Health and Long Term Care, WSIB

Presentations:

Côté P, Kristman VL, Vidmar M, Van Eerd D, Hogg-Johnson S, Beaton DE. Prevalence of occupationally-related neck pain in Ontario. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health. (Third Prize Winner for Student Presentation)

Côté P. Epidemiology/burden of illness for mechanical neck disorders update. 30 Sept 2005; Hamilton, ON: McMaster University, Symposium on Neck Pain: Current Research Update.

Publications:

Van Eerd D, Côté P, Beaton DE, Hogg-Johnson S, Vidmar M, Kristman V. Capturing cases in workers' compensation databases: The example of neck pain. Submitted: Am J Ind Med

Van Eerd D, Côté P, Beaton DE, Hogg-Johnson S, Vidmar M. Neck Pain within the workers' compensation system: Establishing a method of identifying true cases. [IWH WP# 303]

Côté P, Carroll L, Cassidy JD, Rezai M, Kristman V, and the Scientific Secretariat of the 2000-2010 Bone and Joint Decade Task Force on Neck Pain and Associated Disorders. A review of the epidemiology of neck pain in workers: Its prevalence, incidence and risk factors. In: Musculoskeletal disorders in the workplace. Nordin M, Anderson GJB, Pope M, editors. Mosby 2005. [IWH WP #295]

External Funding:

Côté P, Hogg-Johnson S, Bombardier C, Beaton DE. The epidemiology and primary care utilization for occupational neck pain in Ontario. Special Chiropractic Research Fund, Ontario Chiropractic Association and Ontario Ministry of Health and Long Term Care Special Chiropractic Research Fund: \$139,950; 2002-2005.

Decision Modeling and Economic Evaluation of Management Strategies for Neck Pain (122)

Project Status: Ongoing

Introduction: The personal and economic impact of neck pain is expected to worsen with the aging population. There is little agreement on the best treatment for chronic neck pain. Publicized cases of rare complications have also renewed concerns about the relative risks of treatments. A comprehensive overview of the benefits and risks of neck pain treatments is needed for clinicians and for policy makers deciding on resource allocation. We shall appraise the options using Decision Analysis.

Objectives:

- ▶ Obtain patient-based preferences (utilities and values) for health outcomes associated with neck pain and its treatments using Standard Gamble and Health Utilities Index methods.
- ▶ Obtain estimates of neck pain treatment effectiveness and complication rates, identified by systematic literature review.
- ▶ Describe the natural history of neck pain in an untreated sample of the general population, by performing a secondary analysis of existing data from the Saskatchewan Health and Back Survey.
- ▶ Construct and validate a Markov decision analytic model.

Research Lead: Gabrielle van der Velde (PhD Candidate)

Occupational Mild Traumatic Brain Injury in Ontario: Identification, Prognosis and Health Care Utilization (165)

Project Status: Ongoing

Introduction: Mild traumatic brain injury (MTBI) is common, with incidence rates that vary from 100 to 600 per 100,000 persons. The WHO Collaborating Centre Task Force on Mild Traumatic Brain Injury found falls and motor-vehicle collisions (both occupational hazards) to be associated with MTBI, but no accepted task force study examined the burden of MTBI in workers. The first step in developing effective prevention strategies aimed at reducing the burden of disability related to occupational MTBI is to understand its magnitude, course, impact on workers and demands on the health care system.

Objectives:

- ▶ Develop a valid definition of occupational MTBI.
- ▶ Describe the course and prognosis of occupational MTBI in Ontario.
- ▶ Describe the health care utilization of claimants who made an incident claim for occupational MTBI.
- ▶ Study the impact of the January 1, 1998 change in workers' compensation legislation (Bill 99) on the administrative course and health care utilization of injured workers with occupational MTBI in Ontario.

Research Lead: Pierre Côté

Studying the Health of Health Care Workers (810)

Project Status: Ongoing

Introduction: This project aims to build an integrated database to facilitate a better understanding of the health of health care workers and to encourage changes to promote worker health. It is in three phases. The first involves the construction of a comprehensive database linking health and compensation records. The database will be used in Phase II of the project to construct profiles of health and health care utilization for the study population and to examine differences in health profiles over time. Phase III will analyze trajectories of mental health and musculoskeletal health over time, and analyze relationships between workplace characteristics and musculoskeletal and mental health outcomes.

Objectives:

- ▶ Describe differences in health and health care utilization outcomes across demographic, occupational, and workplace groups in the health care sector, and evaluate to what extent these differences vary or remain the same across the 10-year study period (1991-2000).
- ▶ Describe mental health and musculoskeletal health trajectories over time and investigate characteristics that define different group trajectories.
- ▶ Investigate the effect of work organization factors at the hospital-level on the risk of musculoskeletal and mental disorders, independent of demographic factors and occupation.

Methods: This is a retrospective (1991-2000) database linkage study of health care workers in the B.C. acute care sector. The research database was constructed by linking for research purposes via agreements with data stewards, data from medical services, hospitalization, workers' compensation, and extended health benefits/long term disability data sources. Additional data on hospital-level indicators of workload available through the Ministry of Health were linked by hospital of employment codes. Descriptive analysis investigated rates of musculoskeletal and mental health outcomes for across data sources by demographic (age, genders, SES status), occupation/hospital (size of hospital, teaching/non teaching, workload indicators such as number of procedures/admissions) and geographic variables. Trajectory analysis investigated patterns of musculoskeletal and mental health outcomes and characteristics of groups with a high probability of these outcomes over time. Multi-level models will investigate the effect of group membership (hospital peer group, health authority and hospital characteristics on the risk of musculoskeletal and mental health outcomes).

Results: Results showing substantially different rates of MSD health outcomes for different Health Care Organizations (HCO) point to the potential importance of differences in the work environment conditions in determining MSK health care utilization outcomes. Administrative workload measures are associated with increases in MSK outcomes but only partially explain inter Health Care Organization differences; additional primary data on HCO working conditions are needed.

Researchers: M Koehoorn (Principal Investigator, University of British Columbia), Donald Cole, Selahadin Ibrahim, C Hertzman (University of British Columbia), J Dufton (University of British Columbia), A Ostry (University of British Columbia)

Stakeholder Involvement: Major health sector unions nationally including the B.C. Nurses Union and the Hospital Employees Association, and the Healthcare Benefit Trust, the largest provider of health care benefits to the B.C. health care sector, provincially.

Publications:

Koehoorn M, Cole DC, Hertzman C, Lee H. Healthcare use associated with work-related musculoskeletal disorders among hospital workers. Submitted: J Occup Rehab

Cole DC, Koehoorn M, Ibrahim S, Hertzman C, Ostry A, Xu F, Holmes P. Factors associated with musculoskeletal outcomes among health care workers – a multilevel analysis. *Am J Epidemiology* 2005;161(Suppl): S85

Koehoorn M, Hertzman C, Cole DC, Xu F, Ibrahim S, Ostry A, Holmes P. Mental illness trajectories among health care workers. 15-17 May 2005; Vancouver, BC: Canadian Association for Research on Work and Health (CARWH) Bi-annual Symposium.

Presentations:

Cole DC, Koehoorn M, Ibrahim S, Hertzman C, Ostry A, Xu F, Holmes P. Poster: Factors associated with musculoskeletal outcomes among health care workers – a multilevel analysis. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health.

Koehoorn M, Cole DC, Hertzman C, Ibrahim S, Ostry A, Xu F, Holmes P. Mental health trajectories among health care workers. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium.

Investigating the Consequences of Work-related Injuries Among Young Workers in British Columbia (248)

Project Status: Completed

Introduction: Work experiences are beneficial for adolescents and young adults. However, young workers also face exposure to a variety of health and safety hazards that can lead to work-related injury and illness. Lost-time compensation claim rates for 15 to 24 year olds are consistently higher than the rate of claims for all workers. Moreover, there remains little information on the contribution and consequences of occupational injuries to the health of young people. The purpose of this study is to further our understanding of the experience of young workers and the longer-term health consequences of being injured on the job.

Objectives:

- ▶ Investigate if young workers have significantly higher general health care utilization compared to a matched group of non-claimants following a workers' compensation claim.
- ▶ Identify at what point in time relative to injury date does health care utilization increase and for how long it is sustained.
- ▶ Investigate if higher health care utilization differs by type of occupation or type of injury.

Methods: This project is a longitudinal, database linkage study using health services and workers' compensation data. The Centre for Health Services and Policy Research (CHSPR) at UBC, via the B.C. Linked Health Database application process for research process, extracted all workers' compensation records for B.C. workers aged 15-24 years during the years 1991 to 2000, and further linked injured workers with their health care records for these same years and provided a confidential linked data file to the research team. CHSPR also provide a similar data set for a comparison population matched on age, gender and geographic residence drawn from the B.C. client registry. Using the longitudinal data files for injured workers and the matched comparison group, we describe patterns of health care utilization among both groups and, using trajectory models (hierarchical and latent growth curve modeling), investigate and compare health care trajectories over time. Trajectory analysis in SAS examines the stability and variability in patterns of health behaviours among cohort members and identifies individuals following trajectories with distinct levels of behaviours. The people included in each group have in common that they follow trajectories with similar patterns of variation and levels of health care utilization during the follow-up period. Subsequent analysis will investigate the factors associated with group membership to begin to understand and predict differences in health trajectories among injured workers compared to the general population.

Results: Final report submitted to the Workers' Compensation Board of British Columbia.

Researchers: M Koehoorn (Principal Investigator, University of British Columbia), Curtis Breslin

Stakeholder Involvement: Workers' Compensation Board of British Columbia (Prevention Division, Divisional Young Workers Team, Young Workers Steering Committee).

Evidence-Based Practice

Injured workers, health-care providers, payers 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. The Institute was created just prior to the release of the *Acute Low-back Pain Guidelines* from the U.S. Agency for Health Care Policy and Research (AHCPR) in 1994. Consequently, the Institute's initial focus in EBP was on low-back pain and the diffusion of these guidelines to our relevant stakeholders in Ontario. In 2004, the Institute was approached by the Ontario Medical Association and the Ministry of Health to participate in a clinical guideline development process for primary care, on the basis of this earlier work. In conjunction with the Ministry of Health's Guideline Advisory Committee (GAC) the College of Physicians and Surgeons, the Ontario College of Family Physicians, the University of Toronto and other colleagues, IWH staff are engaged in a process of disseminating these guidelines and evaluating the dissemination approach. In 2005, IWH researchers were involved in the development of a Canadian Guideline on the management of chronic non-malignant pain including a section on musculoskeletal pain.

Much of the current work of the EBP theme is related to the Institute's role as an international Cochrane Collaboration Review site – The Back Review Group. The Back Review Group has released over 30 evidence-based reviews on the effectiveness of interventions for low back pain. The methodological expertise at IWH in systematic reviewing began with this group and it has contributed strongly to the growth of these skills and formalization of methods for systematic reviewing and summarizing large bodies of literature across the organization.

In 2005 WSIB initiated discussions regarding the role of IWH in conducting the search and summarizing the literature for another Program of Care, one for Chronic Pain. Researchers in the area continue to participate as faculty members in the week-long University of Toronto multidisciplinary training program on pain and pain management for medical, nursing and rehabilitation students.

The content of Cochrane reviews and the clinical systematic reviews is most relevant to clinicians and policy makers in the *Occupational Diseases, Injury and Health Services Research* areas.

Project Titles:

Cochrane Collaboration Back Review Group: Systematic Reviews of the Scientific Literature on Spinal Disorders (440, 670).....	99
Systematic Review of Conservative Treatment Interventions for Chronic Musculoskeletal Pain (965).....	102
Adherence to Clinical Guidelines for Plain Film Radiography in Acute Low Back Pain Among Chiropractic Trainees (680).....	103

Development of a Framework to Identify Clinically Useful Predictive Factors for Low
Back Pain (130) 105

Back Guide/Linkages/Ontario Occupational Health Nurses' Association
Journal (830, 515, 345)..... 106

Cochrane Collaboration Back Review Group: Systematic Reviews of the Scientific Literature on Spinal Disorders (440, 670)

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 currently coordinates the Back Review Group (BRG), one of 50 review groups in the Cochrane Collaboration. The editorial and central coordinating activities associated with the BRG are described here as well as IWH researcher involvement in conducting systematic reviews within the BRG.

Objectives:

- ▶ Develop standardized methods of randomized controlled trials in low-back pain research.
- ▶ Prepare, maintain and disseminate systematic reviews of the scientific literature on spinal disorders.
- ▶ 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.
- ▶ Continue to seek external funding.

Results:

Published four new reviews: Traction for LBP; Electrotherapy for mechanical neck pain; Medicinal and injection therapies for neck pain; Exercises for mechanical neck pain

Published six substantially updated reviews: Acupuncture and dry-needling for LBP; Behavioural treatments for chronic LBP; Exercise therapy for LBP; Neuroreflexotherapy for chronic LBP; Surgery for degenerative lumbar spondylosis; TENS for chronic LBP

Published five new protocols: Worksite interventions for workers with neck & back disorders; Insoles for prevention & treatment of back pain; Low level laser therapy for LBP; Chiropractic interventions for LBP; Patient education and communication for mechanical neck pain

Researchers: Vicki Pennick (Institute Coordinator), L Bouter (EMGO Institute (Co-editor)), Judy Clarke, Doreen Day, Andrea Furlan, Jaime Guzman, Emma Irvin, Nadia Marchese, Rhoda Reardon, Sandra Sinclair, Heather Widdrington,

Stakeholder Involvement: Clinical stakeholders: Participate in Cochrane activities at their own level of interest and expertise. This varies by individuals, 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 lay public.

Presentations:

Pennick V. All you ever wanted to know about systematic reviews but were afraid to ask. 2 March 2005; Toronto, ON: Nursing Research Interest Group Workshop.

Pennick V. All you ever wanted to know about Cochrane reviews but were afraid to ask. 4 May 2005; Toronto, ON. Consumers and Research: Making the Connection, Ontario Neurotrauma Foundation Workshop.

Pennick V. All you ever wanted to know about systematic reviews but were afraid to ask. 3 June 2005; Toronto, ON: RNAO 3rd Biennial International Conference Best Practice Guidelines: The Key to Knowledge Practice Synergy.

Hayden JA, Reardon R, Kosny A, Bombardier C. Involving clinical stakeholders in the systematic review process: Exercises for low back pain. 22-26 Oct 2005; Melbourne, Australia: The 13th Cochrane Colloquium.

Hayden JA, Tomlinson G. Follow-up or change scores: Does it matter which outcome is used in meta-analysis of randomized controlled trials? 22-26 Oct 2005; Melbourne, Australia: The 13th Cochrane Colloquium.

Bombardier C, Ammendolia C, Cote P, Pennick V, Reardon R. Low Back Pain. 6 October 2005; Mini-med school panel presentation, University of Toronto.

Pennick V, Gillespie L, Maxwell L, Mayhew A. A tale of four review groups [poster]. 22-26 October 2005. XIII Cochrane Colloquium, Australia.

Pennick V, Gillespie L, Maxwell L, Mayhew A. A tale of four review groups [oral]. 2-3 Dec 2005; 4th Canadian Cochrane Symposium.

Pennick V, Hayden J, Irvin E. All you wanted to know about the Cochrane Colloquium but were afraid to ask. 6 Dec 2005. Institute for Work & Health Plenary Series.

Bouter L, Bombardier C, Pennick V. Open Back Group Meeting. 25 Oct 2005. XIII Cochrane Colloquium, Australia.

Furlan AD. Poster: Oct 2004; Edmonton, AL: International Forum VII on Primary Care Research for Low Back Pain.

Furlan AD, Bombardier C, Jadad A, Tomlinson G. Poster: What is the study design? Oct 2004; Ottawa, ON: XII Cochrane Colloquium.

Furlan AD, Van Tulder M, Cherkin D, Tsukayama H, Lao L, Koes B, Berman BM. Poster: An updated Cochrane systematic review. Oct 2004; San Francisco, CA: Society for Acupuncture Research 11th Annual Symposium on Acupuncture for Low-back Pain.

Glenton C, Nilsen SE, Kho ME, Pennick V, Underland V, Koy T, Vist GE, Oxman AD. Poster: Using Cochrane reviews to develop consumer information - choosing and presenting outcomes. Oct 2004; Ottawa, ON: XII Cochrane Colloquium.

Hayden JA, Tomlinson G. Bayesian statistics in meta-analysis and meta-regression. Oct 2004; Ottawa, ON: XII Cochrane Colloquium Advanced Educational Workshop.

Hayden JA, Van Tulder MW, Malmivaara AV, Koes BW. Poster: Part I: Is exercise therapy effective in the treatment of non-specific low back pain? An updated systematic review and meta-analysis of randomized controlled trials. Oct 2004; Edmonton, AB: International Low Back Pain Forum.

Kho ME, Glenton C, Pennick V, Koy T, Underland V, Vist GE, Oxman AD. Poster: Using Cochrane reviews for patient-centred information on the management of low-back pain. Oct 2004; Ottawa, ON: XII Cochrane Colloquium.

Kho ME, Glenton C, Pennick V, Koy T, Underland V, Vist GE, Oxman AD. Poster: Using Cochrane reviews for patient-centred information on the management of low-back pain. Oct 2004; Edmonton, AB: Alberta International Forum VII: Primary Care Research on Low-Back Pain web site.

van Tulder MW, Malmivaara AV, Hayden J, Koes BW. Interpretation of the results of trials on back pain: a novel approach. Oct 2004; Edmonton, AB: International Low Back Pain Forum.

Pennick V. Everything you ever wanted to know about Cochrane but were afraid to ask. Nov 2004; Toronto, ON: HAD 5308H Systematic Reviews Course, University of Toronto, HPME Department.

Pennick V, Maxwell L. Cochrane Reviewer Training Workshop. Nov 2004; Toronto, ON.

Publications:

Hayden J, Van Tulder M, Malmivaara A, Koes B. Part I: Is exercise therapy effective in the treatment of non-specific low back pain? An updated systematic review and meta-analysis of randomized controlled trials. Accepted: *Ann Intern Med*

Hayden J, Van Tulder M, Tomlinson G. Part II: Which exercise therapy intervention strategies are associated with improved outcomes in chronic low back pain? A Bayesian meta-regression analysis. Accepted: *Ann Intern Med*

Furlan AD, van Tulder M, Cherkin D, Tsukayama H, Lao L, Koes B, Berman B. Acupuncture and dry-needling for low back pain: an updated systematic review within the framework of the Cochrane collaboration. *Spine* 2005; 30:944-963

Furlan AD, van Tulder MW, Cherkin DC, Lao L, Tsukayama H, Koes BW, Berman BM. Acupuncture and dry-needling for low-back pain. *The Cochrane Library Issue 1, 2005.*

Hayden JA, Van Tulder MW, Malmivaara AV, Koes BW. Meta-analysis: Exercise therapy for non-specific low back pain. *Ann Intern Med* 2005; 142:765-775. Featured article

Hayden JA, Van Tulder MW, Tomlinson G. Systematic review: Strategies for using exercise therapy to improve outcomes in chronic low back pain. Featured article, *Ann Intern Med* 2005; 142:776-785.

Hayden JA, Van Tulder MW, Malmivaara AV, Koes BW. Exercise therapy for treatment of adult non-specific low back pain. *The Cochrane Database of Systematic Reviews.*

Heymans MW, van Tulder MW, Esmail R, Bombardier C, Koes BW. Back schools for non-specific low back pain: A systematic review within the framework of the Cochrane Collaboration Back Review Group. *Spine* 2005; 30(19):2153-2163.

Day D, Furlan A, Irvin E, Bombardier C. Simplified search strategies were effective in identifying clinical trials of pharmaceuticals and physical modalities. *J Clin Epi* 2005; 58(9):874-881. [IWH WP# 259]

Pennick V. Evidence-based nursing practice. Canadian Association of Nephrology Nurses and Technologists (CANNT) Journal 2004; 14(3):46-47.

Van Tulder MW, Furlan AD. What is the value of alternative treatment? In: Non-Specific Low Back Pain. van Tulder M, Waddell, editors.

Furlan A, van Tulder M, Cherkin D, Tsukayama H, Lao L, Koes B, Berman B. Acupuncture for low-back pain. An updated Cochrane systematic review. The Journal of Pain 2004; 5(3) Suppl 1: 88.

External Funding: Pending

*Grimshaw J, Bombardier C, Klassen TP, McDonald J, Moher D, Tugwell P, Wright JM, Lavis J. Knowledge synthesis and translation by the Cochrane Collaboration in Canada. CIHR and CCOHTA: \$1,873,355; 2005-2010.

Systematic Review of Conservative Treatment Interventions for Chronic Musculoskeletal Pain (965)

Project Status: Ongoing

Introduction: Over the past number of years the WSIB have been developing, in partnership with representatives of the relevant health care provider professional associations and regulatory colleges, evidence based programs of care for some of the more burdensome work related injuries and illnesses. The Institute has been asked to assist in the development of two of the earlier programs.

The work of the International Cochrane Collaboration Back Review Group which is based at IWH has been actively used in the development of the WSIB Programs of Care for Acute and Persistent Low Back Pain and in addition for the Report of the Chronic Pain Expert Advisory Panel, prepared for the WSIB. In August 2005 WSIB engaged IWH to conduct the literature search, summarize the evidence and provide scientific input into the development of another Program of Care, one for the conservative management of chronic musculoskeletal pain.

Objectives:

- ▶ Conduct a systematic review of the guidelines and systematic reviews which include evidence on any of 22 conservative interventions to manage chronic low back pain.
- ▶ Provide a workshop for the health care provider team on the basic elements of critical appraisal and how to interpret an evidence table.
- ▶ Develop evidence table for the 22 interventions previously identified.
- ▶ Assist the health care panel in applying the evidence in the development of a program of care for chronic musculoskeletal pain.
- ▶ Conduct further searches and develop additional evidence tables on the 22 interventions of interest based on non low back pain systematic reviews and guidelines as determined by the health care panel.

Research Lead: Sandra Sinclair

Adherence to Clinical Guidelines for Plain Film Radiography in Acute Low Back Pain Among Chiropractic Trainees (680)

Project Status: Completed

Introduction: An integral but controversial component of chiropractic practice is the use of radiography. High use of radiography on patients with low back pain – the group most commonly treated by chiropractors – is of concern given the evidence of its limited value, high cost and potential health risks. Evidence-based guidelines suggest that radiography should be restricted to a minority of patients suspected of having serious underlying disease. To determine if the gap between evidence and usual chiropractic practice begins in undergraduate training we undertook two studies: (A) involves a self-administered patient questionnaire and chart review to assess actual X-Ray referral compared to clinical practice guidelines for patients of the teaching clinics of the Canadian Memorial Chiropractic College; a second study (B) compares the use of radiography for low-back pain among all chiropractic schools world-wide with evidence-based guidelines. The third study (C) evaluating the utilization and cost of lumbar and full spine radiography billed by Ontario chiropractors from 1994 to 2001 using WSIB and OHIP databases provides context in economic terms.

Objectives:

Project (A)

- ▶ Develop a conceptual framework for the adherence of radiography guidelines.
- ▶ Describe the characteristics of patients who present to chiropractic teaching clinics with a new episode of low back pain.
- ▶ Determine the x-ray use rate among trainees for patients with a new episode of acute low back pain.
- ▶ Assess adherence to plain film guidelines for acute low back pain among chiropractic teaching clinics

Project (B)

- ▶ Compare instruction provided at chiropractic schools world-wide on the use of radiography for low back pain with that recommended by evidence-based guidelines

Project (C)

- ▶ Evaluate trends in utilization and costs for the use of lumbar and full spine radiography among Ontario chiropractors from 1994 to 2001 using OHIP and WSIB databases.

Methods: Project (A) From January to September 2004, we screened 1241 consecutive patients with low-back pain who presented at six out-patient teaching clinics operated by one of only two existing chiropractic schools in Canada. Information about red flags was obtained by asking eligible participating patients to complete a self-administered questionnaire and also by a chart review. Information about whether or not each patient was recommended for radiography was obtained by self-report chart review only. These data were analyzed in the context of three clinical guidelines for the use of plain radiography (which we had selected as the “reference standard” for evidence-based clinical care). For the main analysis the proportion of patients without red flags (according to the guidelines) who were not recommended for radiography was calculated. Secondary analyses included: the rate of radiography recommendations at the teaching clinics for patients with a new episode of low-back pain; and the proportion of patients with red flags for each guideline; and the proportion of patients with red flags among those who were recommended for radiography.

Project (B) Persons responsible for radiology instruction at each of the accredited chiropractic schools throughout the world were contacted and invited to participate in a web-based survey. The survey included questions about the role of plain film radiography in chiropractic practice, the use of clinical practice guidelines and instruction given to students for the use of radiography for patients with acute low-back pain and for the use of full spine radiography.

Project (C) Time-trend analysis of chiropractic claims submitted to the Ontario Health Insurance Plan (OHIP) or Workplace Safety & Insurance Board (WSIB) from 1994/5 to 2000/01 fiscal years.

Results: Project (A) Of the 503 eligible patients, 448 (89.1 per cent) agreed to fully participate in the study. Their mean age was 39.2 years and 43.3 per cent were female. Radiography was recommended for 12.3 per cent of the sample; the vast majority of recommendations (96.3 per cent) were for lumbar spine radiography. Only one patient was recommended for full spine radiography. According to the selected practice guidelines, the proportion of patients with red flags ranged from 45.3 to 70.5 percent. The proportion of patients without red flags who were not recommended for radiography was 89.4, 95 percent confidence interval (85.5 to 93.2), 93.3 per cent (89.6 to 97.0) and 94.7 per cent (90.9 to 98.5) for each selected guideline. The proportion of patients with red flags among those recommended for radiography ranged from 52.7 to 87.3 per cent.

Project (B) Of the 33 chiropractic schools identified world-wide, 32 (97 percent) participated in the survey. Most respondents (88 per cent) were the chair, director, coordinator, professor or instructor of radiology at their school. A total of 25 (78 percent) respondents disagreed that “routine radiography should be used prior to spinal manipulation”. A total of 29 (91 per cent) respondents disagreed that there “was a role for full spine radiography for assessing patients with low-back pain”, and 29 (91 per cent) respondents disagreed that “oblique views should be part of a standard radiographic series for low-back pain”. However, there was a mixed response: 14 (44 per cent) disagreed and 13 (41 per cent) agreed that there “is a role for radiography in acute low-back pain in the absence of “red flags” for serious disease”. The mixed responses were shared among the different geographic regions. Over half the respondents indicated they believe “there is over-utilization of radiography by chiropractors in their community”.

Project (C) During the seven-year period, the proportion of OHIP claimants receiving lumbar spine radiography decreased from 4.54 per cent to 3.25 per cent and for full spine radiography from 3.87 per cent to 3.04 percent. For WSIB claimants, lumbar spine radiography decreased from 6.49 per cent to 3.30 per cent of claimants and full spine radiography from 1.51 per cent to 0.94 per cent. OHIP payments for lumbar spine radiography decreased 12.7 per cent to \$562,944 whereas full spine radiography payments decreased 5.3 percent to \$1,071,408. WSIB lumbar and full spine radiography payments decreased 44.2 per cent and 34.3 per cent to \$31,202 and \$11,713 respectively.

Research Lead: Carlo Ammendolia (PhD Candidate)

Stakeholder Involvement: Canadian Memorial Chiropractic College provided permission to recruit patients from each of the six out-patient clinics for the study.

Publications:

Ammendolia C, Kerr MS, Bombardier C, and the Canadian Task Force for Preventive Health Care. The use of back belts for prevention of occupational low back pain: A systematic review. *J Manipulative Physiol Ther* 2005; 28(2):128-134.

Ammendolia C. Letter to the Editor. Radiographic anomalies that may alter chiropractic intervention strategies in a New Zealand population. *J Manipul Physiol Ther* 2005; 28(5):375.

Lisi AJ, Holmes EJ, Ammendolia C. High velocity, low amplitude spinal manipulation for symptomatic lumbar disc disease: A systematic review of the literature. *J Manipulative Physiol Ther* 2005; 28(6):429-442.

Ammendolia C, Côté P, Hogg-Johnson S, Bombardier C. Do chiropractors follow guidelines for radiography in low-back pain? A study of chiropractic teaching clinics. (Originally titled: A new episode of low back pain: Adherence to clinical guidelines for plain radiography. How well do chiropractic trainees fair? [IWH WP #298])

Ammendolia C, Kaw S, Hogg-Johnson S, Côté P, Bombardier C. Utilization and costs of lumbar and full spine radiography by Ontario chiropractors from 1994 to 2001. [IWH WP #301]

Ammendolia C, Taylor JAM, Pennick V, Côté P, Hogg-Johnson S, Bombardier C. Adherence to guidelines for back x-rays. A survey of chiropractic schools world-wide. (Originally titled: Chiropractors and spine radiography. The Great Divide. Where does it all begin? Part II. A Survey of chiropractic schools world-wide. [IWH WP # 304])

External Funding:

Ammendolia C, Bombardier C, Hogg-Johnson S. Validation of a decision aid tool for x-ray use in patients with acute low back pain (ALBP). Special Chiropractic Research Fund, Ontario Chiropractic Association and the Ontario Ministry of Health and Long Term Care: \$187,450; 2002-2005.

Development of a Framework to Identify Clinically Useful Predictive Factors for Low Back Pain (130)

Project Status: Ongoing

Introduction: Low back pain is one of the leading causes of disability and has a major socioeconomic impact. The majority of the cost associated with this disorder is generated by a small percentage of patients whose condition proceeds to chronicity. Ability to predict accurately the clinical course early may lead to more effective management and would facilitate future investigations. Although there is an abundance of literature attempting to predict those patients at greatest risk of chronicity, conflicting results, complex prognostic models, and limited attention to prognostic factor prevalence means that these studies are of limited usefulness to the practising clinician. This study will also provide the opportunity to investigate methodology around combining non-randomized and heterogeneous studies. Specific areas for novel methodological investigation include: assessing primary study design and methodology, exploring alternative methods for combining information from heterogeneous studies, and model-based approach to meta-analysis.

Objectives:

- ▶ To understand and advance state of the art in etiology of chronic disability in low back pain in order to guide and inform clinical practice and future research.
- ▶ To advance the research methodologies in systematic review of prognostic studies.

Research Lead: Jill Hayden (PhD Candidate)

Back Guide/Linkages/Ontario Occupational Health Nurses' Association Journal (830, 515, 345)

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. Linkages, distributed semi-annually with At Work and available in PDF through the Institute's website, critically reviews the best available evidence in the peer-reviewed literature in the area of soft tissue injury. From the Research Frontier is a regular feature of the Journal of the Ontario Occupational Health Nurses' Association, the official publication of the Association. Published three times a year, the column highlights the work of Institute researchers and colleagues that may be of import 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.

Objectives:

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

Research Lead: Vicki Pennick

Prevention of Work Disability

Achieving optimal return-to-work outcomes that support the functional recovery of injured workers and minimize workplace and societal costs is a complex challenge that requires coordination between workplace parties, the compensation insurer and health-care system institutions and providers. In recent years, there has been renewed interest in evidence on the quality and effectiveness of interventions to support the safe and sustainable return-to-work of injured workers. The IWH has made a sustained commitment to research return-to-work issues since its foundation and its staff have been active in supporting WSIB's policy development in return-to-work program delivery.

The Institute's traditional focus has been on musculoskeletal disorders, the dominant cause of disability from work-related causes in Ontario. More recently, the Institute's scientific staff have been reflecting on how we might contribute understanding of effective methods of reducing work disability arising from mental disorders. Untreated or under-treated mental health needs may adversely affect the health and recovery of workers disabled by a musculoskeletal injury. Representatives of employers and of workers in Ontario are increasingly advocating enhanced detection, treatment and return-to-work strategies arising from mental health disorders. In 2004, the Institute's Scientific Advisory Committee endorsed a recommendation from IWH scientific staff to develop research into the prevention of work disability arising from these causes. The Institute has consolidated long-standing interests in the prevention of disability from musculoskeletal injury with a new focus on the prevention of disability from mental health disorders. Jointly these projects encompass the range of work within this theme.

Throughout 2005 the Institute worked alongside the WSIB return-to-work program staff to develop mechanism to translate the results of a WSIB initiated systematic review of workplace-based return-to-work interventions. This review conducted by IWH researchers is the most comprehensive review of this literature to date. These results along with the findings of other IWH research formed the basis of the IWH presentation to the Senior WSIB Management RTW Roundtable in August 2005.

In 2006 IWH will be adding to the evidence base on the optimal models for return to work and disability management through the analysis of data from a two year WSIB RAC funded study on readiness for return to work. The examination of factors influencing return to work is relevant to the *Fair Compensation and Ontario Workers' Compensation System Research*.

Project Titles:

Workplace-Based Return-to-Work (RTW) Interventions: A Systematic Review of the Literature (142).....	109
Determinants of Return to Work: Applying the Readiness for Change Model (341)	111
Effects of Return-to-Work on Health-Related Quality of Life in HIV/AIDS (756)	111
Training Initiatives In Work Disability Prevention (144)	112
Mental Health Disorder, Treatment and Work Disability in the NPHS (560)	112

The Economic Costs of Mental Disorders, Alcohol and Illicit Drugs in Ontario: A
Cost-of-Illness and Microsimulation Study (231)..... 113

KTE in Health Services Research Program..... 114

Workplace-Based Return-to-Work (RTW) Interventions: A Systematic Review of the Literature (142)

Project Status: Ongoing

Introduction: Employers, insurers and workers have expressed a growing interest in workplace-based return-to-work (RTW) intervention studies for occupational injuries. These studies have been scarce and they have been conducted using a variety of research designs, such as randomized and non-randomized trials. In order to provide guidelines regarding the most effective RTW strategies and to direct future research priorities in the area of RTW, a systematic literature review of the most critical Canadian and international studies was conducted, and summary reports were shared with the WSIB in 2004.

Objectives:

- ▶ Provide an overview of the main RTW strategies, outcomes and benefits associated with workplace-based intervention programs.
- ▶ Provide guidelines regarding the most effective evidenced-based RTW workplace-based interventions.
- ▶ Summarize effective evidenced-based RTW strategies - this product is intended for use by the WSIB.
- ▶ Conduct systematic literature review of intervention studies for peer-reviewed publication.

Methods:

Search: Seven databases were searched, in English and French, between January 1990 and Dec 2003.

Selection Criteria: For quantitative studies, peer-reviewed comparative studies of RTW interventions provided by the workplace or by insurance companies to work-disabled workers with a musculoskeletal or other non-malignant pain-related condition, or to workers with lost-time claims. Outcomes included work disability duration, economic outcomes, and quality of life/work outcomes. For qualitative studies, peer-reviewed studies focusing on the RTW experience of workers, employers, and other parties such as healthcare providers.

Quality Appraisal and Data Extraction: Conducted by pairs of reviewers.

Evidence Synthesis: Best Evidence Synthesis guidelines for the quantitative literature. Meta-ethnographic approach for the qualitative literature.

Results: Of the 4124 papers identified by the search, 11 quantitative studies and 13 qualitative studies met our a priori relevance and quality appraisal criteria. From the quantitative studies, there was moderate evidence that the following intervention components reduce work disability duration: Early contact with worker, work accommodation offer, contact between healthcare provider and workplace, ergonomic work-site visits, presence of RTW coordinator, and presence of labour-management cooperation. There was mixed evidence for those components to have a positive impact on quality of life. From the qualitative literature, the evidence supported that the needs of all parties involved in RTW require sensitive coordination in a climate of goodwill and mutual confidence. The critical roles of supervisors in planning of work accommodations, and of occupational health providers in bridging the gap between the healthcare system and the workplace, were highlighted. The literature suggests that it is not only what is done in RTW interventions which is important, but in what organizational climate. The findings have implications for policy-makers, employers, and practitioners regarding optimal RTW.

Researchers: Renée-Louise Franche (Institute Coordinator), Judy Clarke, Kim Cullen, Donald Cole, John Frank, Jaime Guzman, Sheilah Hogg-Johnson, Emma Irvin, Ellen MacEachen, Quenby Mahood, Cameron Mustard, Vicki Pennick, Anusha Raj, Rhoda Reardon, Sandra Sinclair, Dwayne Van Eerd

Presentations:

Franché R-L, Cullen KL, Clarke J, MacEachen E, Frank JW, Sinclair S, and the Workplace-based return-to-work intervention literature review group. IWH Plenary: Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 11 Jan 2005.

Franché R-L, Cullen KL, Clarke J, MacEachen E, Frank JW, Sinclair S and the Workplace-based Return-to-Work Intervention Literature Review Group. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 23 Feb 2005; Toronto, ON: GTA Rehab Network, Best Practices Day.

Cullen KL, Franché R-L, Clarke J, MacEachen E, Frank JW, Sinclair S and the IWH Workplace-based Return-to-Work Intervention Literature Review Group. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 23 March 2005; North York, ON: Canadian Association of Rehabilitation Professionals (CARP), York University.

Franché R-L, MacEachen E, Cullen KL, Clarke J, Frank JW, Sinclair S, and the IWH Workplace-based Return-to-Work Intervention Literature Review Group. Workplace-based return-to-work interventions: A systematic review of literature and future directions for research. 24 March 2005; Toronto, ON: WSIB RAC.

Franché R-L, Cullen KL, Tompa E, Reardon R, Irvin E, Cole DC, Clarke J, Gibson J, McLeod C, MacEachen E, Rivilis I, Trevithick S, Van Eerd D. Symposium on Non-Cochrane systematic literature reviews: Methodological advances, knowledge exchange, policy implications, and main findings of three reviews in occupational health. 16-17 May 2005; Vancouver, BC: Canadian Association for Research on Work and Health (CARWH) Bi-Annual Symposium.

Franché R-L, Cullen KL, Clarke J, MacEachen E, Frank JW, Sinclair S. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 16-17 May 2005; Vancouver, BC: Canadian Association for Research on Work and Health (CARWH) Bi-Annual Symposium.

Franché R-L, Guzman J, Tompa E. Issues and interventions in return to work: An overview of current evidence. 17 Aug 2005; Toronto, ON: WSIB Roundtable on Return to Work and Labour Market Re-entry.

Publications:

Franché R-L, Cullen K, Clarke J, Irvin E, Sinclair S, Frank JW and the IWH Workplace-based RTW Intervention Literature Review Research Team. Workplace-based return-to-work interventions: A systematic review of the quantitative literature. *J Occup Rehabil* 2005; 15 (4):607-631.

Cullen KL, Franché R-L, Clarke J, Irvin E, and the IWH Workplace-based RTW Intervention Literature Review Research Team. The role of organizational factors in workplace-based return-to-work interventions: a systematic review. Forthcoming: *Scan J Work, Environ Health* [IWH WP #296]

MacEachen E, Clarke J, Franché R-L, Irvin E. The process of return to work after injury: Findings of a systematic review of qualitative studies. Submitted: *Scand J Work Environ & Health*
MacEachen E, Clarke J, Franché R-L, Irvin E. A systematic review of qualitative studies on return to work. [IWH WP #299]

Determinants of Return to Work: Applying the Readiness for Change Model (341)

Project Status: Ongoing

Introduction: This prospective cohort study will follow a sample of 600 lost time claimants with work-related musculoskeletal disorders over a duration of twelve months, using telephone interviews. The study seeks to validate the conceptual framework of the Readiness for Change Model to the return-to-work (RTW) process. The Readiness for Change model proposes five stages of readiness for engaging in and maintaining behavior change: Precontemplation, Contemplation, Preparation for Action, Action, Maintenance. The model has received strong empirical validation with respect to health risk behaviours, however its application to RTW is new.

Objectives:

- ▶ Expand the concurrent/predictive construct validity of the Readiness model for RTW after an episode of lost-time work disability in a cohort of injured workers with work-related musculoskeletal conditions relative to a) determinant factors of RTW b) healthy and sustainable RTW outcomes.
- ▶ Identify critical workplace, insurer, healthcare provider and individual factors contributing to healthy and sustainable RTW process.
- ▶ Provide descriptive information regarding the RTW trajectory and outcome one year post-injury of a representative sample of injured workers with work-related musculoskeletal disorders.

Research Lead: Renée-Louise Franche

Effects of Return-to-Work on Health-Related Quality of Life in HIV/AIDS (756)

Project Status: Ongoing

Introduction: The use of highly active antiretroviral therapies for HIV disease has resulted in dramatic increases in life expectancy and declines in morbidity. People living with HIV/AIDS are now considering the possibility of going back to work. The main objective of this study is to understand the effect of returning to work on the health-related quality of life of people with HIV/AIDS who are currently on disability.

Objectives:

- ▶ The primary objective of this study is to determine whether return-to-work improves health-related quality of life among persons with HIV/AIDS who are currently on disability and participating in an employment program.
- ▶ The secondary objective is to determine predictors of return-to-work in this population.

Research Lead: Cameron Mustard

Training Initiatives In Work Disability Prevention (144)

Project Status: Ongoing

Introduction: The Institute for Work & Health is a leading institution recognized internationally for its expertise in evidence-based practice, measurement research and work disability prevention. The Institute has received increasing requests to share its expertise and to contribute to the education and training of educators, clinicians and future researchers. Several IWH scientists are involved with this CIHR funded initiative along with Patrick Liosel, University of Sherbrooke who is the lead investigator for the Work Disability Prevention (WDP) Program, 24 key mentors from nine Canadian universities, including IWH researchers, have been identified. The program is superimposed on a specific recognized PhD or post-doctoral program from a Canadian university or the equivalent from a recognized foreign university. The program is offered over a three year period. Three main types of education experiences are implemented: 1) summer session including problem-solving learning modules and invited speakers, 2) visiting training practicum at various Canadian sites 3) e-learning. The trainee's own disciplinary experience and research project is used to contribute to the group's transdisciplinary experience. The program also adds to the development of the trainees' on-going research project by anchoring it in a transdisciplinary context.

Objectives:

- ▶ To influence the next generation of health-care professionals and research trainees by participating in the development and execution of various training initiatives.

Research Lead: Renée-Louise Franche

Mental Health Disorder, Treatment and Work Disability in the NPHS (560)

Project Status: Ongoing

Introduction: Substantial attention has been given to estimating the prevalence and consequences of mental illness. A recent study by Health Canada estimates that the economic burden of mental disorders was \$7.8 billion in 1993. There are two questions regarding mental health in the workplace that can be addressed through analysis of the National Population Health Survey. First, does depression treatment reduce work disability? To date, information on the impact of depression treatment on work disability has been obtained from randomized clinical trials. These studies provide evidence that timely and appropriate clinical care can reduce work role disability associated with mental disorders. However, the generalizability of these findings to the general population in natural settings remains to be determined. Second, what are the employment and earnings costs of mental disorders? In the U.S. 5-6 million workers lose, fail to seek, or cannot find employment as a consequence of mental illness. Among those who do work, it is estimated that mental illness decreased annual income by about \$3500 to \$6000.

Objectives:

- ▶ To estimate the effectiveness of depression treatment in reducing work disability.

Research Lead: William Gnam

The Economic Costs of Mental Disorders, Alcohol and Illicit Drugs in Ontario: A Cost-of-Illness and Microsimulation Study (231)

Project Status: Ongoing

Introduction: In the interest of providing cost-effective health care that improves the health of injured workers, workers' compensation systems across North America are placing increasing emphasis on treatment quality and outcomes. The study will make an initial but important step towards improving the health service delivery and mental health of injured workers. It represents the first systematic Canadian profile of the mental health and related service utilization of an entire workers' compensation population. Investigators at the Centre for Addiction and Mental Health and the Institute for Work & Health have sampled and linked administrative data on a large cohort of approximately 110,000 workers' compensation claimants in British Columbia together with an age and sex matched comparison population. A person-specific longitudinal database (spanning 1990-2000) has been constructed which will facilitate the understanding of the pre-injury and post-injury mental health and related substance use of compensation claimants.

Objectives:

- ▶ To profile the mental health and related utilization of injured workers along several dimensions, including psychiatric hospitalization, substance disorder treatment, the use of general medical and specialty mental health physician services, and diagnostic information.
- ▶ To model the patterns and intensity of mental health services as predictors for two outcomes: the duration of a claim, and the probability of having a repeat claim.

Research Lead: William Gnam

KTE in Health Services Research Program

Introduction: Knowledge transfer and exchange activities linked to the Health Services Research Program have focused in two areas:

Return to Work

Prevention of work disability: The RTW Systematic Review focused on understanding the effectiveness of workplace interventions outcomes. The findings combined with other research knowledge, were to create the “Seven Principles for Successful RTW” which created messages for target audiences (workplace parties, WSIB, clinical care providers and disability managers in the RTW continuum). WSIB has now defined their RTW priority project for them over the next five years. IWH is positioned well to support one of our key stakeholders in this work.

Objectives:

- ▶ Deliver consistent RTW evidenced-based messages to the parties engaged in RTW. Partner with WSIB as they develop their RTW strategy and describe the additional workplace connectors (parties who visit or work in workplaces) who can integrate these messages into policies, programs and practices.
- ▶ Promote networking and tool/resource sharing across the workplace connectors.
- ▶ Create a new KTE tool kit for RTW parties.

Messages: Seven ‘Principles’ for Successful Return to Work

1. The workplace has a strong commitment to health and safety which is demonstrated by the behaviours of the workplace parties.
2. The employer makes an offer of modified work (also known as work accommodation) to injured/ill workers so they can return as early as feasible to work activities suitable to their temporary abilities.
3. RTW planners ensure that the plan supports the returning worker without disadvantaging co-workers and supervisors.
4. Supervisors are trained and included in RTW planning.
5. The employer makes an early and considerate contact with injured/ill workers.
6. Someone has the responsibility to coordinate RTW.
7. Employers and health care providers exchange information with each other as needed.

Stakeholder Involvement: WSIB (RTW/LMR Branch), WSIB Service Delivery Teams; Health Care Providers who treat injured workers; HSAs; SCIP; Safety Groups; Disability Managers; WSIB Specialty Programs; Organized Labour.

Summary of Accomplishments:

Created evidence-based messages: Seven principles of RTW

Bringing the Partners Together:

- ▶ provided liaison between WSIB and IWH researchers
- ▶ developed understanding of WSIB RTW Strategy

Developing the KTE Strategy:

- ▶ developed a joint project (logic model) with WSIB to transfer messages to multiple audiences
- ▶ integrated the RTW messages with the physician EI project with GAC

Beginning the Transfer and Exchange:

- ▶ assisted WSIB partners to work through who are the workplace connectors.
- ▶ WSIB delivery of regional workshops postponed.
- ▶ series of regional workshops completed with physician EIs

Next Steps: Ongoing in 2006 as RTW continues a key priority with WSIB.

Team: Rhoda Reardon, Judy Clarke, Renée-Louise Franche, Project #142 Team, Kathy Knowles Chapeskie, Jane Brenneman Gibson, Kiera Keown, Melissa Cohen

Effective Treatment of MSDs (low back pain)

Effective Treatment of low back pain using networks of “educationally influential” (EIs) family physicians. IWH partnered with the Guidelines Advisory Committee, College of Physicians and Surgeons of Ontario, Ontario College of Family Physicians, University of Toronto Knowledge Translation Program to complete a series of regional workshops focused on the treatment of low back pain.

Objectives:

- ▶ Target family physicians using EI networks.
- ▶ Maintain partnerships with relevant professional bodies.
- ▶ Develop tools about effective treatment of LBP for physician workshops.
- ▶ Deliver messages on LBP and RTW to regional workshops with physician EIs.
- ▶ Work with Physio EIs on messages extraction and clinical practice notes from findings of systematic review on exercise and low back pain.

Stakeholder Involvement: GAC, regulatory colleges, professional associations, Clinical EI networks, family physicians, physiotherapists

Effective treatment of MSDs:

Production of new materials: Back Booklet: *So your back hurts... Learn what works, what doesn't and how to help yourself*, Red and yellow flags for GAC physician workshops

Completed six regional workshops with family physician EIs; including two conferences delivered by video conferencing to northern EI physicians.

Convened a teleconference with EI physiotherapists to provide input into Cochrane review on use of exercise.

Next Steps: Work with all EIs networks continues in 2006 for input to prevention and Cochrane systematic reviews as well as transfer of research evidence on MSDs and RTW.

Team: Rhoda Reardon, Judy Clarke, Renée-Louise Franche, Project #142 Team, Kathy Knowles Chapeskie, Jane Brenneman Gibson, Kiera Keown, Melissa Cohen

Data & Information Systems Program

Strong measurement methods and rigorous analytic approaches are central to excellence in research and to clarifying the nature of the relationship between exposures and outcomes in epidemiologic studies. A key foundation for the productivity of the Institute's research groups has been the expertise provided by its team of statisticians and programmer/analysts, as well as its data management capacity. Many aspects of the study of work and health present complex challenges for statistical analysis. For example, a typical disease course in work-related musculoskeletal disorders will display patterns of recurrence over time, requiring statistical methods that can accommodate temporal change in function. It is also frequently the case that factors influencing health and safety will act at multiple levels simultaneously: For example, the macroeconomic level, the level of the workplace and on the characteristics of individual workers. A family of statistical applications on the frontier of applied biostatistics, named multilevel modeling, is required to address this complexity.

The researchers in this program provide statistical consulting and information technology solutions to each of the other research programs. As such they are a repository of methodological expertise within the Institute. Their contributions to projects within other themes are noted there. In addition they take the lead in the exploration and development of methodologies and approaches to access, collect, analyze, interpret, protect and store data. This includes current WSIB administrative data necessary for ongoing research work and data from those systems no longer currently in widespread use at the WSIB. In 2005 these researchers have also taken the lead in reviewing and updating the Institutes policies around the access and collection of data and the protection of personal information gathered through or used in research including WSIB data. Much of this work has been undertaken in consultation with the WSIB Privacy Office.

The methodological expertise of these researchers and in particular their familiarity with and ability to access and interpret WSIB administrative data make this work of relevance to all those who need and want to access WSIB data in their research. Institute researchers have frequently been consulted on and have been the point of access to this data for other researchers funded by the WSIB Research Advisory Council peer review grants program.

Statistical Methods & Data Tools

In addition to the essentially support role, where the initiative for the research in question typically comes from a member of a theme in another Program, staff in this Program have a proactive research role by taking the lead in the exploration, development and implementation of methodologies and approaches to accessing, collecting, analyzing, interpreting, storing and maintaining the security of our data. This includes current WSIB administrative data necessary for ongoing research work and data from those systems no longer currently in widespread use at the WSIB. We continuously refine our capacity for on-line data collection and the development and maintenance of our repository of WSIB historical databases for research purposes. The projects detailed below are those led by staff in this program.

Project Titles:

Workplace Safety & Insurance Board Data Routine Statistics (845).....	121
WSIB Denominators (846).....	121
Data Dictionary (301).....	122
Keyword Project (311).....	123
Integrated Information Database (307)	123
Development of an Instrument Database and Questionnaire Design Tools (835)	124

Workplace Safety & Insurance Board Data Routine Statistics (845)

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:

- ▶ Continually develop and maintain expertise in the data holdings of the WSIB.
- ▶ Explore the potential of the drug benefits database (RxPlus) for research purposes.
- ▶ Aid Institute researchers by providing information on the data holdings and their potential use for research projects.
- ▶ Respond to ad hoc requests for data extractions required for project planning purposes, etc.

Research Lead: Marjan Vidmar

WSIB Denominators (846)

Project Status: Completed

Introduction: Workplace injury surveillance conducted by provincial workers' compensation authorities in Canada has a number of limitations: while time-loss injury claims contain information on the age and sex of the injured worker, the nature and cause of injury as well as the size of the firm and the industrial sector in which the firm is engaged, there is a lack of denominator information in compensation system sources at similar levels of stratification. To examine alternative sources of labour force denominator information, this project has obtained detailed labour force counts, adjusted for the coverage rates of the Ontario Workplace Safety and Insurance Board, from the Canadian Labour Force Survey and the Canadian Census. The labour force counts, stratified by age, sex and industry, have been tabulated for each of the two dominant occupational classification systems in use in Canada in the 1990s (SOC1980 and SOC1991). This alternate source of labour force counts has subsequently been applied in a wide range of research applications at the Institute for Work & Health.

Objectives:

- ▶ Apply the time series of labour force denominators developed in earlier phases of this project in applications to enhance the surveillance and monitoring of occupational injury and disease in Ontario.
- ▶ Support the development of similar denominator series for the provinces of British Columbia and Quebec.
- ▶ Supply the comparable denominator series in three provinces to cross-provincial comparison studies of the incidence of work-related injury and disease.

Methods: To examine alternate sources of labour force denominator information, this project has obtained detailed labour force counts, adjusted for the coverage rates of the Ontario Workplace Safety and Insurance Board, from the Canadian Labour Force Survey and the Canadian Census.

The labour force counts, stratified by age, sex and industry, have been tabulated for each of the two dominant occupational classification systems in use in Canada in the 1990s (SOC1980 and SOC1991). Time series have been developed for the period 1990 to 2002. This alternate source of labour force counts has subsequently been applied in a wide range of research applications at the Institute for Work & Health. This project was originally focused on the internal capacity of the Institute to provide accurate and timely descriptive statistics of the rates of time-loss injury in the Ontario labour force. In 2004, the directive of the AWCBC Chief Financial Officers to staff of the Ontario and the Quebec workers' compensation agencies indicates policy interest in the development of these methods.

Results: In May 2005, the IWH Project Team (C Mustard, P Smith, S Chan) delivered a completed report to the CSST. (AWCBC Lost-Time Injury Project, IWH Project 846). Results of this paper were presented at AWCBC meeting Oct 5, 2005 in Toronto. Discussions continue between IWH and IRSST to resolve outstanding occupational coding issues and denominator methodologies between the two provinces. There is still a possibility of a joint research paper describing the injury burden across industry and occupational groups between Ontario and Quebec although for the upcoming year this project has been given a low priority. At the conclusion of the AWCBC meeting, the WSIB has decided to proceed with using Statistics Canada's Survey of Employment and Payrolls and their premium payment reports to further refine their estimates of the covered workforce in Ontario. From a research perspective, this method is limited as the payroll reports from Statistics Canada and the WSIB do not record information on gender, age group or occupation. IWH will continue to utilize the Labour Force Survey for monitoring trends in lost-time injuries in the Ontario labour force with mandatory coverage (approximately 85% of the total covered workforce).

Researchers: Cameron Mustard (Institute Coordinator), Stella Chan, Sheilah Hogg-Johnson, Peter Smith

Data Dictionary (301)

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:

- ▶ Identify areas and subjects where specific researchers at the Institute may contribute information.
- ▶ Create a template for the presentation of information within the Data Dictionary.
- ▶ 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.

Research Lead: Sheilah Hogg-Johnson

Keyword Project (311)

Project Status: Ongoing

Introduction: The Keyword project is an attempt to create a common nomenclature for describing content of IWH research projects. This nomenclature would be used for a variety of projects including: the Web, Refman, Working Papers. It would be generated using MeSH vocabulary and tailored to suit our own needs.

Objectives:

- ▶ Identify a frequency of terms that are representative of our work at the IWH.
- ▶ The next step in the refinement of this initiative is to get a consensus agreement on the structure of the tree.
- ▶ Flush out the tree and develop layers which would be dependent on the various uses.
- ▶ Cross reference the tree structure.

Research Lead: Emma Irvin

Integrated Information Database (307)

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 which contained all of these information items, which could easily be manipulated to allow for customization, was proposed. The integrated information database was conceived as a tool which 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 will encompass all the elements of detailed project descriptions. The third phase will contain CV type information on Institute staff and affiliates.

Objectives:

- ▶ Develop an efficient computer based tool for collecting information on project and staff activity.
- ▶ Create a central electronic repository of all project related information.
- ▶ Improve the efficiency of project reporting.
- ▶ Improve the overall tracking and management of project activities and milestones.

Research Lead: Michael Swift

Development of an Instrument Database and Questionnaire Design Tools (835)

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.

Objectives:

- ▶ Develop multi-purpose data entry modules for the most commonly used questionnaire instruments at IWH.
- ▶ Develop tools for use in designing data entry by allowing research staff to copy the instruments to another database and giving them the ability to design additional questions using templates.

Research Lead: Michael Swift

Systematic Review Program

For a number of years the Institute for Work & Health has conducted systematic reviews of the literature on interventions for the treatment of work-related musculoskeletal disorders. Since 1996, the Institute has been the coordinating centre for the Cochrane Back Review Group, a part of the international Cochrane Collaboration. More recently the expertise in systematic reviewing that we have developed in the clinical field has been utilized more broadly to look at economic and other non-clinical aspects of occupational health and safety, especially regarding prevention. Our experience has already contributed to the development of methods for systematic reviewing. We offer training courses in reviewing and there are two IWH affiliated PhD students currently addressing methodological questions in the field. For the past two years we have also hosted a program of work sponsored by the WSIB to review specific topics in the prevention of workplace injury, illness and disability.

The Institute consolidated these various strands of activity into a single Program in September 2005. This Program builds on the knowledge gained to date. It links the Cochrane reviews, the WSIB preventive program, other groups of review topics, the training activity, and the methodological research. It provides central organization and will facilitate cross-disciplinary collaboration and utilization of systematic review methods across the whole range of the Institute's research.

The Systematic Review Program is an umbrella encompassing and supporting all types of reviews, Cochrane and non-Cochrane, and including those conducted as a prelude to doing a project. The nature of the support provided will vary with the type of review. Its resources will be available across the Institute for consultation, advice and support on all aspects of reviews - bibliographic search, article retrieval, quality appraisal and evidence synthesis. It will also conduct appropriate consultations about review topics with those stakeholder groups having a potential interest in acquiring synoptic accounts of research results. In consultation and dissemination the Program will work closely with KTE.

The Program has three elements: the review function, training, and methods development. Each of these is described briefly below.

1) *The Review Function*

The review function will itself have three components: Cochrane Reviews, Prevention Reviews and all Other IWH Reviews.

Cochrane Reviews

The Back Review Group within the Cochrane Collaboration has its administrative home at IWH. This will continue. An Institute Senior Scientist will continue as a member of the (external) Cochrane Editorial Board, and IWH will continue to provide coordinating and administrative support for the preparation, maintenance, and dissemination of reviews from this Group. Its work will continue to focus on the effectiveness of clinical interventions for the management of spinal disorders. Researchers and other staff within this Group will contribute expertise to the Training and Methods elements described below as well as sharing their experience with staff engaged on the Prevention and the Other Reviews.

Prevention Reviews

In March 2004, the WSIB gave financial support to the Institute for the inaugural year of a four-year pilot initiative in systematic reviews of the effectiveness of interventions to prevent workplace injury, illness and disability. The initiative was undertaken in response to a concern often raised by non-research partners in the prevention system that there was limited accessible evidence about the effectiveness of interventions for protecting workers' health. Even when adequate evidence existed, it was felt to be difficult to understand and not always presented in language or a format suited to non-scientific audiences. With the establishment of this pilot program the Institute plans to address some of these needs. The major responsibilities to which the pilot commits us are to identify topics of relevance through a broad prevention stakeholder consultation process and to conduct and disseminate reviews on an annual basis.

The Prevention Reviews element of the Program will also include secondary reviews – that is, summaries of reviews done elsewhere and reviews of reviews.

Other IWH Reviews

The third element of the review functions embraces all the remaining reviews undertaken within IWH. This includes both systematic and other less systematic types of reviews on topics beyond clinical interventions for spinal disorders or outside of the scope of the work of the Prevention Reviews group. This may include student thesis reviews and preliminary work undertaken in the preparation, for example, of a grant or in the early stages of a project.

The Other IWH Reviews element of the Program, as with Prevention Reviews, will also include secondary reviews – that is, summaries of reviews done elsewhere and reviews of reviews.

2) Education

The Institute has considerable expertise in conducting systematic reviews to support evidence-based decision making. Many of its researchers and students are involved with Cochrane Collaboration Reviews and are first or co-authors on Cochrane and non-Cochrane reviews. The Institute is frequently asked to share its expertise and to contribute to the education and training of clinicians, future researchers, educators and policy makers.

3) Methodological Development

The third element of the Program will be the development of new and advanced methodologies in systematic reviewing. Thus, in the hierarchy of the quality of clinical evidence, observational studies have been typically rated low in comparison to RCTs. However RCTs may not always be feasible, particularly with non-clinical interventions. Observational studies add to the evidence by assessing whether efficacy under controlled conditions translates into effectiveness in the real world. However, there is little guidance on how to incorporate this evidence into systematic and other reviews. This is but one of the many areas where research into the methodology of conducting reviews of the effectiveness of work-related interventions is needed. Program researchers will be encouraged to identify and examine methodological issues as they arise and to develop new solutions. We hope to organize an international methods workshop to tackle the principal issues comprehensively and authoritatively.

Education & Methodological Development

The Institute has considerable expertise in conducting systematic reviews to support evidence-based decision making. Many of its researchers and students are involved with Cochrane Collaboration Reviews and are first or co-authors on Cochrane and non-Cochrane reviews. The Institute is frequently asked to share its expertise and to contribute to the education and training of clinicians, future researchers, educators and policy makers. Training in systematic review methods for internal staff, research trainees and external audiences is coordinated within the Systematic Review Program. This includes holding SR workshops on a regular basis, which employ our systematic review specialists, colleagues from the Cochrane Group and others as experience is accumulated over time.

We also are developing new and advanced methodologies in systematic reviewing. Thus, in the hierarchy of the quality of clinical evidence, observational studies have been typically rated low in comparison to RCTs. However RCTs may not always be feasible, particularly with non-clinical interventions. Observational studies add to the evidence by assessing whether efficacy under controlled conditions translates into effectiveness in the real world. However, there is little guidance on how to incorporate this evidence into systematic and other reviews. This is but one of the many areas where research into the methodology of conducting reviews of the effectiveness of work-related interventions is needed.

Here we describe the projects we are currently undertaking in the Education and Methodological Development themes. All systematic reviews, Cochrane, Prevention and others are described within the theme most relevant to their content area.

Project Titles:

Systematic Review Workshop (114).....	128
Methodological Developments in Systematic Reviews (135).....	128

Systematic Review Workshop (114)

Project Status: Ongoing

Introduction: The Institute for Work & Health has considerable expertise in conducting systematic reviews to support evidence-based practice. Many researchers and students at the Institute are involved with the Cochrane Collaboration and are first or co-author of Cochrane and non-Cochrane reviews. The Institute has many requests to share its expertise and to contribute to the education and training of educators, clinicians and future researchers. Institute personnel and colleagues have been offering two-day Systematic Review Workshops since March 2001 with plans to continue on a semi-annual basis.

Objectives:

- ▶ To provide workshops that teach participants to plan, conduct and communicate the results of systematic reviews.

Research Lead: Emma Irvin

Methodological Developments in Systematic Reviews (135)

Project Status: Ongoing

Introduction: In the hierarchy of the quality of evidence on the effects of health care interventions, observational studies are rated low compared to randomized controlled trials (RCTs). Although RCTs are ideal for assessing the relative efficacy of an intervention, they are not always feasible, and when they are, they are very expensive. Observational studies add to the evidence by assessing whether efficacy under controlled conditions translates into effectiveness in the real world. Currently, there is no guidance on how to incorporate this type of evidence into systematic and other literature reviews. The Cochrane Collaboration Non-randomized Studies Methods Group (NRSMSG) was registered in 1999 to develop methods to incorporate evidence from non-RCTs into Cochrane reviews, but their work is still developmental. This project is divided in three phases with a total duration of four years. Phase I involves the development of a database of observational studies of interventions for back pain. Phase II involves a critical assessment of the observational studies and comparison of these studies with randomized controlled trials of the same interventions. Phase III involves will involve the development of a set of criteria to allow observational studies to be used as valuable evidence when assessing effectiveness of interventions.

Objectives:

- ▶ To develop the minimum number of criteria that will reliably classify observational studies (cohorts and case-controls) as valid evidence of efficacy or effectiveness.

Research Lead: Andrea Furlan (PhD Candidate)

Chief Scientist's Supplementary Program of Research

The Dictionary of Health Economics

This four-year work was completed in early 2005 and the book was published.

Deliberative Processes in Health Care

This is an on-going program, in part jointly with Jonathan Lomas at CHSRF, concerned with the theory of such processes and the way they have been developed in NICE - the National Institute for Health and Clinical Excellence (England & Wales).

Welfare Economics and Economic Evaluation

This is an ongoing program of work mostly developing his idea of “extra-welfarism”, which has received some attention (and some misunderstanding) in the literature. This is a view of normative economics, especially in its applied forms as cost-effectiveness analysis and related techniques, that extends it beyond the usual and over-restrictive domains of utilities and goods.

Issues related to equity in health care finance and distribution

This is a long-standing program dating from the early 1970s and consists of a series of theoretical and empirical studies in health and health care on the horizontal and vertical equity of payment and delivery systems and the relationship between equity and efficiency.

Miscellaneous

These are items of work representing wrap-ups of past projects. There is on-going research with colleagues at ICES (an analysis of public participation in decision making in Ontario), the completion of a conceptual and empirical study of the social costs of substance misuse in the UK, and a four-volume library of reprinted articles on health economics due out with Routledge in 2006.

Publications and presentations arising from this portfolio are noted in the Activity section of this report.

Knowledge Transfer & Exchange

Overview

The overall goal of Knowledge Transfer and Exchange (KTE) at the Institute is to make research evidence available, understandable and usable for decision-making, program planning and practice in order to promote, protect and improve the health of working people. Enhancing the visibility of the Institute to raise awareness of the Institute as a resource of research evidence is part of this overall goal.

In this year's report we have integrated some of the KTE accomplishments with the relevant research programs making it easier for the reader to see these links. The remaining accomplishment summaries are found in this section of the report:

The summaries fall into three categories:

1. **Build stakeholder/audience relationships** to enhance the applicability and uptake of IWH research. KTE continues to create new relationship pathways/networks with stakeholders that allow us to link with these groups over time with different research messages and to provide audience intelligence back to IWH to shape its research agenda. KTE also provided support to the new Systematic Review Program engaging stakeholders early in the review process and transferring the reviews' messages.
2. **Build capacity** both of stakeholder/audiences to understand and make use of research and of the KTE program to enable it to continue to improve its effectiveness. The accomplishments are divided into two sections a) Building stakeholder capacity and b) Building KTE Capacity.
3. **Support the Institute through effective corporate communication** strategies. This goal continued to focus on increasing the Institute's visibility through communications and marketing. The Website continued as a major source of outreach along with the publication of our quarterly newsletters.

Project Title: Building Clinical Networks

Introduction: There is a range of providers who practise outside the more traditional clinical settings and focus on the work/health interface. Disciplines in this group include (but are not limited to) occupational health nurses, occupational therapists, chiropractors, physiotherapists, kinesiologists and physicians. There are multiple research messages from IWH that are relevant and useful to these groups and, equally, there is a practice expertise and knowledge that these groups possess that is useful and relevant to focus IWH research and knowledge transfer activities. The goal is systematically to identify those individuals across the province within each discipline, who are “Educationally Influential (EI) Opinion Leaders”. A systematic process for identifying opinion leaders is employed (based on Hiss methodology). Once identified, the opinion leaders are convened to seek their cooperation in an ongoing role as “*knowledge broker*” to facilitate a two-way exchange: stakeholder information and opinion into IWH and research knowledge out to EI groups and, via EI groups, to their peers.

The work in 2005 has focused on building new networks with occupational therapist and chiropractor EIs.

Objectives:

- ▶ Consolidate partnership with College of Occupational Therapists (COTO) and Ontario Society of Occupational Therapists with agreement to identify the OT EI group.
- ▶ Use Hiss methodology to identify OT EIs
- ▶ Convene EI opinion leaders to gain their cooperation as knowledge brokers.
- ▶ Develop partnership with chiropractic regulatory college and professional association to identify DC EIs.
- ▶ Evaluate effectiveness of this mechanism for KTE.

Message: Multiple messages

Stakeholder Involvement: OT and DC clinicians who work on the health/work interface, specifically, Partners including College of Occupational Therapists of Ontario; Ontario Society of Occupational Therapists; Chiropractic College and Association.

Summary of Accomplishments:

- ▶ Initiated partnership around identification of Occupational Therapist EIs and provided KT input to the OT Work Practice Task Force
- ▶ OT E.I selection completed using Hiss methodology and inaugural OT event planned for 2006.
- ▶ DC EI selection process initiated with DC partners.

Team: Rhoda Reardon, *KTE Support* Jane Brenneman Gibson, Robin Kells, Melissa Cohen, Kathy Knowles Chapeskie, Keira Keown, Evelyne Michaels, *Research support* Jamie Guzman, Claire Bombardier Vicki Pennick, Kim Cullen, Dwayne Van Eerd, Carol Kennedy, Sandra Sinclair, Jill Hayden, Pierre Côté, Carlo Ammendolia, Vicki Pennick; *Survey design and data analysis support*, Sheilah Hogg-Johnson, Peter Subrata

Project Title: Workplace Parties Network

Introduction: As workplace parties are priority audiences for IWH research evidence, KTE is building "relationship pathways" with parties that form "workplace connectors", those parties that interact directly with workplaces and in the course of their interaction impact the awareness, knowledge and behaviours about occupational health and safety.

Objectives:

- ▶ To build networks to facilitate the transfer and exchange of research information with:
- ▶ employer associations, labour, WSIB, ergonomists and consultants at the Health and Safety Associations, injured workers.
- ▶ To share the results of research.
- ▶ To involve stakeholders in the dissemination of the research messages.
- ▶ To provide feedback about stakeholder needs for the Institute's research agenda.
- ▶ To measure stakeholders' use the research.

Message: Multiple messages from workplace studies, RTW prevention systematic reviews.

Audiences: Employers and workers, union representatives, ergonomists, kinesologists, HSA consultants injured workers.

Summary of Accomplishments:

- ▶ Due to KTE staff vacancy in 2005 the work on this project continued to focus on building relationships pathways with HSAs using the HSA Liaison Committee and attending meetings with individual HSAs. (OSSA retreat research day)
- ▶ Completed consultation process on potential topics for 2006 prevention systematic reviews with the Business Council on Occupational Health and Safety (BCOHS), WSIB, HSAs, Ministry of Labour, Ontario Federation of Labour,(OFL), CCOHS, Canadian Manufactures and Exporters.

KTE also asked to serve on WSIB RAC Research Utilization Committee with a number of workplace representatives.

Team: Dee Kramer, Robin Kells, Jane Brennehan Gibson, Kiera Keown, Rhoda Reardon

A) Building Stakeholder Capacity

Introduction: Part of the KTE mandate is to build capacity in our audiences to increase their understanding and potential uses of research evidence. One approach has been to share research concepts with audiences so that there is a better understanding of the research process. It has also been important to understand the barriers that our audiences perceive in using research evidence in decision-making. A series of roundtables was completed in partnership with WSIB RAC to listen to what our target audiences had to tell us. KTE has continued to work with other research partners in Ontario, specifically the Centres of Research Expertise (CREs) funded by WSIB RAC on KTE strategies where our messages and audiences overlap.

Objectives:

- ▶ To enhance understanding of research concepts in our audiences.
- ▶ To begin to build a better blueprint for KTE through listening to our audiences
- ▶ To partner with other research organizations (CRE-MSD and CRE-OD) to assure our stakeholders that we are coordinating our KTE agendas and research messages.

Audiences: Prevention system partners (e.g., HSAs), workplace parties (employers and workers), labour, WSIB, Ministry of Labour, Ministry of Health and Long Term Care.

Summary of Accomplishments:

1. Research Conceptual building blocks column has proven to be a popular regular item in the IWH newsletter, At Work.
2. Roundtables: Partnering with WSIB RAC, the final two roundtables were held; one with organized labour and one with employers. The purpose of the roundtables was to understand how to build capacity in our audiences to use research evidence, better to support interactions between research producers and research users and to define roles and responsibilities. Executive summaries of the discussion have been completed following each roundtable and shared with the participants. The final report and recommendations will be ready for Q1 2006. Emerging themes include the growing demand for evidence by decision-makers but a frustration in finding relevant research, a need to understand how to get on the research agenda and how to link and sustain relationships between research producers and research users as well as how to build an evidence using culture in the decision-making of our audiences.
3. Development of KTE Hub: IWH, CRE-MSD and CRE-OD are working together to try to maximize our KTE capabilities. We have formed a KTE Hub which is a joint entity which allows us to plan and undertake joint KTE activities with our stakeholders. It also provides a coordinated venue for stakeholders for the development of the research agendas and the sharing of research evidence. The Hub is still at the planning stage but expects to undertake a number of joint activities in 2006.

Team: Jane Brenneman Gibson, Kathy Knowles Chapeskie, Evelyne Michaels, R Wells, Dee Kramer (CRE-MSD) Linn Holness, Janet Brown (CRE-OD), Anthony Culyer, A Peters (WSIB)

B) Building KTE Capacity

Introduction: As part of the goal to build a strong and effective KTE program, KTE staff have continued to document our KTE methodology, receive input and advice from the KTE Advisory Committee (KTEAC) and HSA Liaison Committee and participate with other research organizations in developing a KTE Community of Practice network in Toronto. We have also looked for research partners who are interested in using us as subjects for their KTE research e.g., evaluating the EI networks.

Objectives:

- ▶ Build changes in the KTE program with advice from external (KTE Advisory Committee, Roundtables, HSA Liaison Committee) sources.
- ▶ Continue to develop the evaluation framework for individual projects and report on results.
- ▶ Develop KTE toolkit to assist with researchers and other research organizations with the "How To Do KTE".
- ▶ Work with KTE partners to explore a KTE community of practice network for Ontario.

Audience: KTE staff, KTEAC, IWH staff and executive; KTE researchers, other knowledge brokers

Summary of Accomplishments:

1. Building a stronger program: Message Inventory (in process) has been designed to ensure messages are shared across IWH. It is planned to go live in Q2 2006. KTEAC held a successful third meeting. Sonya Corkum chaired and two new members Judy Geary of WSIB and Peter Puxley of CPRN joined the committee. The committee was supportive of KTE in building relationship pathways like our educational influential clinician networks and the importance of sustaining these relationships. We were encouraged to continue to support a participatory research process with stakeholders to maximize the impact of KTE. It was recommended that we look at linking more with WSIB who have staff who visit workplaces every day. It was suggested that we have a closer look at how we can use our electronic environment and we are doing this with the products from the systematic review process.

2. KTE Community of Practice: A grant (\$7000) was awarded to IWH, Hospital for Sick Children, (HSC), Centre for Addiction and Mental Health (CAMH), Centre for Health Economics and Policy Analysis (CHEPA) to develop a workshop bringing together KTE practitioners to discuss a community of practice concept. The workshop was held in January 2005. A report was produced summarizing the day and a working committee was formed to implement the KTE Community of Practice (COP). The working committee met 4 times and the first meeting of the COP was held on February 16, 2006. Both KTE researchers and practitioners have been invited to participate.

3. Sharing our KTE knowledge and experience with other organizations: The IWH KTE model and strategies have proven to be of interest to other research organizations. KTE staff have been invited to provide workshops about the model to other research organizations. Cancer Care Ontario invited KTE staff to develop and deliver a full day workshop for the recipients of the Innovation Fund grants. The Alberta Physiotherapy Association invited KTE to assist them to develop a network of educationally influential physiotherapists based on the work that Rhoda Reardon has done at IWH. Both of these opportunities were revenue generating for IWH.

4. We were less successful in finding KTE researchers who were interested in using IWH KTE as subjects for their research, specifically the EI networks. We approached a number of researchers all of whom thought it was an excellent opportunity but none of whom were able to proceed to the study stage.

Team: KTE staff

Communications:

Introduction: The Institute's **Communications** group is nested within the Knowledge Transfer & Exchange department and supports both the activities of the department and the corporate needs of the IWH. The communications group is responsible for the development and production of corporate newsletters, the IWH web site, marketing of products, media relations activities, special events and tool development. In addition, internal communications is also supported by the group through a weekly e-newsletter for staff and an intranet (IWH *innie*).

Objectives:

- ▶ Improve the accessibility, readability, quality and branding consistency of IWH communications and products;
- ▶ Increase the Institute's profile;
- ▶ Communicate research knowledge and activities to the Institute's primary and secondary audiences;
- ▶ Improve internal communications;
- ▶ Track and compare communications statistics to inform future directions within the department and the Institute as a whole.

Audiences: All IWH external stakeholders and Institute staff

Summary of Accomplishments:

- ▶ Web sites—ongoing development of content on corporate sites; new Cochrane and DASH web sites developed and launched; completion of web site benchmarking survey which provided some useful information for team; built and launch Systematic Review section on the site to promote new program and products.
- ▶ Training sessions: New writing workshop piloted with five scientists at end of year with E. Michaels facilitating the session. Very positive response to workshop. Based on evaluation, the workshop will be offered twice in 2006. Training session on presentation skills also held.
- ▶ Events—successful Alf Nachevson Lecture; corporate booth at IAPA conference; profile for young workers message through Ontario NAOSH network activities (checklist); promotion and coordination for Population Health lecture series in collaboration with CIAR and University of Toronto Public Health Sciences.
- ▶ Media relations—five media releases issued in 2005. Highest profile to date achieved following release of Jill Hayden's work on exercise for back pain which garnered more than 100 hits generated including Globe and Mail and major TV stations in US. Media briefings on MSDs and young worker injuries developed and posted on the Internet.
- ▶ Publications—four issues of *At Work/Infocus* produced; *At Work/Infocus* redesigned and merged into one publication; introduced new column "What researchers mean by..."; e-list subscriptions have nearly doubled in past year and are now up to 789; 2003 annual report produced.
- ▶ Systematic reviews—general audience summaries produced for new systematic reviews; editing and production of reports according to corporate standards.
- ▶ Internal communications: *thisweek@IWH* published weekly. There has been positive response from staff. The *innie* (Intranet) was reviewed and updated based on staff survey feedback.
- ▶ Corporate Identity—training sessions on corporate templates held for staff.
- ▶ External requests—the department continues to handle requests for information and products. One of the top requests in 2005 continues to be the DASH and DASH-related products.
- ▶ Awareness/outreach activities—information packages developed and mailed to 100 top companies in Canada; Syme and Mustard Fellowship calls issued.

Team: Kathy Knowles Chapeskie, Melissa Cohen, Carol Holland, Reshma Mathur, Evelyne Michaels, Greer Palloo, Katherine Russo

Journal Articles: Peer Reviewed

Ammendolia C, Kerr MS, Bombardier C, and the Canadian Task Force for Preventive Health Care. The use of back belts for prevention of occupational low back pain: A systematic review. *J Manipulative Physiol Ther* 2005; 28(2):128-134. (Project 680: Adherence to LBP Guidelines)

Anderson-Peacock E, Blouin JS, Bryans R, Danis N, Furlan A, Marcoux H, Potter B, Ruegg R, Stein JG, White E, Chiropractic clinical practice guideline: evidence-based treatment of adult neck pain not due to whiplash. *J Can Chiropr Assoc* 2005; 49(3):158-209.

Anderson GM, Bronskill SE, Mustard CA, Culyer A, Alter DA, Manuel DG. Both clinical epidemiology and population health perspectives can define the role of health care in reducing health disparities. *J Clin Epidemiol* 2005; 58:757-762. (Project 476: Methods for Resource Allocation)

Beaton DE, Kennedy C and the Workplace Upper Extremity Group. Beyond return to work: Testing a measure of at-work disability. *Qual Life Res* 2005; 14(8):1869-1879. (Project 124: Classification Systems for Shoulder & Elbow and Project 117: Disability at Work-Persons with Arthritis)

Beaton DE, Wright JG, Katz JN and the Upper Extremity Collaborative Group. Development of the QuickDASH: Comparison of three item-reduction approaches. *J Bone Joint Surg Am* 2005; 87:1038-1046. (Project 425: DASH Instrument/DASH Manual) [IWH WP# 233]

Breslin FC, Adlaf EM. Part-time work and adolescent binge drinking: The moderating effect of family and community context. *J Stud Alcohol* 2005; 66:784-794. (Project 451: Work Injuries and Teens)

Breslin FC, Shannon HS. Injury prevention across work and other settings: Opportunities and challenges for collaboration in research and practice. *Scand J Work Environ Health* 2005; 31:401-403. (Project 451: Work Injuries and Teens) [IWH WP #289]

Breslin FC, Smith P. Age-related differences in work injuries: A multivariate, population-based study. *Am J Ind Med* 2005; 48:50-56. (Project 451: Work Injuries and Teens)

Cassidy JD, Côté P, Carroll LJ, Kristman V. The incidence and course of low back pain in the general population: A population-based cohort study. *Spine* 2005; 30: 2817-2823. (Project 826: Recovery from MSK)

Cole DC, Ibrahim S, Shannon HS. Predictors of work-related repetitive strain injuries in a population cohort. *Am Journal Public Health* 2005; 95:1233-1237. (Project 202: NPHS Longitudinal)

Côté P, Baldwin ML, Johnson WG. Early patterns of care for occupational back pain. *Spine* 2005; 30:581-587. (Project 555: ASU Healthy Back Study)

Côté P, Hogg-Johnson S, Cassidy D, Carroll LJ, Bombardier C, Frank JW. Initial patterns of clinical care and recovery from whiplash injuries: A population-based cohort study. *Arch Intern Med* 2005; 165:2257-2263. (Project 826: Recovery from MSK)

Culyer A. Involving stakeholders in healthcare decisions – the experience of the National Institute for Health and Clinical Excellence (NICE) in England and Wales. *Healthcare Quarterly* 2005; 8(3):56-60.

Day D, Furlan A, Irvin E, Bombardier C. Simplified search strategies were effective in identifying clinical trials of pharmaceuticals and physical modalities. *J Clin Epi* 2005; 58(9):874-881. (Project 440: Cochrane Back Group) [IWH WP# 259]

Franché R-L, Baril R, Shaw W, Pransky G, Nicholas M, Loisel P. Workplace-based return-to-work interventions: Optimizing the role of stakeholders in implementation and research. *J Occup Rehabil* 2005; 525-542. (Generic)

Franché R-L, Cullen K, Clarke J, Irvin E, Sinclair S, Frank JW and the IWH Workplace-based RTW Intervention Literature Review Research Team. Workplace-based return-to-work interventions: A systematic review of the quantitative literature. *J Occup Rehabil* 2005; 15 (4):607-631. (Project 142: RTW Lit Review)

Frank JW. Setting research priorities for arthritis: The environmental perspective. *J Rheumatol* 2005; 32 Suppl 72:58-61. (Generic)

Frank JW, Finegood D. Foreword from the Canadian Institutes of Health Research; in Vol. 96, Supplement 3: Understanding the forces that influence our eating habits – What we know and need to know. *Can J Pub Hlth* 2005; 96(Supplement 3):S5. (Generic)

Furlan AD, van Tulder M, Cherkin D, Tsukayama H, Lao L, Koes B, Berman B. Acupuncture and dry-needling for low back pain: an updated systematic review within the framework of the Cochrane collaboration. *Spine* 2005; 30:944-963. (Project 440: Cochrane Back Group)

Furlan AD, van Tulder MW, Cherkin DC, Lao L, Tsukayama H, Koes BW, Berman BM. Acupuncture and dry-needling for low-back pain. *The Cochrane Library Issue 1, 2005*. (Project 440: Cochrane Back Group)

Geldart S, Shannon HS, Lohfeld L. Have companies improved their health and safety approaches over the last decade? A longitudinal study. *Am J Ind Med* 2005; 47:227-236. (Generic)

Gordon DR, Ames GM, Yen IH, Gillen M, Aust B, Rugulies R, Frank JW, Blanc PD. Integrating qualitative research into occupational health: A case study among hospital workers. *J Occup Environ Med* 2005; 47:399-409.

Groll DL, To T, Bombardier C, Wright JG. The development of a co-morbidity index with physical function as the outcome. *J Clin Ep* 2005; 58:595-602. (Generic)

Hayden JA, Van Tulder MW, Malmivaara AV, Koes BW. Meta-analysis: Exercise therapy for non-specific lowback pain. *Ann Intern Med* 2005; 142:765-775. (Project 130: LBP Prognosis and 440 Cochrane)

Hayden JA, Van Tulder MW, Malmivaara AV, Koes BW. Exercise therapy for treatment of adult non-specific low back pain. *The Cochrane Database of Systematic Reviews* 2005, Issue 3. (Project 130: LBP Prognosis and 440 Cochrane)

Hayden JA, Van Tulder MW, Tomlinson G. Systematic review: Strategies for using exercise therapy to improve outcomes in chronic low back pain. *Ann Intern Med* 2005; 142:776-785. (Project 130: LBP Prognosis and 440 Cochrane)

Heymans MW, van Tulder MW, Esmail R, Bombardier C, Koes BW. Back schools for non-specific low back pain: A systematic review within the framework of the Cochrane Collaboration Back Review Group. *Spine* 2005; 30(19):2153-2163. (Project 440: Cochrane Back Group)

Jolles B, Buchbinder R, Beaton DE. A patient-specific index by any other name may be different: A comparison of nine patient-specific indices for use in persons with musculoskeletal disorders. *J Clin Epi* 2005; 58(8):791-801. (Generic)

Kerr MS, Laschinger HK, Almost J, Severin C, Shamian J, O'Brien-Pallas LL. Monitoring the health of nurses in Canada. *Can J Nurs Leadersh* 2005; 18(1):67-81. (Project 945: CHSRF Nurse Monitoring)

Kiefer L, Frank JW, and The Working Group. Fostering evidence-based decision-making in Canada: Examining the need for a Canadian population and public health evidence centre and research network. *Can J Pub Hlth* 2005; 96:11-140.

Kosny A. Women working in small workplaces. *Research Bulletin: Envisioning Healthy Living for Women* 2005; 4(2):6-10.

Kristman VL, Manno M, Côté P. Methods to account for attrition in longitudinal data: Do they correct for bias? A simulation study. *Eur J Epidemiol* 2005; 20:657-662. (Project 120: Cohort Methods) [IWH WP #180]

Laing AC, Frazer MB, Cole DC, Kerr MS, Wells RP, Norman RW. Study of the effectiveness of a participatory ergonomics intervention in reducing worker pain through physical exposure pathways. *Ergonomics* 2005; 48(2):150-170. (Project 730: Workplace Manufacturing Intervention)

Linton SJ, Gross D, Schultz IZ, Main C, Côté P, Pransky G, Johnson WG. Prognosis and the identification of workers risking disability. Research issues and directions for future research. *J Occup Rehabil* 2005; 15: 459-474 (Generic)

Lisi AJ, Holmes EJ, Ammendolia C. High velocity, low amplitude spinal manipulation for symptomatic lumbar disc disease: A systematic review of the literature. *J Manipulative Physiol Ther* 2005; 28(6):429-442. (Project 680: Adherence to LBP Guidelines)

Loisel P, Côté P, Durand MJ, Franche R-L, Sullivan MJL, Cole DC, and all other mentors of the program. Training the next generation of researchers in work disability prevention: The Canadian Work Disability Prevention CIHR Strategic Training Program. *J Occup Rehabil* 2005; 15(3): 273-281. (Project 144: Training Initiatives)

Lotters F, Hogg-Johnson S, Burdorf A. Health status, its perceptions, and effect on return to work and recurrent sick leave. *Spine* 2005; 30(9):1086-1092. (Project 144: Training Initiatives)

MacEachen E. The demise of repetitive strain injury in sceptical governing rationalities of workplace managers. *Sociol Health Illn* 2005; 27(4):490-514. (Generic)

Madlensky L, McLaughlin JR, Carroll JC, Goel V, Frank JW. Risks and benefits of population-based genetic testing for Mendelian subsets of common diseases were examined using the example of colorectal cancer risk. *J Clin Epidemiol* 2005; 58(9):934-941.

Manuel DG, Tanuseputro P, Mustard CA, Schultz SE, Anderson GM, Ardal S, Alter DA, Laupacis A. The 2003 Canadian recommendations for dyslipidemia management: *CMAJ* 2005; 172:1027-1031. (Project 476: Methods of Resource Allocation)

Martinussen R, Hayden JA, Hogg-Johnson S, Tannock R. A meta-analysis of working memory impairments in children with attention-deficit hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 2005; 44(4):377-384.

Mercado AC, Carroll L, Cassidy JD, Côté P. Passive coping as a risk factor for disabling neck or low back pain. *Pain* 2005; 117:51-57. (Project 826: Recovery from MSK)

Mustard CA, Kalcevich C, Frank JW, Boyle M. Childhood and early adult predictors of risk of incident back pain: Ontario Child Health Study 2001 follow-up. *Am J Epi* 2005; 162(8):779-786. (Project 755: Ontario Child Health Survey)

Pennick V. Aging workers: Their impact on the workplace. *J Ont Occup Health Nurses Assoc* 2005; 24(3): 15-17.

Polanyi MF, Cole DC, Ferrier SE, Facey M, & Worksite Upper Extremity Research Group. Paddling upstream: A contextual analysis of implementation of a workplace ergonomic policy at a large newspaper. *Applied Ergonomics* 2005; 36(2):231-239. (Project 430: TSSong)

Polyani MF, McIntosh T, Kosny A. Understanding and improving the health of workers in the new economy: A call for a participatory dialogue-based approach to work-health research. *Critical Public Health* 2005; 15(2):103-119. (Generic)

Robson L, Cole DC, Lemieux-Charles L, McGuire W, Sicotte C, Champagne F. Quality of working life indicators in Canadian healthcare organizations: A tool for healthy healthcare workplaces? *Occupational Medicine* 2005; 55(1):54-59. (CCHSA – Old Project)

Sandoval JA, Furlan AD, Mailis-Gagnon A. Oral methadone for chronic nonmalignant pain: A systematic literature review of reasons for administration, prescription patterns, effectiveness, and side effects. *Clin J Pain*; 2005 Nov/Dec; 21(6): 503-512.

Scott HK, Irvine J, Ritvo P, Mann RE. Can psychological interventions reduce mortality rates in patients with coronary heart disease and cancer? A Review of Randomized Trials. *International Journal of Mental Health and Addiction*, 2, 2, 13-24.

Smith PM, Frank JW. When aspirations and achievements don't meet. A longitudinal examination of the differential effect of education and occupational attainment on declines in self-rated health among Canadian labour force participants. *Int J Epidemiol* 2005; 34(4):827-834. (Project 448: Labour Market Trajectories)

Steele L, Glazier RH, Lin E, Austin PC, Mustard CA. Measuring the effect of a large reduction in welfare payments on mental health service use in welfare-dependent neighbourhoods. *Med Care* 2005; 43(9):855-891. (Generic)

Sung L, Hayden J, Greenberg ML, Koren G, Feldman BM, Tomlinson GA. Reporting of Bayesian analyses in clinical studies – The ROBUST criteria. *J Clin Epidemiol* 2005; 58(3):261-268.

Szende A, Culyer A. The inequity of informal payments for health care: the case of Hungary. *Health Policy* 2005; 75(3):262-271.

Tanuseputro P, Manuel DG, Schultz SE, Mustard CA. Improving population attributable fraction methods: Examining smoking attributable mortality for 87 geographic regions in Canada. *Am J Epi* 2005; 161:787-798. (Project 476: Methods of Resource Allocation)

Tubach F, Ravaud P, Baron G, Falissard B, Logeart I, Bellamy N, Bombardier C, Felson D, Hochberg M, van der Heijde D, Dougados M. Evaluation of clinically relevant changes in patient reported outcomes in knee and hip osteoarthritis: The minimal clinically important improvement. *Ann Rheum Dis* 2005; 64(1):29-33.

Tubach F, Ravaud P, Baron G, Falissard B, Logeart I, Bellamy N, Bombardier C, Felson D, Hochberg M, van der Heijde D, Dougados M. Evaluation of clinically relevant states in patient reported outcomes in knee and hip osteoarthritis: The patient acceptable symptom state. *Ann Rheum Dis* 2005; 64(1):34-37.

Wells GA, Boers M, Shea B, Bombardier C, et al. Minimal disease activity for rheumatoid arthritis: A preliminary definition. *J Rheumatol* 2005; 32(10):2016-2024. (Generic)

Williams RM, Westmorland MG, Shannon HS, Rasheed F, Amick B. Disability management practices in education, hotel/motel, and health care workplaces. *Am J Ind Med* 2005; 47(3):217-226. (Generic)

Yassi A, Moore D, Fitzgerald JM, Bigelow P, Yip-Hon C, Bryce E. The B.C. interdisciplinary respiratory protection study group. Research gaps in protecting healthcare workers from Sars and other respiratory pathogens: An interdisciplinary multi-stakeholder evidence-based approach. *Int J Occup Environ Health* 2005; 47(1):41-50. (Generic)

Zohar D, Tzischinski O, Epstein R, Lavie P. Effect of sleep adequacy on emotional reactions to work events: A cognitive-energy model. *Sleep* 2005; 28:47-54. (Generic)

Journal Articles Forthcoming or Submitted: Peer Reviewed

Alamgir H, Koehoorn M, Ostry A, Tompa E, Demers P. An evaluation of hospital discharge records as a tool for serious work-related injury surveillance. Forthcoming: *OEM* (Generic)

Alamgir H, Koehoorn M, Ostry A, Tompa E, Demers P. How many work-related injuries requiring hospitalization in British Columbia are claimed for workers' compensation? Submitted: *Am J Ind Med* (Generic)

Beaton DE, Bombardier C, Cole DC, Hogg-Johnson S, Van Eerd D, and the Clinical Expert Group: Pattern recognition approach to the development of a classification system for upper-limb musculoskeletal disorders in workers. Submitted: *Scand J Work, Environ Health* (Project 750: Upper Extremity Classification)

Beaton DE, Bombardier C, Cole DC, Hogg-Johnson S, Van Eerd D, and the Clinical Expert Group. Validity of a classification system for upper-limb musculoskeletal disorders in workers. Submitted: *Arthritis Care Res* (Project 750: Upper Extremity Classification)

Bogoch ER, Elliot-Gibson V, Beaton DE, Jamal SA, Josse RG, Murray TM. Effective initiation of osteoporosis diagnosis and treatment in fragility fracture patients in an orthopaedic environment. *J Bone Joint Surg*, in press (Generic)

Boyle M, Hong S, Georgiades K, Duku E, Racine Y, Mustard CA. Ontario Child Health Study follow-up 2001, Evaluation of sample loss. Submitted: *Child Development* (Project 755: Ontario Child Health Survey) [IWH WP #212]

Boyle M, Georgiades K, Racine Y, Mustard CA. Neighborhood and family influences on educational attainment: Results from Ontario Child Health Study follow-up 2001. Submitted: *Child Development* (Project 755: Ontario Child Health Survey) [IWH WP #306]

Breslin FC, Gnam W, Franche R-L, Mustard CA, Lin E. Depression and activity limitations: Examining the causation hypothesis and gender differences in the general population. Forthcoming: *Soc Psychiatry Psychiatr Epidemiol* (Project 560: Mental Health Treatment in the NPHS)

Breslin FC, Ibrahim S, Hepburn G, Cole DC. Understanding stability and change in psychological distress and sense of coherence: A four year prospective study. Forthcoming: *J Appl Psychol* (Project 560: Mental Health Treatment in the NPHS)

Breslin FC, Smith P, Koehoorn M, Lee H. Harmonizing claim rates across jurisdictions: A case study of lost time claims in Ontario and British Columbia. Submitted: *Scand J of Work, Environment and Health* (Project 408: Lost-time Claims Youth ON/BC. [IWH WP #312])

Breslin FC, Smith P, Mustard CA. Young people and work injuries: An examination of jurisdictional variation within Canada. Forthcoming: *Injury Prev* (Project 451: Work Injuries and Teens)

Breslin FC, Tompa E, Mustard CA, Zhao R, Hogg-Johnson S, Smith P. Trends in work-related disability: Do changes in workforce composition and job characteristics account for the decline? Submitted: *Am J Pub Health* (Project 408: Lost-time Claims in Youth ON/BC) [IWH WP #313]

Brewer S, Van Eerd D, Amick B, Irvin E, Daum K, Gerr F, Moore S, Cullen K, Rempel D. Workplace interventions to prevent musculoskeletal and visual symptoms and disorders among computer users: a systematic review. Submitted: *Am J Ind Med* (Project #970: SR – Computer Related Office Ergonomics)

Brouwer W, Culyer A, van Exel J, Rutten F. Welfarism vs Extra-welfarism. Submitted: *Journal of Health Economics*.

Brown J, Shannon HS, Mustard CA, McDonough P. Health care use before and after a workplace injury in British Columbia, Canada. Forthcoming: *Occupational & Environmental Medicine (Generic)* [IWH WP #297]

Buckeridge D, Switzer P, Owens DK, Frank JW, Musen MA. Detecting an anthrax attack – outbreak detection through syndromic surveillance compared to clinical case-finding. (Submitted, 2005)

Carroll LJ, Cassidy JD, Côté P. Depression is common after whiplash injury: The incidence, timing and course of depression after whiplash. Submitted: *Spine* (Project 826: Chronic MSK Cohort) [IWH WP #272]

Carroll LJ, Cassidy JD, Côté P. The role of pain coping strategies in prognosis after whiplash injury: Passive coping predicts slowed recovery. Submitted: *Pain* (Project 826: Recovery from MSK)

Cassidy JD, Carroll LJ, Côté P, Frank JW. Does rehabilitation benefit whiplash recovery? Submitted: *Spine* (Project 826: Recovery from MSK)

Claxton K, Culyer A. Wickedness or folly? The ethics of NICE's decisions. Submitted: *Journal of Medical Ethics*

Cole DC, Hogg-Johnson S, Manno M, Ibrahim S, Wells R, Ferrier S, and the Worksite Upper Extremity Research Group. Reducing musculoskeletal burden through ergonomic program implementation in a large newspaper. Submitted: *Int Arch Occup Environ Health* (Project 430: Star/SONG)

Cole DC, Van Eerd D, Bigelow P, Rivilis I. Integrative interventions for MSDs: Nature, evidence, challenges and directions. Submitted: *Am J Ind Med* (Project 216: WHIR) [IWH WP: 317]

Côté P, Baldwin ML, Johnson WG, Frank JW. The course of back pain in workers: Time to take another look beyond the first return-to-work. Submitted: *Pain* (Project 555: ASU Healthy Back Study) [IWH WP #302]

Cullen KL, Franche R-L, Clarke J, Irvin E, and the IWH Workplace-based RTW Intervention Literature Review Research Team. The role of organizational factors in workplace-based return-to-work interventions: a systematic review. Forthcoming: *Scan J Work, Environ Health* (Project 142: RTW Lit Review) [IWH WP #296]

Cullen KL, Williams RM, Shannon HS, Westmorland M, Amick BC. Workplace disability management practices in Ontario educational facilities. Forthcoming: *J Occup Rehabil* (Generic: MSc thesis)

Culyer A. The bogus conflict between efficiency and equity. *Health Economics* (under revision)

Culyer A. NICE's use of cost-effectiveness as an exemplar of a deliberative process. *Health Economics, Policy and Law* (under revision)

Culyer A, Lomas J. Deliberative processes and evidence-informed decision-making in health care – do they work and how might we know? Submitted: *Evidence and Policy* (Generic)

Culyer A, McCabe C, Briggs AH, Claxton K, Buxton M, Akehurst RL, Sculpher M, Brazier J. NICE as an ICER threshold-searcher: Rationale and implications. Submitted: *Journal of Health Services Research and Policy*. (Generic)

DeCicco J, Laschinger H, Kerr MS. Impact of perceived empowerment and respect on nurses organizational commitment in nursing home settings. Submitted: *J Gerontol Nurs* (Generic)

Di Ruggiero E, Zarowsky C, Frank JW, Mhatre S, Aslanyan G, Perry A, Previsich N. Coordinating Canada's research response to global health challenges: The global health research initiative. Forthcoming: *Can J Pub Hlth* 2006. (Generic)

Etches J, Mustard CA. Education and mortality in Canada: Mediation by behavioural and material factors. Submitted: *J Epidemiol Community Health* (Project 461: Mortality Follow-up) [IWH WP #278]

Etches J, Frank JW, Di Ruggiero E, Manuel D. Population health indicators – an historical overview. (Invited paper) Forthcoming: *Ann Rev Pub Health* (Generic)

Franché R-L, Pole J, Hogg-Johnson S, Vidmar M, Breslin C. The impact of work-related musculoskeletal disorders on workers' caregiving activities. Submitted: *Am J Ind Med* (Project 341: Readiness for RTW Cohort)

Franché R-L, Williams A, Ibrahim S, Grace SL, Mustard CA, Minore B, Stewart DE. Path analysis of work conditions, and work-family spillover as modifiable workplace factors associated with depressive symptomatology. Forthcoming: *Stress & Health* (Project 109: Multiple Role Strain) [IWH WP #229]

Frank JW, Cullen K, & IWH Ad Hoc Working Group. Preventing injury, illness and disability at work: A view from Canada. A discussion paper for the occupational health and safety community. Forthcoming: *Scand J Work Environ Health* (Project 116: Preventing Injury Paper) [IWH WP #294]

Furlan AD and Bombardier C. Search strategies of health care interventions can be limited to study design of non-randomized studies. Forthcoming: *J Clin Epi*

Furlan AD, Sandoval JA, Mailis-Gagnon A, Tunks E. Opioids for chronic non-cancer pain. A meta-analysis of effectiveness and side effects. Forthcoming: *CMAJ*

Gilkey DP, Keefe T, Bigelow P, Herron RE, Duvall K, Hautaluoma JE, Rosecrance JS, Sesek R. Ergonomic factors in low back pain among residential carpenters: Evaluation using OWAS and 2-D compression estimation. Submitted: *Appl Ergon* (Generic)

Griffith LE, Cole DC, Hogg-Johnson S, Shannon HS, Walter S, Wells R. Classifying low back pain: A proposal for four outcome types. Submitted: *Spine* (Project 223: Meta-analysis of Back Pain Etiology)

Hayden JA, Côté P, Bombardier C. Evaluation of the quality of prognosis studies in systematic reviews. Forthcoming: *Ann Intern Med* (Project 130: LBP Predictive Factors)

Kennedy CA, Haines T, Beaton DE. Predictive factors associated with patterns of response during physiotherapy for soft tissue disorders are identified. Forthcoming: *J Clin Epi* (Project 355: CPO)

Kennedy CA, Manno M, Hogg-Johnson S, Haines T, Hurley L, McKenzie D, Beaton DE. Prognosis in soft-tissue disorders of the shoulder: Predicting change in and level of disability after treatment. Forthcoming: Phys Ther (Project 355: CPO) [IWH WP #254]

Kennedy CA, Beaton DE. Outcomes and self-efficacy of workers presenting to occupational health unit with upper limb or lower back pain. Submitted: J Occup Rehab (Project 430: Star SONG)

Kennedy CA, Beaton DE, Shupak R, Lineker S, Badley E, Ross S. Integration of the readiness for change concept in preparing for a targeted educational program for patients with arthritis. Submitted: Arthritis Care Res

Kennedy CA, Haines T, Beaton DE. Predictors of disability in soft-tissue disorders of the shoulder: A comparison of prognostic models when the dependent outcome is formatted in three different ways. Submitted: Int J Rehab Res (Project 355: CPO) [IWH WP #257]

Koehoorn M, Breslin C. Self-reported work and work-related injuries among high school students in British Columbia. Forthcoming: JOEM (Project 234: BC High School Study)

Koehoorn M, Cole DC, Hertzman C, Lee H. Healthcare use associated with work-related musculoskeletal disorders among hospital workers. Submitted: J Occup Rehabil (Project 810: Health of Healthcare Workers)

Kosny A, Franche R-L, Pole J, Krause N, Côté P, Mustard CA. Early healthcare provider communication with patient and their workplace following a lost-time claim for an occupational musculoskeletal injury. Forthcoming: J Occup Rehabil (Project 340: RTW Cohort) [IWH WP #223]

Kosny, A. "Seven things you better know!" Governing youth risk at work. Forthcoming: Canadian Review of Social Policy.

Kramer DM, Wells RP. Achieving buy-in: Building networks to facilitate knowledge transfer. Forthcoming: Science Communication.

Li LC, Davis AM, Lineker S, Coyte PC, Bombardier C. Outcomes of home-based rehabilitation provided by primary therapists for patients with rheumatoid arthritis: A pilot study. Forthcoming: Arthritis Care Res.

Lipskie T, Breslin FC. A descriptive analysis of youth treated in emergency departments for work-related injuries. Forthcoming: Chronic Dis Can. (Generic)

Loisel, P, Durand, M-J, Franche R-L, Sullivan MJ, Côté P. L'enseignement transdisciplinaire d'une problématique multidimensionnelle: le diplôme de 3e cycle en prévention d'incapacité au travail. CIRET, in press.

Lotters F, Hogg-Johnson S, Burdorf A, Pole J, Franche R-L. The prognostic value of depressive symptoms, fear-avoidance, and self-efficacy for duration of lost-time benefits in workers with musculoskeletal disorders. Submitted: JOEM (Project 341: Readiness for RTW Cohort)

Luria G, Zohar D, Erev I. The effect of visibility on effectiveness of supervisory-based interventions. Submitted: Organizational Behavior and Human Decision Processes.

MacEachen E, Clarke J, Franche R-L, Irvin E. The process of return to work after injury: Findings of a systematic review of qualitative studies. Submitted: Scand J Work Environ & Health (Project 142: RTW Lit Review)

Manuel DG, Kwong K, Tanuseputro P, Lim J, Mustard CA, Anderson GM, Ardal S, Alter DA, Laupacis A. Which country's statin treatment guidelines avoid the most deaths? Forthcoming: CMAJ (Project 476: Methods for Resource Allocation)

Manuel DG, Mustard CA, Anderson GM, Kwong K, Tanuseputro P, Lim J, Alter DA, Laupacis A. Revisiting rose: Assessing population health and medical strategies. Forthcoming: BMJ.

Pole J, Franche R-L, Hogg-Johnson S, Krause N, Vidmar M. Duration of work disability: A comparison of self-report and administrative data. Forthcoming: Am J Ind Med (Project 340: RTW Cohort)

Rivlis I, Cole DC, Frazer MB, Kerr MS, Ibrahim S, Wells RP. Evaluating the effectiveness of a participatory ergonomic intervention aimed at improving musculoskeletal health. Submitted: Am J Ind Med (Project 730: Manufacturing Intervention)

Rivlis I, Van Eerd D, Cullen K, Cole DC, Irvin E, Tyson J, Mahood Q. Effectiveness of participatory ergonomics interventions: A systematic review. Submitted: Ergonomics (Project 950: SR - Participatory Ergonomics Effectiveness) [IWH WP #300]

Robson LS, Clarke JA, Cullen K, Bielecky A, Severin C, Bigelow PL, Irvin E, Culyer A, Mahood Q. The effectiveness of occupational health and safety management systems: a systematic review. Submitted: Safety Science (Project 215: SR: OH&S Management Systems)

Robson LS, Cole DC, Shannon HS, and the Healthy Workplace Group. Healthy workplace performance measurement. Submitted: Personnel Review (Project 565: Healthy Workplace Scorecard)

Scott-Marshall H, Tompa E, Trevithick S. The social patterning of underemployment and its health consequences. Submitted: Soc Sci & Med (Project 486: Contingent Work) [IWH WP #274]

Shannon HS, Ibrahim SA, Robson LS, Zarinpoush F. Changes in job stressors in the Canadian working population. Forthcoming: Can J Public Health (Project 566: Healthy Workplace-Stress Survey)

Snir R, Zohar D. Workaholism: Positive engagement or work addiction? Submitted: Academy of Management Journal.

Sung L, Beyene J, Hayden J, Nathan PC, Lange B, Buchanan G, Tomlinson GA. A Bayesian meta-analysis of prophylactic granulocyte colony-stimulating factor and granulocyte-macrophage colony-stimulating factor in children with cancer. Forthcoming: Am J Epidemiol (Generic)

Theberge N, Granow K, Cole DC, Laing A, and the Ergonomics Intervention Evaluation Research Group. Negotiating participation: Understanding the "how" in a workplace ergonomic change project. Forthcoming: Appl Ergon (Project 730: Manufacturing Intervention)

Tompa E, Dolinschi R, de Oliveira C. Practice and potential of economic evaluation of workplace-based interventions for occupational health and safety. Special issue of AJIM (Project 960: Economic Evaluation Systematic Review) [IWH WP #311]

Tompa E, Dolinschi R, Scott-Marshall H, Trevithick S, Bhattacharyya S. Work-related precariousness: Canadian trends and policy implications. Submitted: Canadian Public Policy. (Project 486: Contingent Work) [IWH WP #281]

Tompa E, Mustard C, Sinclair S. Evidence from Canada on the adequacy, equity and cost of two approaches to compensation for permanent impairment from work accidents. Submitted: ILRR (Project 406: WSIB lost time injuries) [IWH WP #210]

Tompa E, Mustard CA, Sinclair S. Permanent disability compensation: A review of the adequacy and equity of two approaches to benefits determination in Canada. Submitted: CPP (Project 406: WSIB Lost Time Injuries) [IWH WP #210]

Tompa E, Scott-Marshall H, Dolinschi R, Trevithick S, Bhattacharyya S. Precarious employment experiences and their health consequences: towards a theoretical framework. Forthcoming: *Work: A Journal of Prevention, Assessment and Rehabilitation*. (Project 486: Contingent Work) [IWH WP #232]

Tompa E, Scott-Marshall H, Trevithick S, Bhattacharyya S. Precarious employment and people with disabilities. Forthcoming. In: *Precarious employment: Understanding labour market insecurity in Canada*. Vosko LF, editor. Montreal, PQ: McGill University Press (Project 402: CURA – People with Disabilities)

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. Submitted: *Int Law Econ Rev* (Project 860: Disability Literature Review) [IWH WP #213]

van der Velde G, van Tulder M, Côté P, Hogg-Johnson S, Aker P, Cassidy JD. Are results of a systematic review of treatment effectiveness sensitive to review method used? A comparison of a Cochrane Back Review Group Guidelines' review and best-evidence synthesis. Submitted: *Spine* (Generic) [IWH WP #292]

Van Eerd D, Côté P, Beaton DE, Hogg-Johnson S, Vidmar M, Kristman V. Capturing cases in workers' compensation databases: The example of neck pain. Submitted: *Am J Ind Med* (Project 370: Occupational Neck Pain)

Williams A, Franche R-L, Ibrahim S, Mustard CA, Layton FR. Work-family spillover and sleep quality. Forthcoming: *J Occup Health Psychol* (Project 109: Multiple Role Strain) [IWH WP #276]

Zohar D. Ethical leadership in ordinary and extraordinary situations: A tale of two metaphores. Submitted: *Acad Manage Rev*

Zohar D, Erev I. A decision-making analysis of safety behavior: Why is it so difficult to maintain safety behavior at work. Forthcoming: *International Journal of Risk Assessment & Management* (Generic)

Zohar D, Luria G. A multi-level model of safety climate: Cross-level relationships between organization and group-level climates. Forthcoming: *J Appl Psychol* (Generic)

Letters to Editor & Commentaries

Ammendolia C. Letter to the Editor. Radiographic anomalies that may alter chiropractic intervention strategies in a New Zealand population. *J Manipul Physiol Ther* 2005; 28(5):375. (Project 680: Adherence to LBP Guidelines)

Smith PM, Frank JW. A response to Dr Michael Oakes: Advancing research into the SES mechanisms that affect health. Letter to the editor with additional analyses. *Int J Epidemiol* 2005; doi:10.1093/ije/dyi118. (non-refereed) *Int J Epidemiol*, in press. (Project 448: Labour Market Trajectories)

Contributions to Books

- Amick B, Mustard CA. Labour markets and health: a social epidemiological perspective. In: Work, Family, Health and Well-being. Bianchi SM, Casper LM, editors: Lawrence Erlbaum Associates 2005. p.413-433. (Project 444: Policy Taxonomy) [IWH WP #218]
- Clarke J, van Tulder, Furlan AD. The effectiveness of traction for low-back pain. In: Encyclopedic Reference of Pain. RF Schmidt RF, Willis WD, editors: Springer-Verlag, Berlin 2005.
- Culyer A. The Dictionary of Health Economics, Cheltenham: Edward Elgar 2005, p. xi4 + 390.
- Culyer A. Egészség-gazdaságtan, egészségügyi közgazdászok, és az egészségpolitikai döntéshozás politikája. (Health economics, health economists and then politics of policy making) . In: Medicina Könyvkiadó Rt, László Gulácsi, editor: Egészség-Gazdaságtan, Budapest: 2005, p.35-44.
- Frank JW, Lomax G, Baird P, Lock M. Genetics and the environment in human health: The need for a balanced approach. In: Healthier Societies: From Analysis to Action. Heymann SJ, Hertzman C, Barer M, Evans R, editors: Oxford University Press, 2005.
- Frank JW, Mustard C, Dunn J, Ross N, Alter D, Di Ruggiero E. Assessing and addressing health inequalities: The Canadian experience. In press, Oxford University Press, 2006, for new book by the U.K. Health Development Agency)
- Godfrey C, Parrott S, Eaton G, Culyer A, McDougall C. Can we model the impact of increased drug treatment expenditure on the U.K. drug market? In: Substance Use: Individual Behaviour, Social Interactions, Markets and Politics, Vol. 36 in Advances in Health Economics and Health Services Research. Lindgren B, Grossman M, editors: Amsterdam: Elsevier 2005, p.257-275.
- Hertzman C, Frank JW. Biological pathways linking the socioeconomic, psychosocial and developmental environments with health. In: Healthier Societies: From Analysis to Action. SJ Heymann SJ, Hertzman C, Barer M, Evans R, editors: Oxford University Press, 2005.
- Mustard CA, Sinclair S. Health care and workers' compensation. In: Roberts K, Burton J, editors. Workplace injuries and diseases: Prevention and compensation. Essays in honor of Terry Thomason. W.E. Upjohn Institute 2005. p.199-217. [IWH WP #261]
- Mustard CA, Lavis JN, Ostry A. New evidence and enhanced understandings: Labour market experiences and health. In: Creating healthier societies: From analysis to action. Heymann J, Hertzman C, Barer M, Evans R, editors: Oxford University Press 2005, p.421-495.
- Tompa E, Scott-Marshall H, Trevithick S, Bhattacharyya S. Precarious employment and people with disabilities. In: Precarious Employment: Understanding Labour Market Insecurity in Canada. Vosko LF, editor. McGill University Press, Montreal, Canada, 2006. Also Working Paper #240, "Precarious employment and people with disabilities", Toronto: Institute for Work & Health, 2004.

Contributions to Books: Forthcoming

- Cole DC, Rivilis I. Individual factors and musculoskeletal disorders: A framework for their consideration. In: The Occupational Ergonomics Handbook, 2nd Edition. Fundamentals and Assessment Tools for Occupational Ergonomics. Marras WS, Karwowski W, editors. Boca Raton, FL: CRC press.
- Côté P, Carroll L, Cassidy JD, Rezaei M, Kristman V, and the Scientific Secretariat of the 2000-2010 Bone and Joint Decade Task Force on Neck Pain and Associated Disorders. A review of the epidemiology of neck

pain in workers: Its prevalence, incidence and risk factors. In: *Musculoskeletal Disorders in the Workplace*. Nordin M, Anderson GJB, Pope M, editors. Mosby 2005. (Project 550: Neck Pain Task Force) [IWH WP #295]

Culyer A. Merit goods and the welfare economics of coercion. In: *Merit Goods: The Birth of a New Concept. The Unfinished Ethical Revolution in Economic Theory*. Ver Eecke W, editor. Purdue University Press, 2006. (Re-printed from *Public Finance*, 1971, 26(4), 546-572). Forthcoming.

Franche R-L, Frank JW, Krause N. Prediction of occupational disability: Models, factors and outcomes. Schultz, Gatchel R, editors. Forthcoming: Springer Publishers 2005.

Franche R-L, Krause N, Frank JW. Predictive factors and models of disability. In: *At Risk Claims: Prediction of Occupational Disability using a Biopsychosocial Approach*. Schultz IA, Gatchel RJ, editors. New York, NY: Plenum Publishers.

Franche R-L, Krause N. Readiness for return to work following injury or illness – Conceptualizing the interpersonal impact of health care, workplace, and insurance factors. In: *Handbook of Complex Occupational Disability Claims: Early Risk Identification, Intervention and Prevention*. Schultz IA, Gatchel RJ, editors. Springer Publishers. In press.

Frank JW, Dunn J, Mustard CA. Assessing and addressing health inequalities: The Canadian experience. In: *Health Disparities: International Research and Policy Examples*. Oxford University Press. In press (Project 476: Methods of Resource Allocation)

Guzman J. Physiotherapy and rehabilitation. In: *Textbook of rheumatology*. Alarcon Segovia D, Espinoza L, editors. Bogota, Colombia (Spanish)

Guzman J. Rehabilitation of patients with rheumatic diseases. In: *Textbook of Physical Medicine and Rehabilitation*. Braddom RL, editor. 3rd Edition. London: Elsevier.

Mustard C, Etches J, Tompa E. The effects of deficits in health status in childhood and adolescence on human capital development in early adulthood. In: *Towards an Integrated Approach to Human Capital Development*. Canadian Policy Research Networks, School of Policy Studies, Queen's University. (Project 438: Human Capital Development)

Smith PM, Frank JW. The changing nature of work. What do the trends over time tell us? In: *The Way We Work and Its Impact on our Health*. Schnall P, Kendrick K, Jauregui M, editors. Submitted (Generic)

Van Tulder MW, Furlan AD, Gagnier J. CAM therapies for non-specific low back pain. *Ballieres Clinical Rheumatology*.

Abstracts

Beaton DE, Govinda Raj A, Hogg-Johnson S, Richards RR. Predictive validity of an aggregate measure of pain and function in workers with compensated, musculoskeletal disorders of the shoulder and elbow. *J Arth & Rheum* 2005; 52(9): S659-660. (Project 124: Classification Systems for Shoulder and Elbow)

Beaton DE, Van Eerd D, Govinda Raj A, Mazumder A, Smith P, van der Velde G, Cullen K. Sensitivity and specificity of various approaches to determining a threshold for responder analysis. *Oct 2005*; San Francisco, CA: Society for Medical Decision Making (SMDM). (Project 925: Measurement Methods)

Beaton DE, Solway, S Pitts S, Richards RR. A comparison of four measures of at-work disabilities in workers attending the WSIB Shoulder and Elbow Specialty Clinic. *May 2005*; Vancouver, BC: Canadian

Association of Occupational Therapists (CAOT) conference. (Project 124: Classification Systems for Shoulder and Elbow)

Beaton DE, Solway S, Pitts S, Richards RR. A comparison of four measures of at-work disabilities in workers attending the WSIB Shoulder and Elbow Specialty Clinic. June 2005; Montreal, Quebec: Canadian Orthopaedic Association (COA) conference. (Project 124: Classification Systems for Shoulder and Elbow)

Cole DC, Koehoorn M, Ibrahim S, Hertzman C, Ostry A, Xu F, Holmes P. Factors associated with musculoskeletal outcomes among health care workers – a multilevel analysis. *Am J Epidemiology* 2005;161(Suppl): S85 (Project 810: Health of Health Care Workers)

Côté P, Ibrahim S, Carroll L, Cassidy JD, Beaton DE, Kristman V, Hogg-Johnson S. The relationship between impairment, activity limitations and recovery from traffic-related musculoskeletal injuries. 27-30 June 2005; Toronto, ON: Joint Meeting of the Society for Epidemiologic Research and the Canadian Society for Epidemiology and Biostatistics. *Am Journal Epidemiology* 161(Suppl): 258. (Project 826: Recovery from MSK)

Dixon S, Theberge N, Cole DC. The ergonomist has left the building: Sustaining a participatory ergonomic program. 15-18 August, 2005; Halifax, NS: Association of Canadian Ergonomists Conference.

Dixon S, Theberge N, Cole DC. We get things done because of the health and safety manager. Exploring the social dynamics of occupational health and safety programs. 7-10 April, 2005; Pittsburgh, PA: North Central Sociological Association Annual Meetings.

Govinda Raj A, Kennedy CA, Beaton DE, Shupak R, Franche R-L, Linekar S. Validity assessment of two measures of one's readiness for change: The Single Item Staging scale (SIS) and the University of Rhode Island Change Assessment (URICA). *Qual Life Res* 2005; 14(8): 2130. (Project 925: Measurement Methods)

Koehoorn M, Hertzman C, Cole DC, Xu F, Ibrahim S, Ostry A, Holmes P. Mental illness trajectories among health care workers. 16-17 May 2005; Vancouver, BC: Canadian Association for Research on Work and Health (CARWH) Bi-annual Symposium. (Project 810: Health of Healthcare Workers)

Kristman V, Kreiger N. Information disclosure in population-based research involving genetics: A framework for the practice of ethics in epidemiology. 27-30 June 2005; Toronto, ON: Joint Meeting of the Society for Epidemiologic Research and the Canadian Society for Epidemiology and Biostatistics. *Am J Epidemiology* 161(Suppl): 434-S.

Rivilis I, Cole DC, Frazer M, Kerr MS, Ibrahim S, Wells R. Quasi-experimental evaluation of a workplace ergonomic intervention. *Am J Epidemiology* 2005; 161 (Suppl): S86 (Project 730: Manufacturing Intervention; Project 228: Evaluation & Sustainability of Ergonomic Interventions)

Theberge N, Laing A, Cole DC, Granzow K. Contesting health and safety on the terrain of participatory ergonomics: A case study from the manufacturing sector. 16-17 May 2005; Vancouver, BC: Canadian Association for Research on Work and Health Bi-annual Conference.

van der Velde G, Mazumder A, Beaton DE, Hogg-Johnson S, Hurwitz E, Bronfort G, Evans R. Item-response theory analysis of the Neck Disability Index. October 2005; San Francisco, CA: *Quality of Life Research* ; 14(8): 2151. (Project 122/123: Decision Analysis for Neck Pain).

Other Papers, Unpublished Reports and Reviews

Bigelow PL, Robson LS. Preliminary report - Systematic review of occupational health and safety audits. (Project 215: SR-OH&S Management Systems)

Bigelow P, Robson L. Occupational health and safety management audit instruments: A literature review. Toronto, Institute for Work & Health, 2005. (Project 955: SR: Audit Tools)

Breslin FC. Commentary in Linkages #15 “Which came first – The depression or the pain?”

Breslin FC, Day D, Tompa E, Irvin E, Bhattacharyya S, Clarke J, Wang A. Systematic review of risk factors for work injury among youth. Toronto: Institute for Work & Health. (Project 409: Systematic Review Work Injury Among Youth)

Guzman J, Frank JW, Hayden J, Cassidy D, Flannery J, Loisel P, Furlan A, Gibson J, Jones D. Key factors in back disability prevention. Background document for a consensus panel on the factors that prevent participation restrictions in people with back pain. (Project 111: Consensus using Delphi & Q-Cards)

Lomas J, Culyer A, McCutcheon C, McAuley L, Law S. Conceptualizing and combining evidence for health system guidance. Ottawa: Canadian Health Services Research Foundation 2005, p.38.

MacEachen E, Polzer J, Clarke J. Studying the workplace health of ‘golden haired boys’—why bother? Submitted: OHS Canada Magazine (Project 222: Manager Commitment in New Economy Organizations)

Michaels E. (Based on IWH and Guidelines Advisory Committee research). So your back hurts...Learn what works, and doesn't and how to help yourself. (Monograph)

Robson L, Clarke J, Cullen K, Bielecky A, Severin C, Bigelow P, Culyer A, Irvine E, Mahood Q. The effectiveness of occupational health and safety management systems: A systematic review (Full Report), Toronto: Institute for Work & Health 2005, p.153.

Speers J, Robson LS, Kusiak B, Burns B, Snaith D and the System Measurement Sub-committee of OHSCO. Occupational Health and Safety Council of Ontario System Performance Measurement Report 2003. Toronto: May 2005.

Tompa E, Dolinschi R, de Oliveira C. Interim report on a systematic review of OHS interventions with economic evaluations. Toronto: Institute for Work & Health (Project 218: Economic evaluation)

van der Velde, G. Clinical decision analysis: an alternate, rigorous approach to making clinical decisions and developing treatment recommendations. Submitted invited paper, Journal of the Canadian Chiropractic Association. (Project 122/123: Decision Analysis for Neck Pain)

Van Eerd D, Brewer S, Amick B, Irvin E, Daum K, Gerr F, Moore S, Cullen K, Rempel D. Workplace interventions to prevent musculoskeletal and visual symptoms and disorders among computer users: A systematic review. Toronto: Institute for Work & Health, 2006 (Project 970: SR: Computer Related Office Ergonomics)

IWH Working Papers (not elsewhere noted)

Ammendolia C, Côté P, Hogg-Johnson S, Bombardier C. Do chiropractors follow guidelines for radiography in low-back pain? A study of chiropractic teaching clinics. (Originally titled: A new episode of low back pain: Adherence to clinical guidelines for plain radiography. How well do chiropractic trainees fair? (Project 680: Adherence to LBP Guidelines) [IWH WP #298]

Ammendolia C, Kaw S, Hogg-Johnson S, Côté P, Bombardier C. Utilization and costs of lumbar and full spine radiography by Ontario chiropractors from 1994 to 2001. (Project 680: Adherence to LBP Guidelines) [IWH WP #301]

Ammendolia C, Taylor JAM, Pennick V, Côté P, Hogg-Johnson S, Bombardier C. Adherence to guidelines for back x-rays. A survey of chiropractic schools world-wide. (Originally titled: Chiropractors and spine radiography. The Great Divide. Where does it all begin? Part II. A Survey of chiropractic schools world-wide. (Project 680: Adherence to LBP Guidelines) [IWH WP # 304]

Breslin C, Smith P, Koehoorn M, Lee H. Harmonizing claim rates across provinces: A case study of the elevated rates of young workers in Ontario and British Columbia. (Project 408: Lost Times Claims Youth ON/BC) [IWH WP #312]

Breslin C, Gnam W, Franche R-L, Mustard C, Lin E. Depression and activity limitations: Examining gender differences in the general population. [IWH WP #280]

Breslin FC, Tompa E, Mustard CA, Zhao R, Hogg-Johnson S, Smith P. Trends in work-related disability: Do changes in workforce composition and job characteristics account for the decline? (Project 408: Lost-time Claims in Youth ON/BC) [IWH WP #313]

Cole DC, Van Eerd D, Bigelow P, Rivilis I. Integrative interventions for MSDs: Nature, evidence, challenges and directions. (Project 216: WHIR) [IWH WP: 317]

Culyer A, Castelli A. Rationing health care in Europe – the UK. [IWH WP #286]

Culyer A. Practical ethics and NICE. [IWH WP #287]

Culyer A. Health economics, health economists and the politics of policy making. [IWH WP # 288]

Culyer A. The bogus conflict between efficiency and equity. [IWH WP #290]

Culyer A. Involving stakeholders in health care decisions. [IWH WP #291]

Dolinschi R, Tompa E, Bhattacharyya S. Precarious employment experiences and functional health. (Project 486: Contingent Work) [IWH WP #273]

Godfrey C, Parrott S, Eaton G, Culyer A, McDougall C. Can we model the impact of increased drug treatment expenditures on the UK drug market? [IWH WP #285]

Guzmán J, Frank J, Hayden J, Cassidy D, Flannery J, Loisel P, Furlan A, Gibson J, Jones D. Key factors in back disability prevention. (Project 111: Concensus Using Delphi & Q-cards) [IWH WP# 314]

Guzmán J, Rappolt S, Davis D, Glazier R, Pennick V, Bombardier C. Decision-aids for acute back pain in community primary care: Acceptability and implementation barriers. [IWH WP #315]

Hayden JA, Côté P, Bombardier C. Quality appraisal in systematic reviews of prognosis studies: Descriptive analysis and recommendations. (Project 130: LBP Predictive Factors) [IWH WP #305]

MacEachen E, Clarke J, Franche R-L, Irvin E. A systematic review of qualitative studies on return to work. (Project 142: RTW Literature Review) [IWH WP #299]

Mustard CA, Sinclair S, Sullivan TJ. Navigating common trends and diverse systems: Examining declining work injury trends across jurisdictions. (Project 412: Five-country Study) [IWH WP #309, under revision]

Rivilis I, Van Eerd D, Cullen K, Cole DC, Irvin E, Tyson J, Mahood Q. Effectiveness of participatory ergonomics interventions: A systematic review. Submitted: Ergonomics (Project 950: SR - Participatory Ergonomics Effectiveness) [IWH WP #300]

Rivilis I, Cole DC, Frazer MB, Kerr MS, Ibrahim S, RP Wells. Evaluating the effectiveness of a participatory ergonomic intervention aimed at improving musculoskeletal health. (Project 228: Evaluation of sustainability of ergonomic intervention) [IWH WP #293]

Robson LS, Speers JC, Kusiak BA, Burns BB. Development of a performance measurement report for the Ontario Prevention System. (Generic) [IWH WP #307]

Smith P, Mustard C. In the deep end: Examining the prevalence of occupational health and safety, orientation and equipment training for employees in their first year of a new job. (Project 845: WSIB Routine Statistics) [IWH WP # 308]

Smith P, Breslin C. Household socio-economic status as a predictor of youth working in manual occupations. (Project 451: Work Injuries and Teens) [IWH WP #279]

Swift MB, Cole DC, Hogg-Johnson S and the Worksite Upper Extremity Research Group. Development of an ergonomic assessment workplace monitoring program. (Project 430: Star Song) [IWH WP #245]

Swift MB. Review of confidence intervals for a Poisson mean. (Generic) [IWH WP #282]

Szende A, Culyer A. The inequity of under-the-counter payments for health care – the case of Hungary. [IWH WP #284]

Tompa E, Scott-Marshall H, Dolinschi R. The health consequences of precarious employment experiences. (Project 486: Contingent Work) [IWH WP #268]

Tompa E, Trevithick S, Scott H, Dolinschi R, Bhattacharyya S. Precarious employment experiences and their health consequences: Towards a theoretical framework. (Project 486: Contingent Work) [IWH WP #232]

Tompa E, Dolinschi R, de Oliveira C. Practice and potential of economic evaluation of workplace-based interventions for occupational health and safety. (Project 960: Economic Evaluation Systematic Review) [IWH WP #311]

Tompa E, Mustard C, Sinclair S. Permanent disability compensation: A review of the adequacy and equity of two approaches to benefits determination in Canada. (Project 406: WSIB Lost Time Injuries) [IWH WP# 310]

van der Velde G, van Tulder M, Côté P, Hogg-Johnson S, Aker P, Cassidy JD. Are results of a systematic review of treatment effectiveness sensitive to review method used? A comparison of a Cochrane Back Review Group Guidelines' review and best-evidence synthesis. (Generic) [IWH WP #292]

Van Eerd D, Côté P, Beaton DE, Hogg-Johnson S, Vidmar M. Neck Pain within the workers' compensation system: Establishing a method of identifying true cases. (Project 370: Occupational Neck Pain) [IWH WP# 303]

Media Articles by Quarter for 2005

Quarter 1

The following articles highlighted the Institute for Work & Health or its research.

(Carroll L) Skelly A. Depression boosts back pain risk. *Medical Post*, Vol. 41 (1), Jan 4, 2005.

(Institute for Work & Health in general) Women Health and Safety Activists: Leading the fight to make workplaces safer. *Organize*, Canadian Union of Public Employees, p.11-13, Winter 2005.

(Franche R-L) Ontario WSIB Funds 20 Research Projects. *Accident Prevention*, p.5, Jan/Feb 2005.

(Institute for Work & Health in general) Work-related musculoskeletal disorders. *Labour News & Graphics*, Canadian Association of Labour Media, p.4, Feb 2005.

(Institute for Work & Health in general) Getting a Lock on Safety. *Accident Prevention*, p.38, March/April 2005.

(Breslin C, Smith P) Everest-Hill, D. First 4 Weeks. *Accident Prevention*, p.22-35, March/April 2005.

(Culyer A) Institute for Work & Health: Systematic reviews help users keep up with expanding volume of research evidence. *Journal of Canadian Chiropractic Association*, Vol. 49(1), p.56-62, Jan 2005.

(Rezai M, Côté P) Study finds link between depression and on-set of neck and low-back pain. *Headlines - Canadian Chiropractor Magazine Online*, Jan 2005.

(Eakin J) Urquhart B. The Fall of Workman's Compensation. *Woodstock Sentinel*, Jan 7, 2005.

Quarter 2

There were two major releases in this quarter.

The Institute was asked to comment in the news release issued by CIHI regarding their new report, Major Injury in Canada. The story was picked up by at least 24 media outlets including:

(Mustard C) Ontario improves young workers' safety. *The Globe and Mail*, p.A13.

(Institute for Work & Health in general) Ubelacker S. 1 in 10 severe injuries happen on the job, young people at high risk: study. *Canadian Press, Canada.com*, April 28, 2005.

(Institute for Work & Health in general) Staying Safe. *Pulse24*, April 28, 2005.

(Mustard C) Falls still top list of serious work injuries, study finds. *Canadian Occupational Health & Safety News*, p.1-2, Vol. 28(11), May 2, 2005.

Researcher Jill Hayden had two studies published in the *Annals of Internal Medicine*. A video news release (VNR) and traditional news release were issued. The story was picked up by 35 web and print media outlets. The VNR had 68 television airings in the USA. Below are highlights of some of the coverage:

Picard A. Exercise: "Don't take back pain lying down". *The Globe and Mail*, p.A17, May 3, 2005.

Why stretches help an aching back. *CBC News* online, May 3, 2005.

Soothing advice for lower back pain. *USA Today*, May 2005.

Exercise helps long-term, not acute back pain. *Psychology Today*, May 2005.

Skelly A. Exercise relieves low-back pain. *The Medical Post*, Vol. 41(20), May 31, 2005.

In addition, the following articles also highlighted the Institute for Work & Health or its research.

(Breslin C, Mustard C) Cheney, P. Every year at this time, students head off to summer jobs. *The Globe and Mail*, p. F1, F7-8, April 23, 2005.

(Kerr MS) Andrew J. Survey set to improve nursing work. *Metro*, p.28, April 20, 2005.

(van Eerd D) Research finds participatory ergo approach reduces injuries, WC claims. *CTDNews*, p.1-2, Vol. 14 (5), May 2005.

(Breslin C) What's the difference? *CLAM Labour News & Graphics*, p.5, April 2005.

(Shannon HS) Companies must increase safety knowledge. *Rehab & Community Care Medicine*, p.3, Summer 2005.

Quarter 3

Releases in this quarter included:

The Institute released DC Cole and HS Shannon's study on predictors of RSIs. Media pick up included:

A pain in the wrist. Women suffer from repetitive strain injury. *Metro*, Aug 22, 2005.

Keyboard grief. *The Globe & Mail*, p.A11, Aug 5, 2005.

Most likely to develop RSI. *Canadian Association of Labour Media*, p.2, July – Aug 2005.

Predicting RSIs. *Accident Prevention*, p.6, Sept 2005.

RSI may be predictable. *Canadian Occupational Safety e-letter*, Vol. 2(7), Aug 2005.

Researcher Peter Smith released a study on education level and self-reported health. Media pick up included:

Andrew J. Underemployed grads health suffers. *Metro*, p.25, Sept 14, 2005.

Too many degrees, not enough jobs. *Canadian Occupational Safety e-letter*, Vol. 2 (8) Sept 2005.

In addition, the following articles also highlighted the Institute for Work & Health or its research.

(Zohar D) Hodson J. Conference focuses on safety. *Metro Vancouver*, July 2005.

(Mustard C) Measuring Up: 20th Anniversary. *OHS Canada*, p.30-38, July/Aug 2005.

Rezai M, Côté P. Depression and pain: Which comes first? *Rehab & Community Care Medicine*, p.22-23, Fall 2005.

(Pransky G) Return to work is focus of this year's Institute for Work & Health Lecture. *Back to Work*, p.7, July 2005.

(Mustard C) McCallum C. Falls top list of serious work injuries: study. *OHS Canada*, p.6, July/August 2005.

(Cole DC) Mariga V. Panel seeks strategies to reduce RSIs in Ontario. *OHS Canada*, p.20, July/August 2005.

(Hayden J) Exercise helps chronic lower-back pain. *Chiropractic Products* online news, Sept 2005.

Eakin J, MacEachen E, Clarke J. The early and safe approach to return to work: How is it working in small businesses? *Alberta Occupational Medicine Newsletter*, p.1-5, Vol. XX, No. 1, Spring 2005.

Kerr M. Guest expert on CBC Radio One "Ontario Today" show on Work Burnout, June 8, 2005

Kennedy CA. Summarized best evidence on management of low back pain for The Change Foundation website (Guidelines for your health: Best Evidence).

Quarter 4

(Côté P) Aggressive care may slow healing. *The Leader Post*. Oct 26, 2005.

(Côté P) Limit doctor visits after whiplash, study says. *WVEC.com*. Oct 25, 2005.

(Côté P) Early and aggressive treatment shown to slow whiplash recovery. *Medical Post*. Dec 13, 2005.

(Côté P) Recovery from whiplash injuries: Initial patterns of care. *Rehab & community care medicine*. Winter 2005.

(Côté P) Study questions whiplash recovery. *Vancouver Sun*. Oct 26, 2005.

(Smith P) RSIs: Women on top. *OHS Canada Magazine*. Oct/Nov 2005.

(Smith P) Too many degrees, not enough jobs. *COS Magazine*. Nov/Dec 2005.

External Scientific/Academic Presentations

Beaton DE, Govinda Raj A, Hogg-Johnson S, Richards RR. Predictive validity of an aggregate measure of pain and function in workers with compensated, musculoskeletal disorders of the shoulder and elbow. Nov 2005; San Diego, CA: American College of Rheumatology (ACR) Annual Scientific Meeting. (Project 124: Classification Systems for Shoulder and Elbow)

Beaton DE, Hogg-Johnson S, Richards RR, et al. The use of IT in bringing research to practice. Nov 2005; West Palm Beach, FL: American Society of Shoulder and Elbow Therapists. (Generic)

Beaton DE, Solway S, Pitts S, Richards RR. A comparison of four measures of at-work disabilities in workers attending the WSIB Shoulder and Elbow Specialty Clinic. June 2005; Montreal, PQ: Canadian Orthopaedic Association (COA) Conference. (Project 117: Disability at Work: People with Arthritis)

Beaton DE, Van Eerd D, Govinda Raj A, Mazumder A, Smith P, van der Velde G, Cullen KL. Sensitivity and specificity of various approaches to determining a threshold for responder analysis. 21-24 Oct 2005; San Francisco, CA: 27th Annual Meeting of the Society for Medical Decision Making (SMDM). (Project 925: Measurement Methods)

Bielecky A, Mustard CA, Gnam W, Hogg-Johnson S. The association between socio-economic status and the prevalence of major depressive disorder: A result of incidence, duration and/or recurrence? 19-20 Sept 2005; Ottawa, ON: Canadian Public Health Association (CPHA) Conference. (Generic)

Bigelow P. Research in selecting and evaluating best practices. 13 June 2005; Toronto ON: Electric and Utilities Safety Association's (EUSA) Supporting Best Practices in Health and Safety Conference. (Project 229: EUSA Pilot Project)

Bogoch ER, Elliot-Gibson V, Beaton DE, Jamal SA, Josse RG, Murray TM. Management of fragility fracture patients in an inner city orthopaedic unit. Feb 2005; Washington, DC: American Academy of Orthopaedic Surgeons. (Generic)

Burr H, Smith P, Tuchsén F, Björner JB, Bach E, Kristensen TS. Trends in the work environment in Denmark and Canada in the 90's and their relation to labour market changes. 23-26 Aug 2005; Okayama, Japan: 2nd ICOH International Conference on Psychosocial Factors at Work. (Project 448: Labour Market Trajectories)

Cann A, MacEachen E, Vandervoort A. Poster: Occupational risk perception and protective strategies of food service workers: A qualitative approach. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium.

Carroll LJ, Cassidy JD, Côté P. Frequency and natural history of depressive symptoms after whiplash injuries. 21 Nov 2005; Stockholm, Sweden: Conference on Whiplash Associated Disorders: Research Challenges from an International and National View. Nobel Forum, Karolinska Institute.

Cole DC, Rivilis I, Cullen KL, Van Eerd D, Irvin E, Kramer D, Tyson J, Mahood Q. Workplace-based participatory ergonomic interventions: A systematic review of the quantitative literature on effectiveness. 16-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 950: Participatory Ergonomics Effectiveness Systematic Review)

Cole DC, Koehoorn M, Ibrahim S, Hertzman C, Ostry A, Xu F, Holmes P. Poster: Factors associated with musculoskeletal outcomes among health care workers – a multilevel analysis. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health. (Project 810: Health of Health Care Workers)

Cole DC, Tompa E. Office Ergonomics Research Committee (OERC) Annual Conference. 22-24 Sept 2005. Annapolis, Maryland.

Côté P, Baldwin ML, Johnson WG, Frank JW. Course of occupational back pain: Time to take another look beyond the first return to work. 10-14 Dec 2005; Philadelphia, PA. 133rd Annual Meeting of the American Public Health Association 133rd Annual Meeting. (Project 555: ASU Healthy Back Study)

Côté P, Hogg-Johnson S, Cassidy JD, Carroll L, Bombardier C, Frank JW. The impact of early patterns of care on the recovery of whiplash injuries: A population-based cohort study. 21 Nov 2005; Stockholm, Sweden: Conference on Whiplash Associated Disorders. Research Challenges from an International and National View. Nobel Forum, Nobels Karolinska Institute. (Project 826: Recovery from MSK)

Côté P, Ibrahim S, Carroll L, Cassidy JD, Beaton DE, Kristman VL, Hogg-Johnson S. Poster: The relationship between impairment, activity limitations and recovery from traffic-related musculoskeletal injuries. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health. (Project 826: Recovery from MSK)

Côté P, Kristman VL, Vidmar M, Van Eerd D, Hogg-Johnson S, Beaton DE. Prevalence of occupationally-related neck pain in Ontario. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health. (Third Prize Winner for Student Presentation) (Project 370: Occupational Neck Pain)

Cullen KL, Van Eerd D, Rivilis I, Cole DC, Irvin E, Tyson J, Mahood Q. Effectiveness of participatory ergonomics interventions: A systematic review. 30 Sept – 2 Oct 2005; Ottawa, ON: Canadian Kinesiology Alliance Annual Conference (Project 970: Systematic Reviews)

Day D, Breslin C, Irvin E. Poster: Systematic review methodology – Risk and protective factors for youth work injuries. 6-8 Nov 2005; Halifax, NS: 2005 Canadian Injury Prevention and Safety Promotion Conference. (Project 409: Young Worker Systematic Review)

Droll K, Perna P, McConnell A, Beaton DE, McKee M. Functional outcome and strength following surgical fixation of both bones in the forearm. Feb 2005; Washington, DC: American Academy of Orthopaedic Surgeons. (Generic)

Etches J, Mustard CA. Income dynamics and premature mortality in Canada. 16-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 403: LAD Mortality Linkage)

Etches J, Mustard CA. Education and mortality in Canada: Mediation by behavioral and material factors. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health. (Project 461: Mortality Follow-up)

Etches J, Mustard CA. Income dynamics and mortality in Canada and the United States. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health. (Project 403: LAD Mortality Linkage)

Fang M, Shannon HS, Baba VV. Correlates of mental health in Ontario workers: Results from the Canadian Community Health Survey. 11-14 Sept 2005; Bergen, Norway: EPICOH 2005 – 18th International Symposium on Epidemiology in Occupational Health.

Franche R-L, Cole DC. Défis méthodologiques des recherches sur l'intervention en milieu de travail. May 2005; Nancy, France: Roundtable participation – Des interventions à développer, à supporter et évaluer. 1er Congrès francophone sur les TMS du membre supérieur.

Franche R-L, Cullen KL, Clarke J, MacEachen E, Frank JW, Sinclair S. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 16-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 142: RTW Literature Review)

Franche R-L, Cullen KL, Tompa E, Reardon R, Irvin E, Sinclair S. Symposium on Non-Cochrane systematic literature reviews: Methodological advances, knowledge exchange, policy implications, and main findings of three reviews in occupational health. 16-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 142: RTW Lit Review)

Franche R-L, Lotters F, Hogg-Johnson S, Burdorf A, Pole J. The prognostic value of depressive symptoms, fear avoidance, and self-efficacy for duration of lost-time benefits for workers with work-related musculoskeletal disorder. 16-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 340: RTW Cohort)

Frank JW. Invited Speaker, Biopsychosocial determinants of health status at the population level – The case of the obesity pandemic. Jan 2005; New Delhi, India: 92nd Indian Science Conference.

Frank JW. Invited Speaker, Population and public health challenges: A Canadian perspective. Jan 2005; Toronto, ON: Korean Delegation Visit Symposium, University of Toronto.

Frank JW. Invited Speaker, Globalization and the emerging chronic disease pandemic: Public health action is the antidote. March 2005; Mexico City (via Tele-Conference-Video Presentation): INSP Congress.

Frank JW. Invited Speaker, Assessing and addressing health disparities in Canada. April 2005; Harvard University Forum on Investigating Health Disparities. New Research Agendas for National Health Research Institutes.

Frank JW. Invited Speaker, The global obesity and chronic disease pandemic: A public health viewpoint from Canada. April 2005; Tobago: 50th Annual Scientific Meeting, Caribbean Health Research Council.

Furlan AD. Pre-congress course: Systematic reviews of clinical trials. 10 April 2005; Sao Paulo, Brazil: 3rd World Congress of Physical and Rehabilitation Medicine.

Furlan AD. Workshop: Evidence-based rehabilitation medicine. 12 April 2005; Sao Paulo, Brazil: 3rd World Congress of Physical and Rehabilitation Medicine.

Furlan AD. Lecture: An updated systematic review of acupuncture for low-back pain. Acupuncture Symposium. 14 April 2005; Sao Paulo, Brazil: 3rd World Congress of Physical and Rehabilitation Medicine.

Govinda Raj A, Kennedy C, Beaton D, Shupak R, Franche R-L, Lineker S. Validity assessment of two measures of one's readiness for change: The Single Item Staging Scale (SIS) and the University of Rhode Island Change Assessment (URICA). October 25; San Francisco, CA: ISOQOL 12th Annual Scientific Meeting. (Project 925: Measurement Methods)

Griffith LE, Cole DC, Hogg-Johnson S, Shannon HS, Walter S, Wells R. Poster: Classifying low back pain: A proposal for four outcome types. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Meeting. (Project 223: Meta-analysis of Back Pain Etiology)

Guzman J, Frank JW, Hayden J, Cassidy JD, Loisel P, Furlan A, Flannery JF. What are the key modifiable personal and environmental factors that prevent disability in people with back pain? A consensus using Delphi and Q-card methodologies. 16-17 May 2005; Vancouver, BC: Institute for Work & Health and Toronto Rehabilitation Institute. CARWH Bi-Annual Symposium. (Project 111: Consensus using Delphi & Q-Cards)

Hayden JA, Chen C, Sung L, Tomlinson G. Outcomes in meta-analysis: Which measures and how important? 22-26 Oct 2005; Melbourne, Australia: 13th Cochrane Colloquium. (Project 130: LBP Prognosis)

Hayden JA, Côté P, Bombardier C. Quality appraisal in systematic reviews of prognosis studies: Descriptive analysis and recommendations. 22-26 Oct 2005; Melbourne, Australia: The 13th Cochrane Colloquium. (Project 130: LBP Prognosis)

Hayden JA, Reardon R, Kosny A, Bombardier C. Involving clinical stakeholders in the systematic review process: Exercises for low back pain. 22-26 Oct 2005; Melbourne, Australia: The 13th Cochrane Colloquium. (Project 130: LBP Prognosis and 440: Cochrane)

Hayden JA, Ridley G. Systematic reviews of prognosis: Clinimetric testing of a quality appraisal tool for prognosis studies. 22-26 Oct 2005; Melbourne, Australia: The 13th Cochrane Colloquium. (Project 130: LBP Prognosis)

Hayden JA, Tomlinson G. Follow-up or change scores: Does it matter which outcome is used in meta-analysis of randomized controlled trials? 22-26 Oct 2005; Melbourne, Australia: The 13th Cochrane Colloquium. (Project 130: LBP Prognosis and 440: Cochrane)

Ibrahim S et al. Mental health and work stress in the Canadian population: A longitudinal analysis of the National Population Health Survey. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Meeting, University of Toronto, Institute for Work & Health. (Project 202: NPHS Longitudinal)

Ibrahim S, Muntaner C, Kerr MS, Mustard CA, Gnam W. Poster: Job insecurity, social class and inequalities in mental health using the Canadian Community Health Survey (CCHS) Cycle 1.2. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Meeting, University of Toronto, Institute for Work & Health. (Project 304: CCHS-Cycle 1.2)

Irvin E. Poster: What happens when you take the Cochrane methodology and apply it to non-clinical literature? 22-25 Oct 2005; Melbourne, Australia: XIII Cochrane Colloquium.

Kerr MS, Ibrahim SA, Mustard CA, Franche R-L, Laschinger HK, Shamian J, Schwartz JE, Frank JW, Dusky S. Exploring stress and cortisol differences between full-time and part-time nurses. 13-16 April 2005; Boston, MA: Society of Behavioral Medicine Annual Meeting and Scientific Sessions. (Project 246: Nurse Stress Cortisol Study)

Kerr MS, Lemire Rodger G, Laschinger HK, Hepburn G, Mayrand-Leclerc M, Gilbert J, Murray G, O'Brien-Pallas LL, Dusky D, Diegel W. Adopting a common nursing model across a recently merged multi-site hospital. 21-27 May 2005; Taipei, Taiwan: International Council of Nurses (ICN) 23rd Quadrennial Congress. (Project 208: Prospective Nursing Care Model Study)

Koehoorn M, Cole DC, Hertzman C, Ibrahim S, Ostry A, Xu F, Holmes P. Mental health trajectories among health care workers. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 810: Health of Healthcare Workers)

Kristman VL, Kreiger N. Poster: Information disclosure in population-based research involving genetics: A framework for the practice of ethics in epidemiology. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Meeting, University of Toronto, Institute for Work & Health. (Second Prize Winner for Poster Session 3) (Generic)

Laing A, Frazer M, Theberge N, Cole DC, Wells R, Kerr MS. Study of the effectiveness of a participatory ergonomics intervention in reducing worker pain severity through psychosocial exposure pathways. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium.

Lewchuk W, Robertson D, Cole DC, Kerr M, Haines T. Unions, collective agreements and health outcomes. 9-11 March 2005; Hamilton, ON: 4th International Conference on Work Environment and Cardiovascular Diseases, McMaster University.

MacEachen E, Kosny A, Ferrier S. Falling between the cracks: Relations between a workers' compensation system and injured workers with complex health situations. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 244: Examination of Injured Worker's Claims)

Mustard CA. Debating the merit of prevention vs. novel clinical treatments in ischemic heart disease. 29 March 2005; Toronto, ON: Hart House, University of Toronto, Cardiovascular Sciences Collaborative Program Debate Night. (Generic)

Mustard CA, Aronson K, Wilkins R. A ten-year mortality follow-up of a 15% sample of the 1991 Canadian census population. 16-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 461: Mortality Follow-up)

Mustard CA, Kalcevich C, Boyle M. Childhood health status and inter-generational socio-economic mobility in the Ontario Child Health Study. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Conference, University of Toronto, Institute for Work & Health Joint Meeting. (Project 755: Ont. Child Health Survey)

Mustard CA. The dynamics of health: Longitudinal analysis. 19-20 Sept 2005; Ottawa, ON: Canadian Public Health Association Conference. (Generic)

Mustard CA, Boyle M. Dan Offord Memorial Symposium: Ontario Child Health Study 2001. 18-23 Oct 2005; Toronto, ON: AACAP/CACAP Joint Annual Meeting. (Project 755: Ontario Child Health Survey)

Pennick V, Gillespie L, Maxwell L, Mayhew A. Poster: A tale of four review groups. 22-26 October 2005; Australia: XIII Cochrane Colloquium.

Reardon R, Cullen KL, Franche R-L, Tompa E, Gibson J. Engaging audiences for knowledge transfer & exchange from systematic reviews. (Generic)

Rivlis I, Cole DC, Frazer M, Kerr MS, Ibrahim S, Wells R. Poster: Quasi-experimental evaluation of a workplace ergonomic intervention. 27-30 June 2005; Toronto, ON: Society for Epidemiologic Research (SER) – Canadian Society for Epidemiology and Biostatistics (CSEB) Joint Meeting, University of Toronto, Institute for Work & Health. (Project 228: Evaluation and Sustainability of Ergonomic Interventions)

Robson LS. A performance measurement framework for Ontario's public sector involved in occupational health and safety. 24-30 Oct 2005; Toronto, ON: 2005 Joint Canadian Evaluation Society/American Evaluation Association Conference. (Generic)

Scott-Marshall H. A renewed framework for investigating the nature and health consequences of work-related insecurity for the new economy. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 486: Contingent Work)

Scott-Marshall H, Tompa E, Trevithick S. The health consequences of under-employment. 9-11 March 2005; Newport Beach, CA: 4th International Conference on Work Environment and Cardio Vascular Disease (ICOH). (Project 486: Contingent Work) (IWH WP #274)

Smith P. Issues on measuring change in psychosocial work exposures. 23-26 Aug 2005; Okayama, Japan: 2nd ICOH International Conference on Psychosocial Factors at Work. (Project 448: Labour Market Trajectories)

Smith P, Frank, JW. Hours of work: Measurement issues and trends. 9-11 March 2005; Newport Beach, CA: 4th International Conference on Work Environment and Cardio Vascular Disease (Generic)

Smith P, Frank JW. Examining differences in the effects of changes in work hours among male and female labour force participants in Canada, 1976 to 2003. 23-26 Aug 2005; Okayama, Japan: 2nd ICOH International Conference on Psychosocial Factors at Work. (Generic)

Smith P, Frank JW. When aspirations and achievements don't meet. 12 Dec 2005; Copenhagen, Denmark: National Institute of Occupational Health Denmark. (Project 448: Labour Market Trajectories)

Tompa E, Dolinschi R, de Oliveira C. Practice and potential of economic evaluation of workplace-based interventions for occupational health and safety. 23 Sept 2005; Annapolis Maryland: International Workshop on Workplace-based Office Interventions for Primary and Secondary Upper Extremities Disorders. (Project 960: SR Economic Evaluation of Workplace Interventions)

Tompa E, Scott-Marshall H, Dolinschi R. The health consequences of precarious employment experiences. 9-11 March 2005; Newport Beach, CA: 4th International Conference on Work Environment and Cardio Vascular Disease. (Project 486: Contingent Work) [IWH Working Paper #268]

Tompa E, Scott-Marshall H, Dolinschi R. The health consequences of precarious employment experiences. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium (Project 486: Contingent Work) [IWH WP #268]

Tompa E, Scott-Marshall H, Dolinschi R. The health consequences of precarious employment experiences. July 2005: International Health Economics Association. (Project 486: Contingent Work)

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. 15-17 May 2005; Vancouver, BC: CARWH Bi-Annual Symposium. (Project 486: Contingent Work) [IWH WP #268]

Tompa E, Trevithick S, McLeod C. Insurance and regulatory incentives for firm-level injury and illness prevention. 25 Oct; Toronto, ON: OSSA Staff Development Retreat (Project 860: Disability Literature Review)

van der Velde G, Mazumder A, Beaton DE, Hogg-Johnson S, Hurwitz E, Bronfort G, Evans R. New Investigator Award for Poster: Item-response theory analysis of the neck disability index. October 2005; San Francisco, CA: ISOQOL 12th Annual Scientific Meeting. (Project122/3: Decision Analysis for Neck Pain)

Williams K, Altman D, Ridley G, Hayden J, Klassen T, Woolfenden S, Dennis J. Systematic reviews of studies of prognosis: Activation of a prognosis review network. Oct 2005; Melbourne, Australia. Cochrane Colloquium. (Cochrane and non-IWH)

Educational, Professional, Policy & Other Presentations & Consultations

Local and Provincial

Beaton DE. Are you better and how are you now? July 2005; Toronto, ON: Clinical Epidemiology Rounds, Hospital for Sick Children. (Project 115: Recovery Model)

Beaton DE. Evidence based practice: The evidence behind extracorporeal shockwave therapy for rotator cuff tendonitis of the shoulder. July 2005; Toronto, ON: WSIB Grand Rounds. (Generic)

Bhattacharyya S, Mansurova L. CV module workshop for members of the Community-University Research Alliances (CURA) injured workers group. 23 June 2005. (Project 402: CURA on Injured Workers)

Bigelow P. Centre for Research Expertise in Occupational Disease consultation meeting. 30 March 2005.

Bigelow P. Measurement and Evaluation Group meeting – OHSCO's MSD Prevention Strategy for Ontario. Aug 2005; Toronto, ON: Workplace Safety & Insurance Board

Bigelow P. Best practice on best practices: What does the literature tell us? 25 Oct 2005; Toronto, ON: OSSA Staff Development Retreat. (Project 229: EUSA Pilot Project)

Bigelow P, Frazer M, Kramer D, Wells R. Update of the Centre of Research Expertise for the Prevention of Work-related Musculoskeletal Disorders and Disability (CRE-MSD) pilot project to Transportation SIG. 29 March 2005; THSAO: Toronto.

Bigelow P, Kramer D. Update of the Centre of Research Expertise for the Prevention of Work-related Musculoskeletal Disorders and Disability (CRE-MSD) pilot project. 16 June 2005; Oshawa ON: Construction Safety Association of Ontario Regional Meeting. (Project 262: MSD in the Construction Sector)

Bigelow P, Kramer D, Wells R. Implementing participatory ergonomic programs in the transportation sector. 16 July 2005; Cambridge, ON: Presentation to Transfreight Inc., LLC. (Generic)

Bielecky A, Mustard CA, Gnam W, Hogg-Johnson S. The association between socio-economic status and the prevalence of major depressive disorder: A result of incidence, duration and/or recurrence? 6 Dec 2005: Toronto Region Statistics Canada Research Data Centre Brown Bag Series, Toronto, Canada. (Generic)

Bombardier C. Purpose/conceptual framework of a measure. 10 Jan 2005; Toronto, ON: Guest Professor, University of Toronto, MSc, HAD 5302: Measurement in Clinical Research.

Bombardier C. Sensibility of a measure. 7 Feb 2005; Toronto, ON: Guest Professor, University of Toronto. MSc, HAD 5302: Measurement in Clinical Research. (Generic)

Bombardier C. Rebuilding trust: Partnerships between industry and academia: Results of a workshop. 8 Feb 2005; Toronto, ON: University of Toronto, Intra-city Conference Rheumatology Rounds. (Generic)

Bombardier C. Measurement/INCLLEN, Establishment of the clinical epidemiology program. 22 Feb 2005; Toronto, ON: Guest Lecturer. Parade of Stars, University of Toronto, Clinical Epidemiology Students - PhD Thesis Course. (Generic)

Bombardier C. The future of evidence-based practice. 22 Feb 2005; Toronto, ON: Invited Keynote Speaker, University of Toronto, Faculty of Dentistry Research Day. (Project: Generic)

Bombardier C. Evidence-based medicine, systematic reviews and the Cochrane collaboration. 11 July 2005; Institute for Work & Health Systematic Review Workshop.

- Bombardier C. The ethics of industry relationships. 21 Sept 2005; Toronto, ON: University of Toronto, Core Curriculum, Rheumatology Rounds. (Generic).
- Bombardier C. Low back pain. 6 October 2005; Toronto, ON: Mini-Med School at the University of Toronto. (Generic)
- Brenneman Gibson J. KTE in a research organization. 5 April 2005; Toronto, ON: Cancer Care Ontario KTE Working Group.
- Brenneman Gibson J. Why is no one asking for my brilliant research? 21 April 2005; Toronto, ON: Joint Preventive Oncology Seminar Series, Cancer Care Ontario.
- Brenneman Gibson J. Building linkages and building capacity. 25 Oct 2005; OSSA Retreat.
- Brenneman Gibson J, Reardon R. Knowledge brokering workshop. 27 June 2005; Toronto, ON: Cancer Service Innovation Fund Recipients, Cancer Care Ontario.
- Breslin FC. Pilot survey of young workers. 10 Feb 2005; Toronto, ON: Young Worker Health and Safety Steering Committee, Ontario Ministry of Labour. (Project 451: Work Injuries and Teens)
- Breslin FC, Smith P. Poster: Baptism of fire: The relationship between job tenure and lost-time claim rates. 4-6 April 2005; Toronto, ON: Health & Safety Canada 2005, Industrial Accident Prevention Association (IAPA) Conference and Trade Show. (Project 408: Lost-time Claims Youth)
- Cole DC. Evaluating worksite ergonomic interventions for MSD. 12 Jan 2005; Toronto, ON: Occupational Medicine Rounds, St. Michael's Hospital. (Generic)
- Côté P. Rehabilitation for whiplash injury: Does it promote faster recovery? 23 Feb 2005; Toronto, ON: GTA Rehab Network, Best Practices Day. (Project 826: Recovery from MSK)
- Côté P. Epidemiology/burden of illness for mechanical neck disorders update. 30 Sept 2005; Hamilton, ON: McMaster University, Symposium on Neck Pain: Current Research Update. (Project 370: Occupation Neck Pain)
- Côté P. MSK as recurrent chronic disease: How does this change our thinking about prevention and treatment. 25 October 2005; Toronto, ON: OSSA Staff Development Retreat. BMO Institute of Learning. (Project 826: Recovery from MSK)
- Côté P, Hogg-Johnson S, Cassidy JD, Carroll L, Bombardier C, Frank JW. The impact of early patterns of care on the recovery of whiplash injuries: A population-based cohort study. July 2005; Hamilton, ON: Orthopedic Rounds, Hamilton General Hospital, McMaster University.
- Culyer A. Blueprint for expanding the use of research evidence in decision making. 11 Jan 2005; OHSCO 2nd Roundtable with IWH and WSIB RAC.
- Culyer A. Deliberative processes and evidence-informed decision-making in health care – do they work and how might we know? 2005 Sinclair Lecture, Queen's University.
- Culyer A. Appropriately combining evidence through a deliberative process, CHRF Symposium on Evidence and Policy 2005.

Culyer A. Revolution by protocol, ICES Conference on The Quality Agenda – Do our health data measure up? 2005.

Culyer A. Should cancer chemotherapy be privately funded? Cancer Care Ontario conference on Cancer Systemic Therapy – Can we afford the cure? 2005

Culyer A. The bogus conflict between efficiency and equity – sharpening distinctions, focusing ethical conflict and developing a new heuristic for economists. Canadian Health Economics Study Group 2005.

Culyer A, Côté P, Franche R-L, Gibson J. The client and family as partners in the rehabilitation process. 23 Feb 2005; Toronto, ON: GTA Rehab Network Back Practices Day.

Etches J, Mustard CA. Education and mortality in Canada: Mediation by behavioural and material factors. 18-21 Sept 2005; Ottawa, ON: CPHA/Statistics Canada Data User's Conference. (Project 461: Mortality Follow-up)

Franché R-L. Issues and interventions in return to work: An overview of current evidence. 25 Oct; Toronto, ON: OSSA Staff Development Retreat. BMO Institute of Learning.

Franché R-L, Cullen KL, Clarke J, MacEachen E, Frank JW, Sinclair S and the Workplace-based Return-to-Work Intervention Literature Review Group. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 23 Feb 2005; Toronto, ON: GTA Rehab Network, Best Practices Day. (Project 142: RTW Lit Review)

Franché R-L, Guzman J. Interventions in return to work: An overview of current evidence and directions for future research. 15 Nov 2005; Toronto, ON: WSIB RTW discussion forum.

Franché R-L, Guzman J, Tompa E. Issues and interventions in return to work: An overview of current evidence. 17 Aug 2005; Toronto, ON: WSIB Roundtable on Return to Work and Labour Market Re-entry. (Project 142: RTW Lit Review)

Franché R-L, MacEachen E, Cullen KL, Clarke J, Frank JW, Sinclair S. and the IWH Workplace-based return-to-work intervention literature review research team. Workplace-based return-to-work interventions: A systematic review of literature and future directions for research. 24 March 2005; Toronto, ON: WSIB Research Advisory Council. (Project 142: RTW Literature Review)

Frank JW. Invited Speaker, Pushing the boundaries of population and public health research. Feb 2005; Calgary, AB: A 21st Century Vision for Public Health, University of Calgary.

Frank JW. Invited Speaker, The challenge of health disparities: A Canadian perspective. June 2005; Toronto, ON: Epidemiology Students' Meeting, CSEB/SER Symposium.

Frank JW. Invited Speaker, The challenges of transdisciplinary health research with knowledge-user partners: The view from Canada. June 2005; Hamilton, ON: McMaster University Collaborations for Health.

Frank JW. Keynote Speaker. Does Canada need an organized environmental health surveillance system. Sept 2005; Ottawa, ON: CPHA Annual Conference.

Frank JW. Invited Speaker (with Vic Neufeld). Global health research programs, government international policy and initiatives. Nov 2005; Toronto, ON: G-10 VPs of Research Group, University of Toronto Faculty Club.

Frank JW. Invited Speaker. A tale of (more than?) two cohorts – from Canada. Nov 2005; Toronto, ON: Developmental Origins of Health & Disease (DOHaD) Conference.

Frank JW. Invited Speaker. Population level approaches to preventing and controlling chronic disease in Ontario. Nov 2005; Toronto, ON: ALPHA/OPHA Conference

Frank JW. Invited Speaker. The determinants of individual and population health – revisited. Dec 2005; Toronto, ON: CIAR/IWH/University of Toronto Lecture Series on Population Health.

Guzman J. Back pain and disability prevention. 14 April 2005; Toronto, ON: University of Toronto, Dept of Medicine Grand Rounds.

Guzman J. Back pain as a biopsychosocial problem. Toronto, ON: Toronto Rehabilitation Institute MSK Forum.

Irvin E. Searching the Cochrane Library. 23 June 2005; Toronto, ON: Cochrane Workshop for Ontario Pharmacists' Association.

Irvin E. 2006 Prevention Review Topic Consultation. 15 Nov 2005; Toronto, ON: Business Council on Occupational Health & Safety (ON).

Irvin E. 2006 Prevention Review Topic Consultation. 16 Nov 2005; Toronto, ON: WSIB/MOL.

Kosny A, Hayday S, Holness L. Poster: Mapping the external, physical environment of inner city workplaces: A pilot study. 4th International Conference on Urban Health, Toronto.

MacEachen E. Qualitative research terms and methods. 3 Nov 2005; Toronto, ON: Injured worker community working group, injured workers consultants. (Project 402: CURA)

Mustard CA. Overview of the census-mortality 10-year follow-up study. 1-2 Feb 2005; Toronto, ON: Occupational Cancer Surveillance Workshop, Cancer Care Ontario. (Project 461: Mortality Follow-up)

Mustard CA. Systematic reviews of the effectiveness of prevention interventions in occupational health and safety. 4 Feb 2005; Toronto, ON: Research Advisory Council, Ontario Workplace Safety and Insurance Board. (Generic)

Pennick V. All you ever wanted to know about systematic reviews but were afraid to ask. 2 March 2005; Toronto, ON: Nursing Research Interest Group Workshop. (Project 440: Cochrane)

Pennick V. All you ever wanted to know about Cochrane reviews but were afraid to ask. 4 May 2005; Toronto, ON: Consumers and Research: Making the Connection, Ontario Neurotrauma Foundation Workshop. (Project 440: Cochrane)

Pennick V. All you ever wanted to know about systematic reviews but were afraid to ask. 3 June 2005, Markham, ON: RNAO 3rd Biennial International Conference Best Practice Guidelines: The Key to Knowledge Practice Synergy.

Pennick V. Introduction to systematic reviews. 2 March 2005; Toronto, ON: RNAO Nursing Research Interest Group.

Reardon R. Family physician EI regional workshops, Establishing a Network for KTE with Ontario's Family Physicians, June – Sept 2005 (6 sites)

Robson LS, Bigelow P. The effectiveness of occupational health and safety management systems: A systematic review. Feb 2005; Toronto, ON: Health and Safety Association's (HSA) Liaison Committee, Institute for Work & Health. (Project 215: OH&S Management Systems)

Robson L, Bigelow P, Clarke J, Cullen K, Bielecky A, Severin C, Irvin E, Culyer A, Mahood Q. The effectiveness of occupational health and safety management systems (OHSMS). 30 Nov 2005; Hamilton, ON: McMaster University, Occupational Health Hygiene, and Toxicology Rounds. (Project 215: Systematic Review – OHSMS)

Robson L, Bigelow P, Van Eerd D, Williams A, Etches J, Hogg-Johnson S, Ferrier S, Kells R. June 2005; Toronto, ON: Primary data collection. Evaluation Design Options for the High Risk Firm Initiative Technical Workshop.

Tompa E, Scott H, Dolinschi R, Trevithick S, Bhattacharyya S. The health consequences of precarious employment experiences. April 2005; Toronto, ON: Workplace Safety and Insurance Board's Grand Rounds. (Project 486: Contingent Work)

Tompa E, Trevithick S, McLeod C. A systematic review of the prevention incentives of insurance and regulatory mechanisms for occupational health and safety. 23 March 2005; Hamilton, ON: Occupational Health, Hygiene and Toxicology Rounds, McMaster University. (Project 860: Disability Literature Review) [IWH WP #213]

Tompa E, Trevithick S, McLeod C. Insurance and regulatory incentives for firm-level injury and illness prevention. 25 Oct 2005; Toronto, ON: OSSA Staff Development Retreat. (Project 860: Disability Literature Review)

National

Bombardier C. Developing evidence-based guidelines. 22 Jan 2005; Cambridge, ON: Invited Speaker Chaired the following Sessions: Cardiovascular Effects of Coxibs and The Great Debate - Cardiovascular: Class or No Class Effect of Coxibs at An Evidence-Based Approach to Prescribing NSAIDs in the Treatment of Osteoarthritis and Rheumatoid Arthritis: 3rd Canadian Consensus Conference. (Generic)

Bombardier C. International activities and challenges from a research perspective. 26 Sept 2005; Montreal, PQ: 3rd Canadian Drug Information Association (CDIA) meeting. (Generic)

Breslin FC. Vulnerable/special populations: Young workers as a case study. 16 June 2005; Montreal, PQ: Université de Sherbrooke, Campus de Longueuil: Educational presentation at Work Disability Prevention CIHR Strategic Training Program. (Generic)

Breslin FC. Young workers: What we know and what we need to know. 17 June 2005; Montreal, PQ : Institut de recherche Robert-Sauvé en santé et en sécurité du travail. (Project 451: Work Injuries and Teens)

Carroll LJ, Cassidy JD, Côté P. Depression is a whiplash associated disorder: Depressive symptoms after whiplash. 28 April 2005; Edmonton, AB: Dept. of Health Sciences 3rd Annual Research Day. (Project 826: Recovery from MSK)

Cullen KL, Franche R-L, Clarke J, MacEachen E, Frank JW, Sinclair S and the Workplace-based Return-to-Work Intervention Literature Review Group. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 23 March 2005; North York, ON: Canadian Association of Rehabilitation Professionals (CARP), York University. (Project 142: RTW Lit Review)

Frank JW. Invited Speaker, NIH Centres Meeting – Centres for Population Health and Health Disparities, May 2005; Chicago, IL.

Frank JW. Invited Speaker. Clinical prevention guidelines for obesity management: Lots of enthusiasm, little evidence. Sept 2005; Banff, AB: University of Lethbridge Prevention Conference.

Frank JW. Keynote Speaker. The challenge of health disparities: A Canadian perspective. Oct 2005; White Point Beach, NS: Atlantic Network for Prevention Research Forum.

Guzman J. The 'Peterborough Back Rules' for acute low back pain: The primary care and occupational disability study. 29 June 2005; Montreal, PQ: CLIP Program Research Advisory Group meeting.

Hogg-Johnson S, MacEachen E. Quantitative and qualitative methodology in work disability research. 15-16 June 2005; Longueuil, Quebec: Universite de Sherbrooke: Two-day Workshop, Work Disability Prevention CIHR Strategic Training Program. (Project 144b: Training Initiatives)

Mustard CA. Health research conducted in the regional data centres. 6 May 2005; Winnipeg, MN: National Statistic Council, Statistics Canada. (Generic)

Mustard CA. Health and social justice policy thematic workshop. 25 Oct 2005; Gatineau, Quebec: Invited Comment. Evidence-Based Public Policy: New Tools from Experimental Economics Conference.

Mustard CA. Allergy and asthma in the workplace: From research to public policy. 27 Oct 2005; Toronto, ON: Invited presentation, AllerGen NCE Inc. First Annual Research Conference: Innovation from Cell to Society.

Pennick V, Gillespie L, Maxwell L, Mayhew A. A tale of four review groups [oral]. 2-3 Dec 2005; 4th Canadian Cochrane Symposium, Canada.

Reardon R. Creating a network of educationally influential primary care physicians for Knowledge Transfer & Exchange workshop. Sept 2005; Calgary, AB: Canadian Association for Continuing Health Education (CACHE) Annual Conference.

Reardon R. Creating a disability management model for physical therapists workshop. Sept 2005; Edmonton, AB: Alberta WCB, Alberta Physiotherapy Assoc, University of Alberta.

Tompa E. CPRN roundtable on vulnerable workers. 13 Sept 2005; Ottawa, ON (Generic)

Van Eerd D, Mazumder A, Hogg-Johnson S, Moore A, Wells R, Cole DC. Relationship between EMG and workstation setup. 4-6 April 2005; Toronto, ON: Health & Safety Canada 2005, Industrial Accident Prevention Association (IAPA) Conference and Trade Show (Project 430: Star/SONG)

International

Bigelow P. Committee member, The American Conference of Governmental Industrial Hygienists, Threshold Limit Value (TLV) Committee Meeting, 1-4 April 2005; Cincinnati OH.

Bombardier C. Placebo control trials. 10 Feb 2005; Arlington, VA: Clinical Trial Design and Outcomes Meeting. (Generic)

Bombardier C. QoL assessment made easy. 13 March 2005; Athens, Greece: Workshop- Wyeth Pharmaceuticals - Progress and Promise 2005 Rheumatology Summit. (Generic)

Bombardier C. Use of information technology in arthritis care and rehabilitation. 12-14 May 2005; Toronto, ON: CARE III International Conference during "Innovations for Arthritis - The Future" session.

Bombardier C. Epidemiological Data. 8 Sept 2005; Zurich, Switzerland: COX-2 Summit. Session on COX-2 and the Cardiovascular System: What is the evidence? (Generic)

Bombardier C. Women leaders in rheumatology. 24 Sept 2005; Chicago, IL: Abbott Women in Rheumatology Meeting. (Generic)

Bouter L, Pennick V. Open Back Group Meeting. 25 October 2005. XIII Cochrane Colloquium, Australia.

Cassidy, JD, Carroll LJ, Côté P, Frank J. Does rehabilitation benefit whiplash recover? 24 Nov 2005; Amsterdam, The Netherlands: Special Seminar, The Institute for Extramural Medicine (EMGO), VU University Medical Center. (Project 826: Recovery from MSK)

Côté P, Hogg-Johnson S, Cassidy JD, Carroll L, Bombardier C, Frank JW. The impact of early patterns of care on the recovery of whiplash injuries: A population-based cohort study. 24 Nov 2005; Amsterdam, The Netherlands. EMGO Institute. (Project 826: Recovery from MSK)

Irvin E. The evidence-based medicine vendor roundtable. 5-8 June 2005; Toronto, ON: Collaboration Meeting with Cochrane Library for the Special Library Association.

Kennedy CA. Evidence-based treatment of low back pain. 20-22 Sept 2005; Toronto, ON: The Woodbridge Group, Health, Safety & Environment Global Conference. (Generic)

Mustard CA. Promoting excellence in occupational health and safety. 8-9 March 2005; Luxembourg, Germany: 2nd Conference of EU Directors General of Labour: Co-operation between Insurance and Prevention. (Generic)

Mustard CA. Using research evidence to prevent work injury and disability. 28 April 2005; Hong Kong: World Day for Safety & Health at Work.

Pennick V. All you ever wanted to know about systematic reviews but were afraid to ask. 3 June 2005; Toronto, ON: RNAO 3rd Biennial International Conference Best Practice Guidelines: The Key to Knowledge Practice Synergy. (Project 440: Cochrane Back Group)

Smith P, Frank, JW. When aspirations and achievements don't meet. 12 Dec 2005: National Institute of Occupational Health Denmark, Copenhagen, Denmark. (Project 448: Labour Market Trajectories)

van der Velde G, van Tulder M, Côté P, Hogg-Johnson S, Aker P, Cassidy JD. Are results of a systematic review sensitive to the review method used? March 2005; Las Vegas, CA: American Chiropractic Colleges – Research Agenda Conference 2005. (Generic)

Plenaries

External Speakers

Katherine Lippel, Law Department, Université du Québec à Montréal
Legal remedies for victims of psychological harassment in Québec: An overview of workers' compensation and minimum standards legislation. 20 Jan 2005.

Glenn Pransky, Center for Disability Research, Liberty Mutual Research Institute, MA, USA
Challenges in return to work research: Concepts, theory, measures and outcomes. 15 Feb 2005.

Jana Raver, Queen's University

Building the business case: Linking sexual harassment to interpersonal relations and performance in teams. 22 Feb 2005.

John Vander Doelen and Ed McCloskey, Ontario Ministry of Labour

An overview of the Ontario Ministry of Labour's occupational health and safety policy development and program delivery system. 1 March 2005.

Carolyn Dewa, Centre for Addiction and Mental Health

Workers disabled by depression and their return to work: The association between the length of short-term disability leave and the role of pharmacological guideline use of antidepressants.

12 April 2005.

Radoslaw Wasiak, Center for Disability Research, Liberty Mutual Research Institute for Safety, Hopkinton, MA, USA

Recurrence of work-related low back injuries: Lessons learned from administrative data.

14 April 2005.

Carol Runyan, Director, Injury Prevention Research Center,

Professor of Health Behavior and Health Education, University of North Carolina

Injury risks and working U.S. teens -- ongoing research and continuing dilemmas. 31 May 2005.

Michel Grignon, Department of Economics and Gerontology Program, McMaster University

Sickness leaves in France: Moral hazard or strain? 13 Sept 2005.

Cathy Walker, Director, Health and Safety Department

Canadian Auto Workers Union (CAW) - Canada

NIOSH, Canada Inc.? A short history of what is and could have been, and some thoughts and questions for the future. 4 Oct 2005.

Kathryn Woodcock, Ryerson University

The eye of the beholder: Individual differences in accident investigation. 1 Nov 2005.

Robert Storey, Sociology & Labour Studies, McMaster University

Social assistance or a workers' right: Workmen's compensation and the struggle of injured workers in Ontario, 1970-1985. 15 Nov 2005.

Internal Speakers

Franché R-L, Cullen KL, Clarke J, MacEachen E, Frank JW, Sinclair S, and the Workplace-based return-to-work intervention literature review group. Workplace-based return-to-work interventions: A systematic review of the quantitative and qualitative literature. 11 Jan 2005. (Project 142: RTW Lit Review)

Culyer A. Efficiency vs. equity - A bogus conflict? 1 Feb 2005.

Guzmán J. Follow-up on Edmonton International Forum. 8 Feb 2005.

Robson LR, Cullen K, Bigelow P, Clarke J. Systematic review of the effectiveness of occupational health and safety management systems: Challenges, results, and lessons learned.

8 March 2005. (Project 215: OH&S Management Systems Systematic Review)

MacEachen E, Kosny A, Ferrier S. Personal dimensions of work injury: Experiences of an injured workers' group. 15 March 2005. (Project 244: Examination of Injured Worker's Claims)

Guzman J, Zohar D, Bigelow P, Beaton DE. Transdisciplinary rounds: Of paradigms and other nasty words. 19 April 2005.

Côté P. Prevalence of occupationally-related neck pain in Ontario. 3 May 2005.

Gnam W. A proposed intervention for workers with depressive disorder. 10 May 2005.

Cole DC, Hogg-Johnson S, Lee H, WUER/TSSONG Team. MSD-related health care utilization: Attribution and coverage in a workforce. 17 May 2005. (Project 430: StarSONG)

Bigelow P. Working with the Electrical & Utilities Safety Association in an intervention study to prevent work-related MSDs. 24 May 2005.

van der Velde G. The appropriate management of neck pain: The contribution of decision analysis to clinical practice guidelines. PhD Thesis Proposal Defence. 7 June 2005.

Bigelow P. Working with the Electrical & Utilities Safety Association in an intervention study to prevent work-related MSDs. 20 Sept 2005.

Guzmán J. Key factors in back disability prevention: Results of consensus panel and discussion on next steps. 27 Sept 2005.

Breslin C. The contribution of developmental factors and youth work injuries: What can we say at this point? 11 Oct 2005.

Reardon R. Physicians EI Network. 18 Oct 2005.

Gray G. Ticketing health and safety offenders: The blurring of responsibility in Ontario's High Risk Firm Initiative. 2005-06 Syme Fellowship, IWH. 25 Oct 2005.

Guzmán J, Breslin C, Hogg-Johnson S. Transdisciplinary rounds: How different disciplines approach stakeholder collaboration. 8 Nov 2005.

Pennick V, Hayden J, Irvin E. All you wanted to know about the Cochranen Colloquium but were afraid to ask. 6 Dec 2005.

Grants and Awards * Principal Investigator is External

Research Project Funding - Awarded

*Alter D, Mustard CA, Irvine J, Naylor D, Austin P, Williams J, Tu J. Socio-economic status and outcomes after acute myocardial infarction. CIHR: \$211,500; 2004 – 2006.

Ammendolia C, Bombardier C, Hogg-Johnson S. Validation of a decision aid tool for x-ray use in patients with acute low back pain (ALBP). Special Chiropractic Research Fund, Ontario Chiropractic Association and the Ontario Ministry of Health and Long Term Care: \$187,450; 2002-2005. (Project #680)

Beaton DE, Bombardier C, Gignac M, Lecaille D, Badley E, Anis A. Disability at work: Measuring the progression of at-work disability and workplace productivity loss. Canadian Arthritis Network: \$250,600; 2005 – 2007. (Project # 121)

Beaton DE, MacDermid J, Richards R, Franche R-L, Côté P, Hogg-Johnson S, Bombardier C, Pagura S. 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. (Administered at St. Michael’s Hospital) (Project # 113)

Beaton DE, Richards RR, Hogg-Johnson S. The validation of a classification system for work-related disorders of the shoulder and elbow. Funding Agency: WSIB RAC: \$159,556; May 2003-2007. (Administered at St. Michaels Hospital)

Bigelow P, Cole DC, Ferrier S, Franche R-L, Frazer M, Kramer D, Lee W, Maracle S, Theberge N, Wells R, Zohar D. Evaluation of a HSA-initiated collaborative partnership to implement participatory ergonomic program. WSIB-RAC: \$292,908; 2005 – 2007. (Project # 233)

Bigelow P, Kramer D. Exploration of the feasibility of participative interventions to reduce musculoskeletal disorders in the construction sector. CRE-MSD Seed Grant: \$8,200; 2005. (Project # 262)

Bigelow PL, Kramer D, Garritano E, Wells R, Vi P. Bridging the Gap: Identifying the barriers and facilitators to the adoption of ergonomic innovations in the construction sector. WSIB-RAC: \$59,777; 2005. (Project # 239)

Bigelow P, Zohar D, Dunk W, Frazer M, Wells R, Ferrier S. Exploring organizational factors and safety climate in the implementation of an ergonomic intervention. CRE-MSD; \$7,500; 2005. (Project # 229)

Bombardier C, Beaton DE, Gignac M, Lecaille D. Disability while at work: A comparison of different measures in persons with arthritis. Canadian Arthritis Network: \$76,487; 2005 (Project #117)

Bombardier C, Côté P, Hogg-Johnson S. The incidence, course and health care impact of common treatments for low back pain. Pfizer Global Pharmaceuticals: US \$106,650; 2005.

*Boyle M, Mustard CA, Offord D, Dooley M, Rosenbaum P, Bennett K, Cairney J, MacMillan H, Lipman E. Ontario child health study: early influences on health and development in adulthood. CIHR: \$304,000 IWH; 2003-2005 (Administered at McMaster University) (Project #755)

Breslin FC. Systematic Review: Risk factors for work injury among youth. McMaster University: Institutional Capacity Enhancement (ICE) pilot project: \$13,325; 2004 - 2005. (Project # 409)

Breslin FC, Koehoorn M, Mustard CA, Hogg-Johnson S. Incidence and correlates of lost-time claims among adolescents and young adults in Ontario and British Columbia. WSIB RAC: \$147,844; 2002-2004 extended to Dec. 31, 2005. (Project # 408)

Breslin FC, Tompa E, Hogg-Johnson S, Amick B. Work injury and young people: A prospective study. NIOSH: US \$100,000; 2004 - 2006. (Project # 451)

Breslin FC, MacEachen E, Shannon HS, Morrongiello B. Work injuries among adolescents: Towards a gendered conceptual framework. CIHR: \$48,024; 2004 - 2005. (Project # 442)

Cole DC, Rivilis I, Scott L, Clarke A, Hogg-Johnson S. Developing standard metrics for work disability management – implementation assessment. Bridging the Gap: WSIB-RAC: \$59,932; 2005-2006. (Project # 237)

Cole DC, Williams A. Evaluating the effect of transformational leadership on MSK disorders and minor injuries in the service sector. CRE-MSD: \$7,390; 2004 - 2005. (Project # 275)

Côté P, Beaton DE, Cassidy J, Carroll L, Bombardier C, Hogg-Johnson S. The relationship between impairment, activity limitations, participation restriction and markers of recovery in individuals with musculoskeletal disorders: A validation study of two conceptual frameworks. CIHR: \$74,580; 2004 - 2006. (Project # 826)

Côté P, Hogg-Johnson S, Bombardier C, Beaton DE. The epidemiology and primary care utilization for occupational neck pain in Ontario. Special Chiropractic Research Fund, Ontario Chiropractic Association and Ontario Ministry of Health and Long Term Care Special Chiropractic Research Fund: \$139,950; 2002-2005. (Project #370)

Côté P, Kristman V, Hogg-Johnson S, Cassidy JD, Wennberg R, Tator CH. Occupational mild traumatic brain injury in Ontario: Identification, prognosis and health care utilization. Ontario Neurotrauma Foundations “MTBI/Feasibility Studies”: \$76,625; 2005- 2006. (Project # 165)

*Davis A, Badley E, Beaton DE, Côté P, Flannery J, Gignac M, Hogg-Johnson S, Mohamed N, Schemitsch E, Streiner D. Outcome measurement: The importance of time. CIHR: \$624,224; 2005 – 2009. (Administered at Toronto Western Hospital Research Institute, University Health Network)

*Denburg J, Mustard CA et al. ALLERGEN: Allergy, genes and environment network. Networks of Centres of Excellence: \$25,000,000; 2004 - 2011 (Administered at McMaster University)

*Eakin JM, MacEachen E, Clarke J. The logic of practice: An ethnographic study of front-line service work with small businesses in Ontario's workplace health insurance agency. WSIB RAC: \$52,691; 2004 – 2006. (Administered at the University of Toronto) (Project # 227)

Frache R-L, Mustard CA, Hepburn G, Breslin FC, Hogg-Johnson S, Frank JW, Côté P. Determinants of return-to-work: applying the readiness for change model. WSIB RAC: \$278,320; 2004 - 2006. (Project # 341)

Gnam W, Mustard CA. The economic costs of mental disorders, alcohol and illicit drugs in Ontario: A cost-of-illness and micro-simulation study. Ontario Mental Health Foundation: \$354,064; 2003 - 2005. (Administered at the Centre for Addiction and Mental Health, Ontario) (Project # 231)

Gnam W, Koehoorn M, Breslin FC, Mustard CA. Profiling the mental health and service utilization of workers' compensation claimants. \$110,310; 2002-2005; Workers' Compensation Board of British Columbia. (Administered at the Centre for Addiction and Mental Health, Ontario) (Project #231)

Gnam W. Trajectories of Mental Illness in Education Workers - Ontario Teachers Insurance Plan (OTIP) Disability. Centre for Addiction and Mental Health \$14,000; 2005-2006 (Project # 414)

Guzman J. What are the key modifiable personal and environmental factors that prevent disability in people with back pain? A consensus using Delphi and Q-card methodologies. WSIB RAC; \$29,504; 2004 - 2005. (Project # 111)

*Hertzman C, Barer M, Black C, Evans R, Frank JW, Mustard CA, Roos N, Teschke K, Willms D. Population health observatory: A resource to improve health, quality of life and productivity in Canada. Canadian Foundation for Innovation: \$2,938,069; 2004 -2007. (Administered at the University of British Columbia)

*Holness L, Corey P, House R, Liss G, Purdham J, Sass-Kortsak A, Scott J, Silverman F, Tarlo S, Verma D, Abel S, Eakin J, Faughnan M, Hargreave F, Hosein R, Kerr MS, Lou W, Loughheed D, Pratt M, Skotnicki-Grant S, Switzer-McIntyre S. Centre of Research Expertise in Occupational Disease. WSIB: \$1,976,000; 2003 - 2008. (Administered at St. Michael's Hospital)

*Hurley J, Tompa E, Gnam W, Lavis J, Culyer A, Mustard CA. The dynamics of parallel systems of finance: Interaction between Canada's workers' compensation systems and public health care systems. CIHR: \$74,513; 2005 – 2006. (Administered at McMaster University) (Project # 462)

Kerr MS, Lemire Rodger G, Laschinger HK, Hepburn CG, Mayrand-Leclerc M, Gilbert J, O'Brien-Pallas L. Adopting a common nursing practice model across a recently merged multi-site hospital. CHSRF: \$438,722; 2002 – 2005. (Administered at University of Western Ontario). (Project # 208)

*Koehoorn M, Breslin FC. Youth at work: B.C. high school survey on work-related injuries. Workers' Compensation Board of British Columbia: \$50,215; 2004 - 2006. (Project # 234)

Kosny I, Eakin J, Holness L, Hwang S. Are non-profit organizations healthy workplaces. National Network on Environments and Women's Health: \$29,925; 2004 - 2005. (Project # 219)

*Laschinger, HK, Wong C, Armstrong-Stassen M, White J, Kerr MS, Saxe-Braithwaite M, Matthews S, Vincent L, Almost J, Wilk, P. A profile of the structure and impact of nursing management in Canadian hospitals. CHSRF: \$387,500; 2002 – 2005. (Administered at the University of Western Ontario)

Mustard CA. British Columbia Workers' Compensation Board: \$13,500; 2005 (Project #422)

Mustard CA. Predictors of the incidence of disability income insurance among Ontario labour force participants, 1994-2004. Ontario WSIB RAC: \$161,000; 2004 - 2006. (Project # 404)

Mustard CA. A systematic review of the effectiveness and cost-effectiveness of social marketing campaigns in occupational injury prevention. Work Safe WCB-BC: \$92,000; 2005 – 2006. (Project # 424)

Mustard CA, Aronson K, Wilkins R. Mortality by occupation in Canada: a ten-year follow-up of a 15% sample of the 1991 census. CIHR: \$152,479; 2003 - 2005. (Project # 461)

MacEachen E, Ferrier S, Cole DC. An ethnographic study of injured workers' complex claims experiences. WSIB-RAC: \$88,198; 2005 - 2007. (On Nov. 8th, \$9473 additional funding was awarded to the original study, new total: \$97,671.00) (Project # 244)

Mustard CA, Kerr MS, (Co-Principal Investigators), Bigelow P, Fernie G, Fraser M, Keir P, Laschinger H. Evaluation of overhead patient lifting devices in Ontario. Ministry of Health and Long Term Care; \$1,028,000; 2004 – 2007. (Project # 252)

Mustard CA, Rued S, Lavis JN, Bayoumi A, Raboud J, Rourke S. Effects of return-to-work on health related quality of life in HIV/AIDS: A prospective cohort study. CIHR: \$116,678; 2003 - 2007. (Project # 756)

Mustard CA, Tompa E. Human capital development. CPRN: \$7,500; 2005. (Project 438)

Mustard CA, Tompa E, Manuel D. Canadian trends in socioeconomic inequalities in avoidable mortality: 1985-2002. CIHR: \$180,000; 2005 - 2007. (Project # 403)

*Naqvi S, Cole DC, Theberge N, Ferrier S, Chase T, Tompa E. Evaluation of the impact of participatory ergonomics intervention. CRE-PREMUS; \$7,500; 2004 (Administered at Occupational Health Clinics for Ontario Workers Inc.) (Project # 238)

*Shannon HS, Mustard CA, McDonough P. The use of health and social services following workplace injury: a study of workers and their families in British Columbia. NIOSH: \$119,440; 2003 – 2005. (Administered at McMaster University)

*Shannon HS, Cole DC, Walter SD, Wells R, Hogg-Johnson SA, Griffith LE The use of individual participant data (IPD) for examining heterogeneity in meta-analysis of observational studies: An application to biomechanical workplace risk factors and low back pain. CIHR: \$201,838; 2004 - 2006. (Administered at McMaster University)

Stolee P, Egan M, Polatajko H, Cameron D, Rigby P, Switzer-McIntyre S, Beaton DE, MacDermid J, Hayes K, Colantonio A, Jaglal S, Berg K. A Proposal in response to the ORRAN Call for Research Theme Leaders. Ontario Rehabilitation Research Advisory Network Theme Leaders Network (ORRAN-TLN): \$120,000; 2005-2008.

Tompa E, Lavis JN, Mustard CA. The health and safety consequences of underemployment and contingent work. CIHR: \$134,643; 2002-2004 (Project #486)

Tompa E, Lavis JN, Mustard CA. The health and safety consequences of underemployment and contingent work.. WSIB RAC: \$13,024; 2002-2004 (Top-up to CIHR funding) (Project # 486)

Tompa E, Mustard CA, Sinclair S. Post accident earning and benefits adequacy and equity. NIOSH: \$150,000; 2004 - 2007. (Project # 406)

van der Velde G, Hogg-Johnson S, Kahn M, Maetzel A, Nagle G. Utility values for health state outcomes to two conservative treatments for neck pain (non-steroidal anti-inflammatory drugs and cervical spinal manipulation) obtained from a sample of neck pain patients and the general public: A pilot study. Ministry of Health and Long Term Care/Ontario Chiropractic Association Special Chiropractic Research Fund: \$48,490; 2002-2004. \$58,400; 2004 - 2005. (Project # 122)

van der Velde G, The Bone and Joint Decade 2000-2010 Task Force on Neck Pain and It's Associated Disorders: \$35,000; 2004 - 2005. (Project # 122)

*Wells RW, McGill S, Frazer M, Green H, Theberge N, Ranney D, Medley J, MacGregor C, Cole DC, Keir P, Moore A, Callaghan J, Haines T, Kerr MS, Naqvi S, Potvin J. Centre of Research Expertise for an action centre for the prevention of work-related musculoskeletal disorders. WSIB: \$2,035,000; 2003 – 2008. (Administered at University of Waterloo)

*Wells R, Cole DC, Tompa E, Naqvi S, Frazer M, Theberge N. Evaluation and sustainability of ergonomic interventions. WSIB: \$149,175; 2004 – 2006. (Administered at University of Waterloo) (project # 228)

*Yassi A, Bryce E, Gershon R, Bigelow P, Copes R, Corbière M, Daly P, Kerr MS, Noble M, Patrick D, Qureshi K. Barriers and facilitators to implementing protective measures against SARS for healthcare workers: A collaborative interdisciplinary study. CIHR: \$160,265; 2004 – 2006. (Administered at University of British Columbia)

Van Eerd D, Cole DC, Wells R, Ferrier S, Tompa E, Theberge N. Evaluating a partner-based participatory intervention for musculoskeletal disorders in a medium-sized workplace. CRE-MSD: \$7,500; 2005-2005 (Project # 270)

Research Grants Pending

Cassidy JD, Côté P, Carette S (Co- Principal Investigators), Bombardier C, Franche R-L, Cole DC, Ammendolia C, Reardon R, Mahomed N, Hamer H, Inman R, von Schroeder H, Gignac M, Evans M, Guzman J, Flannery J, Davis A, Andersen J, Loisel P, Wells R, WSIB- CRE. Centre of Research Expertise in Improved Disability Outcomes (CRE-IDO) WSIB: \$2,000,000; 2005-2010.

Franche R-L, Breslin C, Côté P, Hepburn G, Hogg-Johnson S, Mustard CA, Reardon R. Patterns of recurrences of work disability episodes associated with musculoskeletal disorders: Predictors, associated work trajectories, and implications for workers' quality of life. CIHR: \$100,000; 1 yr.

Franche R-L, Brenneman-Gibson J, Clarke A, Cole DC, Côté P, Gnam W, Kirsh B, Koehoorn M, MacEachen E, Mustard C, Myette L. Letter of Intent: Work disability management and mental health: building front-line capacity. CIHR: \$300,000; 5 yrs.

Gnam W, MacEachen E, Franche R-L, Scheiman S, Bagby M, Farvolden P, Mustard CA, Muntaner C. Centre for Research Expertise in Workplace Mental Health (CRE-WME). Proposal submitted to WSIB Networks of Centres of Research Excellence: WSIB RAC: \$1,994,000; 5 yrs

*Grimshaw J, Bombardier C, Klassen TP, McDonald J, Moher D, Tugwell P, Wright JM, Lavis J. Knowledge synthesis and translation by the Cochrane Collaboration in Canada. CIHR and CCOHTA: \$1,873,355; 2005-2010. (Project # 440)

Kerr M, Laschinger H, Mustard C, Van Bussel, E, Boucher p, Dupis SL, Schindel L. Evaluation of the Gentle Persuasive Approach to Preventing Client Aggression in residents of long-term care facilities in Ontario MOH-LTC: \$333,300; 2006 – 2007.

*Lacaille D, Gignac M, Beaton DE, Fortin P, Cox S, Anis A, Feldman D, Badley E, Marra C, Clarke A, Adam P, Backman C, Esdaile J, Cibere J, Abrahamowicz M, Hawker G, Bombardier C, Tugwell P, Davis A, Kopec J. Improving rheumatoid arthritis care and reducing the burden of rheumatoid arthritis. The Arthritis Society: \$300,000 per year. Arthritis Society National Research Initiative in Inflammatory Joint Diseases. 2006-2011. Note: Also submitted for the CIHR-IMHA team award.

*Loisel P, Franche R-L, et al. Développer, évaluer et implémenter des modes de prise en charge pour le retour et maintien au travail des personnel avant des troubles musculo-squelettiques. FRSQ: Programme en sante et society; \$800,000.

*Macdermid J, Beaton DE, Baptiste S, Buckley N, Hayden J, Henry J, Hogg Johnson S, Law S, McLean L, McMurtry R, Richards R, Roth J, Shaw L, Switzer-McInyre S, Westmoreland M, Williams R, Woodhouse L. Centre Advancing rehabilitation evidence, excellence, research. (CAREER) WSIB: \$1,859,175; 2005-2011.

Tompa E, Endicott M, de Wolff A, Franche R-L, Guzmán J, MacEachen E, Stone S, Gildiner A, Storey R, Lippel K, Ballentyne P, Eakin J, Kirsh B, Tucker E. CURA: Workers' compensation and the consequences of work injury. SSHRC: \$997,322; 5 yrs. (Project 402: Precarious Employment and People with Disabilities)

Research Personnel Funding

Bombardier C. CIHR Senior Scientist Award, University Health Network: 2003-2010.

Côté P. CIHR New Investigator Award: 2003-2008.

Etches J. CIHR Doctoral Award: 2003-2006.

Furlan A. CIHR Post-doctoral Fellowship Award: 2002-2005; Clinician Scientist Fellowship Award: 2004-2005 University of Toronto: Centre for Study of Pain

Gray G. Len Syme Fellowship Award:

Hayden J. Postdoctoral Fellowship Award, CIHR/Canadian Chiropractor Research Foundation. Development of a framework to identify clinically useful predictive factors for low back pain. (2004-2007)

MacEachen E. Mustard Fellowship in Work Environment and Health; IWH: 2003-2005.

MacEachen E. SSHRC Post-doctoral Fellowship Award: 2004-2006.

Mazumder A. Len Syme Fellowship Award:

Scott-Marshall H. Work-related insecurity in "post-standard" employment: Exploring the links to health. SSHRC: 2005-2007.

van der Velde G. CIHR Post-doctoral Fellowship Award: 2002-2005.

Research/Professional Collaborations and Networks, Appointments and Offices

AMMENDOLIA, Carlo

Member, Research Fund Allocating Committee, Canadian Chiropractic Research Foundation
Member, Canadian Chiropractic Association
Member Ontario Chiropractic Association
Member, Canadian Memorial Chiropractic College
Member, College of Chiropractors in Ontario
Member, Ontario Council of Acupuncture

BEATON, Dorcas

Canadian Representative, Scientific Committee, International Federation of Societies of Hand Therapy
Canadian Delegate, Council of the International Federation of Societies of Hand Therapy
Chair of Research Committee, American Society of Elbow 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
Founding Member, Canadian Society of Hand Therapists
Member, Upper Extremity Collaborative Group (Institute for Work & Health, American Academy of Orthopaedic Surgeons)
Member, Canadian Arthritis Network
Member, Allied Health Panel, CIHR
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

BIGELOW, Philip

Member, Society for Epidemiologic Research
Member, American Board of Industrial Hygiene
Member, American Academy of Industrial Hygiene
Member, Canadian Registration Board of Occupational Hygienists
Sub committee co-chair, Threshold Limit Values Committee, American Conference of Governmental Industrial Hygienists
Member, Academic-Community-Agency Network for Environmental Justice (ACA-NET)
Member, Mustard Fellowship Committee

BOMBARDIER, Claire

Member, Canadian Institutes of Health Research (CIHR) High Risk, Teams, Inventions (HTI) Peer Review Committee
Member, AMGEN Global Advisory Board in Inflammation
Co-Chair, Health Canada (Working Group), Food and Drug Act, Schedule A
Member, AMGEN - Kineret Registry Steering Committee, 2002 to present
Member, Merck -Etoricoxib Outcomes Study Steering Committee, 2002 to present
Member, Merck - Worldwide Arthritis Advisory Board (WAAB), 2002 to present
Member, Merck Frosst Rheumatology Medical Advisory Council (MEDAC), 2002 to present
Member, Canadian Arthritis Network, 2001 to present
Member, Advisory Board, SONORA Study, Abbott Pharmaceutical Company, 2000 to present
Member, Advisory Board, WHO International Task Force on Neck Pain, 1999 to present
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)
Fellow, Royal College of Physicians of Canada F.R.C.P.(C)
Member, Canadian Medical Association (CMA)

BRENNEMAN GIBSON, Jane

Member WSIB RAC Research Utilization Subcommittee
Member, Advisory Committee GTA Rehab Network Best Practices Day
Member KTE Community of Practice Planning Group
Chair, HSA Liaison Committee
Member of Planning Committee for KTE Spring Institute Alberta
Member, Research Advisory Committee, Peter Coyte CHSRF CIHR Chair
Panel Member, Jaime Guzman's research project (Project #111)
Member College of Speech Language Pathology and Audiology

BRESLIN, Curtis

Member, Ontario College of Psychologists
Member, American Public Health Association
Member, Canadian Psychological Association

COLE, Donald

Member, Scientific Committee, Canadian Association for Research in Work and Health
Acting Co-Director, Health and Environment Division of the International Potato Center (CIP)
Member, Centre for the Environmental Steering Committees
Member, Canadian & Ontario Public Health Associations
Member, Canadian Society of International Health
Royal College of Physicians and Surgeons of Canada, Fellow in Occupational Medicine and Community Medicine

CÔTÉ, Pierre

Member, Consortium for Chiropractic Research Centers, 1997 - present
Member' Scientific Advisory Planning Committee, Canadian Memorial Chiropractic College, August 2000 - present
Member, University of Toronto Epidemiology Executive Committee, 2003 - present
Member Scientific Secretariat, Bone and Joint Decade International Task Force on Neck Pain and its Associated Disorders, 2001 - present

CULYER, Anthony

Chair, Office of Health Economics Policy Committee
Chair, Office of Health Economics Editorial Committee
Chair, NICE Working Group on Economic Evaluation in Public Health
Co-Editor, Journal of Health Economics
Special Advisor, Canada Health Council
Fellow, Academy of Medical Sciences
Fellow (Hon), Royal College of Physicians of London

Fellow, Royal Society of Arts
Member, National Institute for Clinical Excellence R&D Committee
Member, Governing Board, International Health Economics Association
Member, Health Economists' Study Group
Member, Home Office Economics Panel
Member, Editorial Board, Medical Law International
Member, Editorial Board, Clinical Effectiveness in Nursing
Member, Academic Advisory Council, University of Buckingham
Member, Royal Economic Society

FRANCHE, Renée-Louise

Member, Ontario College of Psychologists
Member, Canadian Psychological Association

FRANK, John

Scientific Director, Canadian Institutes of Health Research -- Institute of Population and Public Health
Professor, Department of Public Health Sciences, Faculty of Medicine, University of Toronto
Senior Scientist, Institute for Work & Health, Toronto
Continuing Membership, Department of Community Health, Division IV (Life Sciences), School of Graduate Studies, University of Toronto
Member, Research Advisory Committee, WSIB
Chair, Advisory Council, PHAC – National Collaborating Centres on Public Health

FURLAN, Andrea

Member, Canadian Pain Society
Member, Guidelines Developing Committee, Canadian Chiropractic Association/Canadian Federation of Chiropractic Regulatory Board
Member, Cochrane Collaboration Non-randomised studies Methods Group

GUZMÁN, Jaime

Member, Scientific Secretariat, 2000-2010 Bone and Joint Decade Task Force on Neck Pain and Its Associated Disorders
Affiliate, Physiatrist Association of Spine, Sports and Occupational Rehabilitation, 2003 to present
Member, American Academy of Physical Medicine and Rehabilitation, 2001 to present
Member, Canadian Association of Physical Medicine and Rehabilitation, 2001 to present
Fellow, The Royal College of Physicians and Surgeons of Canada, 2003 to present
Member, Mexican Society of Rheumatology, 1991 to present

HAYDEN, Jill

Member, Canadian Chiropractic Association
Member, Ontario Chiropractic Association
Member, Prognosis Review Network (emerging group of Cochrane Collaboration)

HOGG-JOHNSON, Sheilah

Member, Scientific Secretariat, 2000-2010 Bone and Joint Decade Task Force on Neck Pain and Its Associated Disorders

IRVIN, Emma

Convenor, The Cochrane Library Users Group
Member, The Publishing Policy Group of the Cochrane Collaboration

KERR, Mickey

Academic Associate, Centre for Health and Well-Being, University of Western Ontario
Chair, Finance Committee, Canadian Association of Schools Nursing 2004 Nursing Research Conference
Acting Chair - Scholarships and Awards Committee, School of Nursing, University of Western Ontario, 2002 to present
Member, Year 3 Curriculum Planning Committee, School of Nursing, University of Western Ontario
Member, School Affairs Committee, School of Nursing, University of Western Ontario
Member, Graduate Affairs Committee, School of Nursing, University of Western Ontario
Project Steering Committee, The Change Foundation and the Ontario Hospital Association

KNOWLES CHAPESKIE, Kathy

Secretary, Ontario NAOSH Network
Member, Ontario NAOSH Network
Alternate Member for Ontario, Canadian NAOSH Committee
Member, IAPA Health & Safety Trade Show Conference Steering Committee

KOSNY, Agnieszka (Iggy)

Fellow, CIHR Strategic Training Program in the transdisciplinary approach to the health of marginalized populations
Member, Canadian Association for Research on Work and Health
Academic Partner, National Network of Environments and Women's Health (NNEWH)

KRISTMAN, Vicki

Member, Canadian Society for Epidemiology and Biostatistics
Member, Society for Epidemiology Research

MACEACHEN, Ellen

Member, Canadian Anthropology and Sociology Association
Member, British Sociological Association
Member, Canadian Association for Research on Work and Health,
Member, Selection Committee, University of Toronto PHS Social Science & Health Program
Assistant Professor (status only), University of Toronto Department of Public Health Sciences, Faculty of Medicine
Member, Strategic Planning Committee, Work Disability Prevention CIHR Strategic Training Program, Universite de Sherbrooke, Longueuil
Facilitator: IWH Qualitative Journal Club.

MUSTARD, Cam

Member, Expert Advisory Committee, Canadian Health Examination Survey, Statistics Canada
Member, Editorial Advisory Board, Longwoods Review
Member, Wellesley Central Health Corporation
Member, Occupational Health and Safety Council of Ontario, 2002 to present
Member, Medical Advisory Board, Health News, University of Toronto, 2002 to present

Member, Passport to Safety Standards and Advisory Board, 2002 to present
Member, Research Advisory Council, WSIB of Ontario, July 2001 to present
Member, Steering Committee, Toronto Region Research Data Centre, September 2005 to present
Member, Canadian Arthritis Network Partnerships and Sustainability Committee, 2005-2009
Member, International Advisory Board, 13th International Congress on Occupational Health Services, Utsunomiya, Japan, December 2005
Member, Scientific Organizing Committee: Sixth International Work, Stress and Health Conference, Miami, March 2006. APA/NIOSH
Member, Advisory Board Member, BRIDGE Program, Centre for Health and Environment Research, University of British Columbia, August 2004 to July 2006
Member, Task Force on the implementation of the CIHR Research Agenda on Workplace Mental Health. August 2004 – present

PENNICK, Victoria

Registered Nurses Association of Ontario
Regional Representative, Region 7 on Board of Directors, 2003-2005
Communications Officer, Nursing Research Interest Group, 2001-2005
Flemingdon Community Health Centre, Vice-Chair, Board of Directors, 2003-2006

REARDON, Rhoda

Member, Ontario Guidelines Collaborative
Chair, Physicians of Ontario Collaborating for Knowledge Exchange & Transfer (POCKET)

ROBSON, Lynda

Member, System Measurement Sub-Committee of the Occupational Health & Safety Council of Ontario
Member, Canadian Council on Health Services Accreditation Worklife Advisory Committee

SCOTT-MARSHALL, Heather

Member, Canadian Association for Research on Work and Health

SINCLAIR, Sandra

Member, Advisory Committee, Workers' Compensation Research Group
Member, Advisory Committee, Workers' Compensation Policy Review, School of Industrial Relations, Rutgers University
Member, International Association of Industrial Accident Boards and Commissions

SMITH, Peter

Member, Public Health Association of Australia (PHAA)
Member, Special Interest Group on Injury Prevention (PHAA)

TOMPA, Emile

Member, International Health Economics Association
Member, Mustard Fellowship Committee

van der VELDE, Gabrielle

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

Member, Canadian Chiropractic Association

Member, Ontario Chiropractic Association

Member, Canadian Memorial Chiropractic College

Member, The Chiropractors' Association of Saskatchewan

Member, Chiropractic Rehabilitation Association

Member, Canadian Memorial Chiropractic College Governors' Club

Teaching, Educational and Service Activities

AMMENDOLIA, Carlo

Teaching/Educational Role

Canadian Memorial Chiropractic College, Department of Graduate Studies and Research, 1996 - current

Service Activities

Grant Committees: Canadian Chiropractic Research Foundation, Fund Allocating Committee

Journal Referee: Journal of the Canadian Chiropractic Association

BEATON, Dorcas

Teaching/Educational Role

Assistant Professor: Occupational Therapy, University of Toronto, Oct 1995 - current

Graduate Appointments: Health Policy Management and Evaluation and Graduate Department of Rehabilitation Sciences

Course Coordinator: Measurement in Clinical Research, Health Policy, Management and Evaluation

Graduate Program, University of Toronto; Measurement Theory in the New Millennium - Graduate Department of Rehabilitation Sciences Outcome Measurement: Measurement Properties, University of Toronto

Lecturer: Occupational Therapy 1st year students on outcome measurement – October 2005.

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

BIGELOW, Philip

Teaching/Educational Role

Associate Professor: Department of Public Health Sciences, Faculty of Medicine, University of Toronto

Adjunct Professor: Department of Environmental and Radiological Health Sciences, Colorado State University

Adjunct Professor: Institute of Public Health, Florida A&M University

Adjunct Professor: Institute of Health Promotion Research, The University of British Columbia

Course Co-coordinator (with Ted Myers) CHL 5110H - Theory and Practice of Program Evaluation, University of Toronto

Course Co-coordinator (with Andrea Sass-Kortsak and Jim Purdham) - CHL 5910F - Introduction to Occupational Hygiene, University of Toronto.

Lecturer: CVOH 221 - Topics in Occupational Health and Safety, (risk assessment, program evaluation) Ryerson University

PhD Thesis Committee: Steven Thygeson (Colorado State University), Kathryn Nichole (University of Toronto)

Service Activities

Journal Referee: Journal of Agricultural Safety and Health; Environmental Health Perspectives, Journal of Occupational and Environmental Hygiene, Canadian Journal of Public Health

BIELECKY, Amber

Service Activities

Local Organizing Committee, CSEB-SER 2005: Epidemiology without Borders, Toronto

BOMBARDIER, Claire

Teaching/Educational Role

Director: Division of Rheumatology, University of Toronto

Professor: Medicine/Health Administration, University of Toronto

Guest Professor: University of Toronto, MSc, HAD 5302: Measurement in Clinical Research

Synthesis Session to, Guest Lecturer, University of Toronto, Clinical Epidemiology Students - PhD Thesis Course

Instructor: IWH Systematic Reviews Workshop

MSc Thesis Supervisor: Shahin Walji, Bindu Nair, Joel Gagnier, Roselynn Chuong, Shanas Mohamed

PhD Thesis Supervisor: Linda Li, Andrea Furlan, Ruben Tavares, Jill Hayden, Carlo Ammendolia

Member of Committee: Hans Oh (PhD program)

Director: Clinical Decision Making and Health Care, Research Division, Toronto General Research Institute, Toronto General Hospital, University Health Network

Member: School of Graduate Studies, Division of Community Health, University of Toronto

Member: School of Graduate Studies, Institute of Medical Science (IMS), University of Toronto

Staff Physician: Rheumatic Disease Unit, Mount Sinai Hospital, Toronto

Service Activities

Grant Committees:

Member: Multidisciplinary Clinical Research Center in Musculoskeletal Diseases (MCRC) Scientific Advisory Board, Dartmouth Medical School

Chair: Data Safety and Monitoring Board (DSMB) National Institute of Musculoskeletal and Skin Diseases (NIAMS), 2002 – current

Disease Management Core Instrument Committee: Arthritis Network, 2001 - current

Research Management Committee: Canadian Arthritis Network, 2005 – current

Member (Ad Hoc Reviewer): The Abbott Scholar Award in Rheumatic Diseases Program. 2002 – current

Team Leader: Effectiveness Task Force, 2004 - current

Grant Reviewer: Ontario Ministry of Health, The Arthritis Society, Medical Research Council, Fond de Recherche en Santé du Québec, National Health and Welfare Canada

Core Review Panellist: Ontario Guidelines for the Treatment of Musculoskeletal Disorders/Ontario

Musculoskeletal Therapy Review Panel: Health Canada (Emergency Care Research Institute)

Panellist: American Pain Society Clinical Guidelines Project – Low Back Pain 2005 - current

Review Committee: Best Research on Low Back Pain Commission de la santé et de la sécurité du travail (CSST)

Editorial Boards: American Journal of Medicine; Arthritis Care and Research; Co-ordinating Editor,

Cochrane Collaboration Back Review Group; Associate Editor, Arthritis Care and Research - current

Science Limited; Joint Bone Spine, International Edition; Nature Clinical Practice Rheumatology Journal

Advisory Board; Journal of Clinical Epidemiology Advisory Board, 2004 - current

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:

KTE in the research process. Applied Research Approaches in Health Studies: Advanced Seminar Class, York University, March 17 2005

KTE in the research process; for Theory and practice of Programme Evaluation class, CHL 5110H University of Toronto, Nov 2, 2005

BRESLIN, Curtis

Teaching/Educational Role

Assistant Professor: Department of Psychiatry, University of Toronto

University Course: (CHL 5804H) Health Behaviour Change, Dept. of Public Health Sciences

Service Activities:

Journal Referee: Journal of Psychology of Addictive Behaviours

Guest reviewer: American Journal of Preventive Medicine

Guest reviewer: Work, Stress, and Health Conference

Ad hoc reviewer: Journal of Adolescence

Ad hoc reviewer: Journal of Health Economics

Thesis Committee Member: Cameron Norman, University of Toronto

COLE, Donald

Teaching/Educational Role

Associate Professor: Department of Public Health Sciences, University of Toronto, 2001- 2004

Associate Program Director: MHSc Community Health & Epidemiology Program, 2004 -

Member: Doctoral and MHSc Selection Committees, PHS Epidemiology Program

Full Member: School of Graduate Studies, University of Toronto, 2004-

Associate Graduate Faculty: Department of Kinesiology, University of Waterloo, 1997 -

Adjunct Appointment to School of Geography and Geology, McMaster University, 1998 -

Member: Program Committee, Community Medicine Residency Program, University of Toronto, 2001-

Lead Instructor: Epidemiology II, University of Toronto, 2003 -

Lead Instructor: Global Health Research Methods, University of Toronto, 2003 -

PhD Thesis Supervisor: Irina Rivilis. Thesis to be determined. Epidemiology, University of Toronto: 2004 -

PhD Doctoral Committees: Lauren Griffith. Meta-analysis of biomechanical risk factors for back pain.

Epidemiology, University of Toronto: 2003 -

Post-doctoral: Ellen MacEachen. Organization, management commitment and workplace health in the context of contemporary work conditions. Mustard Fellow with the Institute for Work & Health: Sept 2003 - Aug 2005

Service Activities

Grant Committees: External Reviewer: L'institut de recherche en santé et en sécurité du travail (IRSST) Québec; Canadian Institutes of Health Research

External Grant Reviews: Michael Smith Foundation, 2003 - present; U.S. National Institutes of Health, Fogarty Centre: 2003 -

Journal Referee: American Journal of Epidemiology; American Journal of Industrial Medicine; Chronic Disease in Canada; Canadian Medical Association Journal; Social Science and Medicine; American Journal of Preventive Medicine; Biotech Central; Archives of Medical Research; Injury Prevention

CÔTÉ, Pierre

Teaching/Educational Role

Assistant Professor: Department of Public Health Sciences, University of Toronto, 2002 -

Assistant Professor: Department of Health Policy Management and Evaluation, University of Toronto (2003)

Adjunct Professor: School of Health Management and Policy, W.P. Carey School of Business, Arizona State University (2004)

Adjunct Professor: Department of Graduate Studies and Research, Canadian Memorial, Chiropractic College, 1997 –

Adjunct Professor: School of Nursing, Lakehead University (2005)

Member: Doctoral Program Renewal Working Group, Department of Public Health Sciences, Faculty of Medicine, University of Toronto

Collaborator: CIHR Work Disability Training Program, University of Sherbrooke (2005)

University Courses:

Laboratory in Epidemiologic Protocol Design (CHL 5408) Department of Public Health Sciences, University of Toronto; Non-experimental Design Course (HAD 5309) Department of Health Policy Management and Evaluation, University of Toronto

Bias, confounding and interaction. Non-experimental design course (HAD 5309). University of Toronto, January 2005.

PhD Committee: Carlo Ammendolia, Institute of Medical Studies, University of Toronto; Gabrielle van der Velde, University of Toronto, Esther Waugh, Clinical Epidemiology, University of Toronto

MSc Committee: Richard Foty, Epidemiology, University of Toronto; Mana Rezai, University of Toronto Stephanie Vermulen, University of Alberta; Paul Nolet, Lakehead University; Xiao Qing Yang, University of Toronto

Thesis Examiner:

Sujitha Ratnasingham, Master's in Epidemiology, University of Toronto.

Service Activities

Grant Committees: Canadian Institute for Health Research – Allied Health Professional Doctoral Fellowship and New Investigator Panel 2004-2005; Canadian Institute for Health Research (grant proposal reviewer) 2000 – present; Institut de Recherche en Santé et Sécurité au Travail du Québec (IRSST) (grant proposal reviewer) 1998 - present

Reviewer: Medicine & Science in Sports & Exercise, 2003 -

Reviewer: Spine, 2003 -

Associate Editor: Journal of the Canadian Chiropractic Association, 2003 -

Reviewer: The Spine Journal, 2003 -

Advisory Board: Cochrane Back Review group, 2003 -

Editorial Board Member: Journal of Manipulative and Physiological Therapeutics, 2000 -

Reviewer: The Lancet, 1999 -

CULLEN, Kim

Teaching/Educational Role

Assessing function for RTW. McMaster University. School of Rehabilitation Science. Physiotherapy Department.

CULYER, Tony

Teaching/Educational Role

Supervisor: 4 PhD students (U of York, England); Mentor: 2 PhD students (U of T)

ETCHES, Jacob

Teaching/Educational Role

Teaching Assistant: Biostatistics II (CHL5202), University of Toronto, Dept of Public Health Sciences, Winter 2005.

Service Activities

Local Organizing Committee, CSEB-SER 2005: Epidemiology without Borders, Toronto.

FERRIER, Sue

Service Activities

Board Member and Executive: Fife House Foundation

Grant Committees: Reviewer, Canadian Working Group on HIV and Rehabilitation

FRANCHE, Renée-Louise

Teaching/Educational Role

Professional Advisory Committee: CIHR Work Disability Training Program, Work Disability Prevention, Université de Sherbrooke, 2002 – present

Mentor: CIHR Work Disability Presentation Training Program, Université de Sherbrooke, 2003 - present

PhD Thesis Committee Member: Janet Parson, Institute of Medical Sciences, University of Toronto

Assistant Professor: University of Toronto, Faculty of Medicine, Department of Public Health Sciences and Graduate Department of Public Health Sciences, 2001 - present

Assistant Professor: Department of Psychiatry, Women's Mental Health Program, Faculty of Medicine, University of Toronto, 2000 - present

Associate Member: Women's Health Program, University Health Network, 2000 – present

Thesis Examiner: Winter 2005 - External examiner, PhD. Thesis of Sylvie Gravel, Public Health, Graduate Studies, Université de Montréal. Thesis supervisor, Jean-Marc Brodeur, Montreal.

Service Activities

Grant Committees: Canadian Institutes of Health Research (CIHR) Health Information & Promotion (HIP) Committee, Operating Grants Competition; Arthritis Society Scientific Review Panel -

Epidemiology/Health Services; WSIB Research Advisory Committee; Fonds pour la Formation de Chercheurs et l'Aide à la Recherche and Canadian Innovation Funds

Journal Referee: Journal of Psychosomatic Obstetrics and Gynecology; Canadian Journal of Behavioural Sciences

Plenary Committee, IWH, 2004 -

FRANK, John

Teaching/Educational Role

PhD Supervisor: Michael Ladouceur and Peter Smith, Institute of Medical Sciences, University of Toronto; Marcelo Urquia, Dept. of Public Health Sciences, University of Toronto.

PhD Committee Member: Ann-Sylvia Brooker and Ted Everson, University of Toronto.

Co-Taught (with Karin Domnick) CHL5004 H: "Introduction to Public Health," to >100 incoming graduate students, mostly MHS, University of Toronto.

Co-Taught (with Cam Mustard) CHL 5419 H: University of Toronto Doctoral Seminar, "Empirical Perspectives on Social Organization and Health"

Annual Lecture: Robert Wood Johnson Foundation, Health and Society Scholar's Program, UC Berkeley/UCSF

Service Activities

External Reviewer: IRRST/CSST; Serving 4th year on WSIB RAC

Journal Referee: International J. Epidemiology

Organizations: Chair, PHAC Advisory Council for 6 National Collaborating Centres on Public Health.

FURLAN, Andrea

Service Activities

Journal Referee: Cochrane Collaboration Back Review Group

Course Instructor: IWH Systematic Reviews Workshop

GUZMAN, Jaime

Teaching/Educational Role

Assistant Professor: Department of Internal Medicine, University of Toronto.

Tutor: (Attending presentations and student marking), Systematic Review Course, University of Toronto.

Mentor: CIHR Work Disability Prevention Strategic Training program.

Service Activities

Grant Committee: Reviewer for Alberta Heritage Foundation for Medical Research, WorkSafe Program, Workers Compensation Board of British Columbia

Journal Referee: J Rheumatology

Module Reviewer: The Foundation for Medical Practice Education

Nomination as a Mentor in the Disability Prevention CIHR Strategic Training Program, Universite de Sherbrooke, Longueuil, Quebec. Participation in summer session. Mentorship of two PhD students.

HAYDEN, Jill

Teaching/Educational Role

Lecturer (P/T): Canadian Memorial Chiropractic College, Department of Biological Sciences 1999 -

Canadian Memorial Chiropractic College, Department of Graduate Studies and Research, 2000 -

Guest Lecture: Prognostic Indices. Measurement in Clinical Research HAD5302, Department of Health Policy, Management and Evaluation Graduate Program, Clinical Epidemiology, University of Toronto, March 2005.

Instructor: IWH Systematic Reviews Workshop

Service Activities

Editorial Boards: Journal of Canadian Chiropractic Association, Cochrane Back Review Group

Journal Referee: British Medical Journal, The Spine Journal, Pain, Annals of Internal Medicine

HOGG-JOHNSON, Sheilah

Teaching/Educational Role

Assistant Professor: Department of Public Health Sciences, Faculty of Medicine, University of Toronto, 1995 -

Assistant Professor: Department of Health, Policy, Management and Evaluation, Faculty of Medicine, University of Toronto, 2001 -

Core Faculty Member: Graduate Program in Clinical Epidemiology and Health Services Research, University of Toronto, 1998 -
PhD Thesis (University of Toronto) - Supervisor: G. van der Velde
Committee Member: Anusha Raj
PhD Thesis (University of Toronto) C. Ammendolia, L. Griffith, J. Hayden, R. Martinussen, K. Ghelani, F. Ahmad
Mentor: Work Disability Prevention CIHR Strategic Training Program, Universite de Sherbrooke, Longueuil, Quebec
Project leader for PHS CHL xxxx Laboratory in Statistical Analysis, 2004/2005
Co-instructor for CHL5307 Introduction to Applied Biostatistics, Health Policy Management and Evaluation, University of Toronto

Service Activities

Grant Committees: External Reviewer for Workplace Safety & Insurance Board RAC
Journal Referee: Canadian Medical Association Journal, Scandinavian Journal of Work, Environment and Health, Occupational and Environmental Medicine, Chronic Diseases in Canada, Journal of Clinical Epidemiology, American Journal of Industrial Medicine

IBRAHIM, Selahadin

Teaching/Educational Role

Lecturer: Department of Public Health Sciences, Faculty of Medicine, University of Toronto, 2002 -
Committee member: (Donald Cole was the Supervisor) for Renee Sebastian's Master's thesis defence in July 2005.
2/12 hour class in multilevel modeling for graduate students in Epidemiology

IRVIN, Emma

Teaching/Educational Role

Instructor: IWH Systematic Reviews Workshop
Instructor: Systematic Reviews Course. University of Toronto, Health Policy, Management and Evaluation Graduate Program Department.

Service Activities

Convenor: Cochrane Library User Group Meeting; Melbourne, Australia: XIII Cochrane Colloquium.

KENNEDY, Carol

Teaching/Educational Role

Lecturer: Department of Physical Therapy, University of Toronto: 1996 -

KERR, Mickey

Teaching/Educational Role

Assistant Professor: School of Nursing, Faculty of Health Sciences at the University of Western Ontario, with a Master's core membership status in the Faculty of Graduate Studies.
Assistant Professor (status only), Department of Public Health Sciences, Faculty of Medicine Associated Member, Limited status, School of Graduate Studies, University of Toronto
MSc Thesis Committee Member: Julianne Natale, University of Waterloo; Nancy Robertson and Kinga Kluska, University of Western Ontario; Irina Rivilis, University of Toronto.
MscN Thesis Examination Chair: Heidi Siu and Veron Ash, University of Western Ontario.

MScN Thesis Supervisor: Sherry Frizell, Grant Fisher.

MscN Thesis Examination Committee Member: Cheryl Mayer, University of Western Ontario.

MSc, PhD Thesis Committee Member: Nancy Robertson, University of Western Ontario.

PhD Thesis Committee Member: Nancy Purdy, University of Western Ontario.

Service Activities

Grant Committees:

Panel Member: Ontario Government Scholarship Selection Committee, 2002-2005.

Reviewer: National Health Research Development Program (NHRDP), Medical Research Council, The Workplace Safety and Insurance Board of Ontario, and the Workers' Compensation Board of British Columbia.

Journal Referee: Canadian Journal of Public Health; Canadian Journal of Nursing Research; Canadian Medical Association Journal; Occupational and Environmental Medicine; International Journal of Law and Psychiatry; American Journal of Industrial Medicine; Social Science and Medicine; American Journal of Public Health and Pediatrics

KOSNY, Agnieszka (Iggy)

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

KRAMER, Dee

Teaching/Educational Role

Professor: Topics in Occupational Health & Safety, Certificate Program on Occupational Health & Safety, Ryerson University, 1999 –

KRISTMAN, Vicki

Teaching/Educational Role

Lecturer: Genetic Counselling 1st year Masters students, lecture on Concepts in Epidemiology – Oct 2005

Director: Teaching Assistants' Training Programme – 2003-2005

Service Activities

Journal Referee: Occupational and Environmental Medicine, Journal of Epidemiology and Community Health

MACEACHEN, Ellen

Teaching/Educational Role

Assistant Professor (Status), Department of Public Health Sciences, University of Toronto

Co-chair Mentor: Work Disability Prevention CIHR Strategic Training Program, Universite de Sherbrooke, Longueuil, Quebec.

Mentor: Adam Cann, PhD (Candidate), CIHR Work Disability Prevention Program, Special Project and Training Practicum Proposals for WDP 951, 953, 921.

Service Activities

Journal Referee: Health, Education and Behaviour; Safety Science

Member, Strategic Planning Committee. Universite de Sherbrooke, Longueuil, Quebec

MUSTARD, Cam

Teaching/Educational Role

Professor: Public Health Sciences, University of Toronto, July 2002 -
Professor (Part-time), Clinical Epidemiology & Biostatistics, McMaster University, July 2003 - June 2006.
Review Panel Member, Comparative Program in Health and Society, Munk Centre for International
Studies, University of Toronto

Service Activities

Reviewing Activity; Granting Agencies and Review Panels
Member: Fellowship Award Panel, Comparative Program on Health and Society, Munk Centre for
International Studies, University of Toronto
Member: Research Committee, Association of Workers' Compensation Boards of Canada, Feb 2004 -
Journal Referee: Editorial Advisory Board, Longwoods Review; Journal of Epidemiology and Community
Health; Health Services Research Journal; American Journal of Public Health; Social Science and
Medicine; Medical Care; Injury Prevention; Journal of Psychosomatic Research
Member: Organizing Committee, Society for Epidemiologic Research and Canadian Society for
Epidemiology and Biostatistics Joint Meeting, Summer 2005, Toronto
College of Reviewers, Canada Research Chairs Program
Chair, Strategic Health Services and Policy Research Panel, Canadian Institutes of Health Research, March
2005.
Chair, CIHR Review Committee, Pilot Project Grants in Strategic Health Services and Policy Research
Theme Areas, March 2005.
Review Panel Member, Health Services and Policy Research Support Network, Michael Smith Foundation
for Health Research, April 2005.
Review Panel Member, US National Institute of Child Health and Human Development Special Emphasis
Panel, April 2005.

PENNICK, Vicki

Teaching/Educational Role

Member: Course Planning Committee, Determinants of Community Health Course, Faculty of Medicine,
University of Toronto. 1992 - present
Lecturer (status only): Department of Public Health Sciences, Faculty of Medicine, University of Toronto.
2005
Associate Member Limited: School of Graduate Studies, University of Toronto. 2005
Tutor: (Year 1) Determinants of Community Health Course, Faculty of Medicine, University of Toronto.
1992 - 2005.
Tutor: Putting the person at the centre. University of Toronto Centre for the Study of Pain - Interfaculty
Pain Curriculum. 2003 - present
Marking Student presentations: (Year 2) Determinants of Community Health Course, Faculty of Medicine,
University of Toronto. 1992 - present

Service Activities

Reviewer: Open Research Grant Proposals. Registered Nurses' Association of Ontario Nursing Research
Interest Group. 2001 - 2005

ROBSON, Lynda

Service Activities

Grant Reviewer: Health Research Council of New Zealand

Journal Referee: American Journal of Evaluation, Safety Science
Working Paper Reviewer: IWH Working Paper Editorial Committee
Abstract Reviewer: Registered Nurses Association of Ontario 3rd Annual International Conference on Healthy Workplaces in Action

SCOTT-MARSHALL, Heather

Service Activities

Journal Referee: Social Science and Medicine

SINCLAIR, Sandra

Teaching/Educational Role

Assistant Professor: McMaster University, School of Rehabilitation Sciences, 2002 -
McMaster University, School of Rehabilitation Sciences
BHSc (PT) Program, Unit 6, 1995-1996
BHSc (OT) Program, Unit 6, 1998-2000
MSc (OT) 747 Applying Evidence in Practice, 2003-2005

Service Activities

Journal Referee: American Journal of Industrial Medicine
External Reviewer: WSIB Research Advisory Committee

SMITH, Peter

Teaching/Educational Role

Co-teacher - Labour Studies 3D03E course: Occupational Health and Safety at McMaster University.
Department of Labour Studies, Faculty of Sociology

Service Activities

Journal Referee: Australia New Zealand Journal of Public Health; Epidemiology and Community Health

TOMPA, Emile

Teaching/Educational Role

Adjunct Assistant Professor: Public Health Sciences, University of Toronto. May 2004 -
Adjunct Assistant Professor: Department of Economics, McMaster University: 2001 -
Course Co-instructor: Advanced Topics in Health Economics (ECON 791)
Course Co-instructor: Advanced Topics in Labour Economics (ECON 782)
Co-instructor: Contemporary Issues in the Economics of Health and Health Care (Economics 799),
McMaster University, Winter 2005.
Guest Lecturer on economic evaluation. Theory and Practice of Programme Evaluation (CHL 5110H),
University of Toronto, Oct 2005.
Scott H. Ph.D. Thesis Defence

Service Activities

Journal Referee: Social Science and Medicine; Journal of Health Economics
Theses Committee Member: H. Scott, PhD University of Toronto; H. Alamgir, PhD University of B.C.
Grant Review Committee: Health Canada
Post-doctoral Mentor: H Scott, Social Science and Humanities Post-doctoral Award, beginning October 2005.

VAN DER VELDE, Gabrielle

Teaching/Educational Role

Associate Professor; Division of Graduate Studies and Research, Canadian Memorial Chiropractic College.
Supervisor: Canadian Institutes for Health Research - Canadian Memorial Chiropractic College Partnered
Student Summer Research Position, 2003-2005.

Service Activities

Editorial Board Member: Journal of the Canadian Chiropractic Association.

Adjunct Scientists

Dr. Peri Ballantyne (since 2001)

Assistant Professor, Faculty of Pharmacy, University of Toronto

Peri Ballantyne, a health sociologist, is Assistant Professor, Faculty of Pharmacy, and Department of Public Health Science. Her research interests include the sociology of aging and the life course, the sociology of work and health, gender as a determinant of health, and the sociology of pharmaceutical health care. In qualitative research, Dr. Ballantyne uses applied ethnography to examine the context and meaning of phenomenon such as illness, disability, health, work and non-work, poverty, social support, and medication use. Examples of recent work include examination of the experience and context of arthritis and its influence on patients' decision-making regarding treatment (sponsored by the Centre for Research in Women's Health), and the health trajectories of long-term injured workers from Ontario (sponsored by the Institute for Work & Health). She also conducts survey research, and is currently examining profiles and patterns of use of medicines among the elderly, using the National Population Health Survey. This is part of a developing program of research examining the use of medicines and medicine-use decision-making in response to perceptions of health, illness, risk, need, and entitlement in the middle-aging and elderly population.

Dr. Michele Battié (since 2003)

Professor, Department of Physical Therapy, University of Alberta

Dr. Michele Crites Battié is a Professor in the Department of Physical Therapy of the Faculty of Rehabilitation Medicine of the University of Alberta and a Tier 1 Canada Research Chair in Common Spinal Disorders. She received BSc degrees from Washington State University and the University of Washington, MSc degree from the University of Washington and PhD from the University of Gothenburg, Sweden. She worked as a Research Associate Professor with the Department of Orthopaedic Surgery at the University of Washington prior to joining the University of Alberta in 1995. Her goal is to elucidate the underlying causes and mitigating factors of common disorders and degenerative conditions affecting the spine including seminal work on the role of psychosocial factors in work-related back pain reporting and the influence of familial and genetic influences on lumbar disc degeneration. Dr. Battié's work on common spinal disorders has been recognized with numerous international research awards, including four Volvo Awards from the International Society for the Study of the Lumbar Spine and a Kappa Delta Award from the American Academy of Orthopaedic Surgeons. Her research has been published in a wide range of journals, and supported by the National Institutes of Health of the United States, the Canadian Institutes of Health Research, The Finnish Academy, the Alberta Heritage Foundation for Medical Research and others.

Dr. Linda J. Carroll (since 2004)

Associate Professor, Department of Public Health Sciences, University of Alberta, Canada

Dr. Linda Carroll is an associate professor of epidemiology in the Department of Public Health Sciences at the University of Alberta and holds a Health Scholar Award from the Alberta Heritage Foundation for Medical Research. She is also an adjunct professor at the University of Saskatchewan and an associated scientist at the Alberta Centre for Injury Prevention and Research. Her clinical background is in health psychology, and 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. Carroll was a member of the scientific secretariat an international task force, the WHO Collaborating Centre on Neurotrauma's Task Force on Mild Traumatic Brain Injury, which recently published a Journal of Rehabilitation Medicine supplement reporting their findings from a

systematic review of the world literature on mild traumatic brain injury. She is currently a principal investigator and member of the administrative committee and the scientific secretariat of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders.

Dr. J. David Cassidy (since 1997)

Senior Scientist, Division of Outcomes and Population Health, Toronto Western Hospital Research Institute

Dr. David Cassidy is a senior scientist in the Division of Outcomes and Population Health at the Toronto Western Hospital Research Institute and holds the new endowed Chair in Artists' Health within the University of Toronto's Health Network. He is formerly an associate professor in epidemiology and medicine at the University of Alberta and is currently an adjunct professor in the Department of Public Health Sciences at the University of Alberta. He is also a guest research professor at the Section for Personal Injury Prevention at Karolinska Institute in Stockholm, Sweden. Dr. Cassidy holds a Bachelor's degree in Anatomy, a Master of Science in Surgery and a Doctorate in Pathology from the College of Medicine at the University of Saskatchewan. He has graduate training in epidemiology and biostatistics from Tuft's University in Boston, the Johns Hopkins School of Public Health in Baltimore and from Erasmus University in Rotterdam. Dr. Cassidy's research interests include musculoskeletal and injury epidemiology. He is the scientific secretary for the World Health Organization's Collaborating Centre Task Force on Mild Traumatic Brain Injury and the Decade of the Bone and Joint 2000-2010 Task Force on Neck Pain. He is also a member of the expert working group on mild traumatic brain injury at the Centers for Disease Control and Prevention in the United States.

Dr. Joan Eakin (since 1998)

Professor, Department of Public Health Sciences, Faculty of Medicine, University of Toronto

Joan M. Eakin is Professor in the Department of Public Health Sciences in the Faculty of Medicine at the University of Toronto. With a disciplinary background in the social sciences (PhD Sociology McGill University), her research, teaching and graduate research supervision focus on the social dimensions of work and health, and on qualitative research methodology. Her research program in the work/health arena has been directed in particular to issues of health and prevention in very small workplaces where she has studied workers, employers, and the work environment in relation to the workplace determinants of health and illness, the social relations of work, prevention and health promotion, and, more recently the impact of institutional practices and policies of return to work and work-related disability. She is currently engaged in a study of frontline prevention and claims management work in Ontario's Workplace Safety and Insurance Board. She teaches graduate-level courses in qualitative analysis and has lectured widely on qualitative methodology. She founded and directs QUIG (Qualitative Inquiry Group), a collective of qualitative researchers, and hosts a lecture series and forum for leading edge cross-disciplinary advancement of qualitative method. She recently organized and hosted an invitational national workshop on the teaching of qualitative method in the health sciences.

Dr. Monique Gignac (since 2003)

Scientist, Division of Outcomes & Population Health, Toronto Western Hospital

Dr. Monique Gignac is a Scientist with the Division of Outcomes and Population Health and a research investigator with the Arthritis Community Research and Evaluation Unit at the University Health Network (UHN). She is also an Assistant Professor in the Department of Public Health Sciences at the University of Toronto. Dr. Gignac is a social psychologist who studies coping and adaptation to chronic stress, especially chronic illness and disability. With funding from CIHR and the Canadian Arthritis Network (CAN) she is currently examining longitudinally the coping efforts and adaptations that individuals with arthritis disability use to manage their condition and remain employed. This work will

provide information about behaviours that enhance or create risks to health and can be applied to interventions aimed at minimizing the impact of chronic disabling health conditions. It is part of an ongoing program of research to investigate factors associated with the independence of people with arthritis and their families in different domains of life. Dr. Gignac's other research includes examining the coping and adaptation of older adults with osteoarthritis and osteoporosis and relating these efforts to changes in adults' health status, disability, and independence, as well as research examining the provision of care to people with arthritis in the community. She is also involved in research examining early osteoarthritis and changes in the trajectory of OA over time, shifts in the meaning of illness, interventions to helping people with arthritis maintain or regain greater independence, and biopsychosocial factors affecting pain, fatigue, and decision-making.

Dr. Michel Grignon (since 2005)

Assistant Professor, Department of Economics and Department of Gerontology, McMaster University

Dr. Michel Grignon is a professor in the Department of Economics and the Gerontology Studies Program at McMaster University. He has Master's equivalent from the National School for Statistics and Economics, France, and a PhD in Economic History from Ecole des Hautes Etudes en Sciences Sociales, Paris, France. 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 does research on the economics of health care distribution and delivery, including determinants and patterns of health care consumption across income and age groups. Dr. Grignon has also undertaken econometric analysis of the impact of taxes on tobacco consumption in France.

Dr. C. Gail Hepburn (since 2004)

Assistant Professor, Department of Psychology, University of Lethbridge

Dr. C. Gail Hepburn is an Assistant Professor in the Department of Psychology at University of Lethbridge. She holds a BSc from Trent University and an MA and PhD from Queen's University. Her area of specialization is organizational psychology. She holds an Associate Graduate Faculty appointment in the Department of Psychology at the University of Guelph. Hepburn's 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. A scientist at the Institute for Work & Health from 2000, Hepburn accepted a position at the University of Lethbridge in the fall of 2004.

Dr. Linn Holness, (since 2000)

Director, Gage Occupational & Environmental Health Unit, University of Toronto and St. Michael's Hospital

Dr Linn Holness is the Director of the Gage Occupational and Environmental Health Unit, a collaborative program of the University of Toronto and St Michael's Hospital. She is an Associate Professor in the Departments of Public Health Science, Medicine and Health Policy, Management and Evaluation and the Centre for Industrial Relations at the University of Toronto and Chief of the Department of Occupational and Environmental Health at St Michael's Hospital. Dr Holness is the Director of the Centre for Research Expertise in Occupational Disease, established with funding from the Ontario Workplace Safety and Insurance Board. Her main research interest has been occupational skin and lung disease, occupational health services program delivery and workplace health and safety issues in inner city.

Dr. William Johnson (since 2003)

Professor, School of Health Administration & Policy, Arizona State University

William G. Johnson, Ph.D., is a Professor of Economics in the School of Health Management & Policy and the Department of Economics in the W. P. Carey School of Business at ASU where he teaches graduate courses on health and managerial economics and health care outcomes. He has previously held appointments at the medical schools of Rutgers University, the State University of New York and the University of Arizona. He authored the first empirical studies of labor market discrimination against persons with disabilities and is the author or co-author of nearly every subsequent empirical study of the problem. He also completed the first interview study of the families of the victims of asbestos related death and disease in the United States and Canada. In regards to workers' compensation, Professor Johnson was Principal Investigator or co-investigator on the first studies of workers' compensation health care costs in the United States; the first interview study of injured men and women in the United States and the largest interview study of injured workers (conducted in Ontario). He is one of the principal authors of the Harvard Medical Practice Study, the largest study to date of medical malpractice. His current research focuses on access to care, occupational illness and injury, the effects of health on work and other activities, health care outcomes and the development of health information systems for use in research. He has a number of professional affiliations, including the National Academy of Social Insurance, the Collegium Ramazzini (Carpi, Italy), the **NIH** Review Panel for Health Services Research, the National Academy of Science, the National Disability Research Institute and the World Health Organization Collaborating Center Task Force on Neck Pain.

Dr. Mieke Koehoorn (since 2004)

Assistant Professor, Department of Health Care & Epidemiology, University of British Columbia

Dr. Koehoorn is an Assistant Professor with the Department of Health Care & Epidemiology, University of British Columbia and a Michael Smith Foundation for Health Research Scholar. She also holds an appointment with the School of Occupational and Environmental Hygiene, University of British Columbia. Her research interests focus on the epidemiology of work-related musculoskeletal injuries, in particular back injuries among health care workers, school custodians and workers in heavy industries. Koehoorn also conducts research on the relationship between work organization and mental disorders among health-care workers, and the epidemiology of injuries among young workers.

Dee Kramer (since 2005)

Manager: Research & Knowledge Transfer, Centre for Research Expertise in Musculoskeletal Disorders (CRE-MSD), University of Waterloo

Dr. Dee Kramer is the Manager of Research and Knowledge Transfer at the Centre of Research Expertise in Musculoskeletal Disorders (CRE-MSD) at the University of Waterloo. She is also an adjunct professor in the School of Occupational and Public Health at Ryerson University. Her research interest is in knowledge transfer. She focuses on creating knowledge-broker networks with researchers and safety, employer and labour organizations in order to facilitate the adoption of research. She works with stakeholder groups to enhance the applicability of the research to workplaces and the uptake of the research messages. She also evaluates the effectiveness of knowledge transfer with workplace parties, using network theory and community-based research as her conceptual framework. Kramer holds a bachelor's degree in psychology and a master's degree in environmental studies from York University. She also completed her master's in public health sciences and her PhD in adult education from the University of Toronto. Kramer is a former technical writer and journalist. She has written for over 35 different publications and organizations, including *Canadian Occupational Safety Magazine*, *OHS Canada*, the Canadian Centre for Occupational Health and Safety, and the HIV Ontario Observation Database. She was also a staff writer for *Supplylink Magazine*, an industrial safety trade magazine. Her

writing focused on occupational health and safety, but she was also published in medical, business, agricultural, and engineering publications.

Dr. Niklas Krause (since 2003)

Assistant Professor of Medicine, Division of Occupational & Environmental Medicine, University of California at San Francisco

Dr. Niklas Krause is an Assistant Professor of Medicine at the University of California at San Francisco. His research focus has been the epidemiology and prevention of work-related musculoskeletal and cardiovascular diseases and disability. He is co-principal investigator on a new IWH study investigating predictors of return to work after low-back injury among WCB claimants. Dr. Krause is also investigating the effects of job stress, social support, and work organizational and ergonomic factors (including interventions) on health and disability in various populations including hotel workers, public transit operators, engineers, graphic designers, call center service workers, and California workers' compensation claimants.

Dr. Heather Laschinger (since 2004)

Professor and Associate Director Nursing Research

Dr. Heather K. Spence Laschinger is Professor, and Associate Director Nursing Research at the University of Western Ontario, School of Nursing, Faculty of Health Sciences in London, Ontario. Since 1992 she has been Principal Investigator of a program of research designed to investigate the impact of nursing work environments on nurses' workplace health and work behaviours using Rosabeth Moss Kanter's organizational empowerment theory. Publications of this work have attracted considerable interest from researchers, managers, and graduate students from both nursing and other disciplines around the world. In 2003, in recognition of her extraordinary excellence in nursing research Heather was awarded the Sigma Theta Tau International *Founders Award for Excellence in Research*. The Canadian Institutes of Health Research recently listed her as one of Canada's most productive researchers in mental health in the workplace during 1991 to 2002. Currently, she is Co-Principal investigator on a national study "*A Profile of the Structure and Impact of Nursing Management in Canadian Hospitals*". This study will profile nursing leadership/management structures in teaching and non-teaching hospitals across the country. During year 2003, she has been a consultant for several national initiatives examining strategies to measure quality indicators of nurses' worklife. She is also Chair of the Leadership Panel in the Registered Nurses Association of Ontario's Best Practice Guidelines for Healthy Workplace Environments.

Dr. Louise Lemieux-Charles (since 2000)

Associate Professor & Chair, Department of Health Policy, Management & Evaluation, University of Toronto.

Dr. Louise Lemieux-Charles has research interests in the areas of performance management, health human resource management, organizational learning, knowledge transfer and organization of health systems. She holds a master's degree in psychiatry and community health, and a PhD in organizational theory and management as applied to health care both from the University of Toronto. She has a number of research grants examining issues of evidence and decision-making in health-care organizations and management of organizational performance.

Dr. Anne Moore (since 2004)

Assistant Professor, School of Kinesiology & Health Science, York University

Dr. Anne Moore is an Assistant Professor in the School of Kinesiology and Health Science at York University, Toronto. She has a BSc in Mechanical Engineering from Queen's University, and is a professional engineer (PEng). She obtained both her MSc and PhD in Kinesiology from the University of Waterloo specializing in Occupational Biomechanics/Ergonomics. Her research interests include physical exposure assessment for Work Related Musculoskeletal Disorders of the Upper Limb, Occupational EMG 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 (since 2004)

Chair in Psychiatry and Addictions Nursing Research, CAMH

Dr. Muntaner is currently a the Chair in Psychiatry and Addictions Nursing Research, Social Policy and Prevention Research Department at the Centre for Addictions and Mental Health (CAMH) and Professor at the Faculty of Nursing and cross-appointed to the Department of Public Health Sciences, Faculty of Medicine, University of Toronto. He has a diverse educational background with BSc in Mathematics and Natural Sciences from Lycée Francais, an M.D. from the University of Barcelona, Internships in Neurology and Psychiatry, a Ph.D. in Social Psychology, an MHS in Psychiatric Epidemiology and post-doctoral training at the National Institute on Drug Abuse Addiction Research Center in Baltimore, Maryland, and the National Institute of Mental Health. Dr. Muntaner is an internationally renowned leader in the literature on the social determinants of health with more than 120 publications in professional journals, and over 35 book chapters, monographs, and reports. In addition, Dr. Muntaner has expertise in basic and applied research via his collaborations with European Union researchers and international labor organizations. He has conducted research in disadvantaged communities in the U.S., the European Union, Latin America and Western Africa and has provided intellectual leadership for public health with his pioneering work in areas of health disparities and social inequalities in health. The recipient of many peer reviewed grants, he has also conducted research and collaborated with investigators in Canada, Spain, Sweden, Mali, Mexico, and Chile and worked with labor unions in the U.S., Sweden and Spain. He is currently an Advisor on social determinants of health to the Minister of Health of the Bolivarian Republic of Venezuela. An active and dedicated scholar in social epidemiology for many years, Dr. Muntaner has contributed many policy resolutions on social determinants of health to the APHA including a study of community violence; expansion of OSHA regulations over home work places; and elimination of racism in maternal and child health. He presented, organized, or chaired more than 100 sessions on social determinants of health. His awards include one in Behavioral Pharmacology and Toxicology from the Association for Behavioral Analysis, the Fleming Award (Oxford University), a Fulbright/Ministry of Health and Consumer Affairs Fellowship and the Wade Hampton Frost Award from the American Public Health Association.

Dr. Aleck Ostry (since 2003)

Assistant Professor, Department of Healthcare & Epidemiology, University of British Columbia

Dr. Ostry is an assistant professor in the Department of Health Care and Epidemiology at the University of British Columbia where he developed and taught most of the courses on the social determinants of health and served as principal investigator on five studies, garnering approximately \$2.5 million dollars in competitive research funds. His research currently involves collaborations with several groups, including the University of Melbourne's School of Population Health, the University of New South Wales, in Sydney, and the SSHRC funded Community University Research Alliance (CURA) in British Columbia. Dr. Ostry is also a lead investigator with NEXUS (a Micheal Smith Foundation for Health Research

funded project at UBC) and is working on studies of job strain among healthcare workers with this group. Dr. Ostry holds graduate degrees in history and health services planning, and a doctorate in epidemiology. His work is inter-disciplinary and his method of working is collaborative across many academic disciplines. He conducts a broad program of research on the social determinants of health with a focus on the determinants of workplace health, nutrition policy and health and, the social determinants of rural and northern health. He currently holds two scholar awards: one, a new investigator award (2000-2005) from the Canadian Institutes for Health Research and another, a scholar award (2002-2007), from the Michael Smith Foundation for Health Research.

Dr. Glenn Pransky (since 1997)

Director, Centre for Disability Research, Liberty Mutual Research Centre for Safety & Health

Dr. Glenn Pransky directs the Centre for Disability Research, and holds appointments at the University of Massachusetts Medical School and School of Public Health, as well as the Harvard School of Public Health, Department of Occupational and Environmental Health. His research interests are in the areas of disability and outcome measurement particularly for work-related musculoskeletal disorders. Dr. Pransky holds an MD from Tufts University and a master's degree in occupational health from the Harvard School of Public Health in Massachusetts.

Dr. Susan Rappolt (since 2004)

Associate Professor, School of Rehabilitation Sciences, University of Toronto

Susan Rappolt is an occupational therapist and sociologist who studies models to promote research utilization in clinical practices and to enhance organizational capacity to support evidence-based professional practices. She is also studying the effectiveness of occupational therapy for re-engagement work roles following illness or injury. Dr. Rappolt holds appointments in the Department of Occupational Therapy, the Graduate Department of Rehabilitation Science, Public Health Sciences, and the Knowledge Translation Program at the University of Toronto, and is a Senior Scientist at the Toronto Rehabilitation Institute.

Dr. Robert Reville (since 2003)

Director, RAND Institute for Civil Justice

Robert Reville is the Director of the RAND Institute for Civil Justice (ICJ) and the Co-Director of the RAND Center for Terrorism Risk Management Policy (CTRMP). He was appointed Director of the ICJ in October 2002, after serving as research director for three years. As a labor economist, Dr. Reville focuses on compensation policy, and has a national reputation in workplace injury compensation policy and the impact of disability on employment. He was recently appointed to the Board of Scientific Counselors of the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention. He also serves on the Workers' Compensation Steering Committee of the National Academy of Social Insurance. As Director of the Institute for Civil Justice, Dr. Reville leads a highly respected research organization within RAND that provides empirical research to inform policy decision making on class actions and mass torts, jury verdicts, administration of justice, workers' compensation and other civil justice issues. As a founding Co-Director of the Center for Terrorism Risk Management Policy, Dr. Reville has built a new center within RAND to address policy issues related to terrorism victims' compensation, liability, risk management, risk modeling and insurance. Dr. Reville received his Ph.D. in economics from Brown University.

Dr. Judith Shamian, (since 2001)

President and CEO, the Victorian Order of Nurses

Dr. Judith Shamian is the president and chief executive officer of the Victorian Order of Nurses. Previously, Shamian was the executive director, Office of Nursing Policy, Health Policy & Communications Branch, Health Canada. Her work has focused on the areas of leadership, health-system outcomes, healthy workplaces and healthy workforce issues. Shamian is a co-investigator on the International Hospital Outcomes Consortium, for which she recently led the Ontario arm of the study. Dr. Shamian attended Concordia University in Montreal, New York University and earned her PhD from Case Western University in Ohio. She is currently a Professor at the University of Toronto, Faculty of Nursing, and maintains an active research portfolio as a Principal Investigator, Co-Investigator and Decision-maker. Her work has focuses in the areas of leadership, health system outcomes, healthy workplaces and healthy workforce issues. Widely published internationally, her work has taken her to every Canadian province and territory, as well as throughout the Americas, Eastern Europe, China, Israel, Africa and the Caribbean. She has collaborated on a number of IWH studies examining the health of health-care workers.

Dr. Harry Shannon (since 2004)

Program in Occupational Health and Environmental Medicine, McMaster University

Harry Shannon is a full Professor in the Department of Clinical Epidemiology and Biostatistics and was the Acting Chair of the department for a year in 1997-8. In 1999, he was appointed the Director of McMaster's Program in Occupational Health and Environmental Medicine, a position he still holds. In 1991 Dr Shannon was seconded part-time as a Senior Scientist to the Institute for Work & Health in Toronto and in 2004 was appointed as Adjunct Scientist. Dr Shannon's research interests have concentrated on work and health. His PhD thesis examined occupational accidents at a large automobile plant. He then conducted a series of mortality and cancer morbidity studies on workers in nickel mining and processing, glass fibre production, lamp manufacturing, etc. For the last decade, he has returned to research on occupational injuries. Several major studies include: a case-control study of low back pain at a large General Motors complex; a study of upper extremity disorders at the Toronto Star; and examination of the role of organizational factors in workplace safety. The back pain study led to his being a co-recipient of the Clinical Biomechanics award of the International Society of Biomechanics. His interest in organizational factors continues, as does his work in understanding how to create safer and healthier workplaces. Overall he has published nearly 100 papers in peer-reviewed journals, as well as numerous other reports and book chapters. Dr Shannon has been involved in the founding of the Canadian Association for Research on Work and Health (CARWH) and was the President of the Association for 2003-2004.

Nancy Theberge (since 2003)

Professor, Department of Kinesiology, University of Waterloo

Dr. Nancy Theberge is a Professor with a joint appointment in the Departments of Kinesiology and Sociology at the University of Waterloo. Her areas of teaching expertise are the sociology of health, with a particular focus on social aspects of injuries, and gender relations. Dr. Theberge is engaged in research on participatory ergonomics. Some of the main issues addressed in this research are the impact of different forms of involvement on reported outcomes, the process of implementing participatory programs, and the factors that affect the long-term sustainability of workplace interventions. Dr. Theberge is currently the Associate Chair for Graduate Studies in the Department of Kinesiology at the University of Waterloo.

Dr. Maurits van Tulder (since 2003)

Epidemiologist, Institute for Research in Extramural Medicine and Vrije University Medical Centre, the Netherlands

Dr. Maurits van Tulder is an epidemiologist at the Institute for Research in Extramural Medicine of the VU University Medical Centre and the Institute for Health Sciences of the Vrije University in Amsterdam. He is the author of numerous scientific papers in peer-reviewed scientific journals and has written several book chapters and was editor of three books on conservative management for low-back pain. He is also chairman of the European Guidelines for the Management of Low Back Pain (EC project COST B13) and member of the editorial board of the Cochrane Back Review Group. Dr. van Tulder also lectures in courses on systematic reviews, evidence-based medicine and health technology assessment. His current interest includes economic evaluations of therapeutic interventions for musculoskeletal disorders.

Dr. Leah Vosko (since 2002)

Canada Research Chair, School of Social Sciences, Atkinson Faculty of Liberal and Professional Studies, York University

Dr. Vosko is Canada Research Chair and Associate Professor, School of Social Sciences, Atkinson Faculty, York University. Professor Vosko is the author of *Temporary Work: The Gendered Rise of a Precarious Employment Relationship* and co-author of *Self-Employed Workers Organize: Law, Policy and Unions*. She is also co-editor of *Changing Canada: Political Economy as Transformation and Challenging the Market: The Struggle to Regulate Work and Income*. Her work has appeared in a range of scholarly journals and edited collections. Professor Vosko is the Principal Investigator of a Community University Research Alliance on Contingent Work, Director of the Gender and Work Database project, and she was the Virtual-Scholar-in-Residence at the Law Commission of Canada in 2003/2004. She is currently writing a book on globalization, gender, and the changing nature of the employment relationship and editing a book titled *Precarious Employment: Understanding Labour Market Insecurity in Canada*.

Dr. Richard Wells (since 1998)

Professor, Department of Kinesiology, University of Waterloo

Richard Wells is a Professor in the Department of Kinesiology, Faculty of Applied Health Sciences, University of Waterloo. He was educated as a Mechanical Engineer at the University of Manchester, England and McMaster University, Canada where he specialized in Applied Mechanics with application to human function and injury; head injury in boxing and description of human gait using assistive devices. Since joining the Department of Kinesiology, University of Waterloo, Richard has pursued similar work concerning seat belt loads and neck injury in head-first impacts. For the last decade his main research and teaching interests have been work related musculoskeletal disorders of the upper extremity and low back in industrial and office settings. His interests are in work-related musculoskeletal disorders of the back and upper limbs; their causes, pathophysiology and prevention. He addresses these issues using anatomical and functional anatomical studies in cadavers and volunteers, by biomechanical modeling of the structures affected, by development of measurement, recording and processing approaches to document exposure at work, by participating in epidemiological studies to assess the work-relatedness of various workplace exposures and by the development of workplace processes to implement changes to prevent musculoskeletal disorders and monitor their health effects.

Dr. Kathryn Woodcock (since 2001)

Associate Professor, School of Occupational and Public Health, Ryerson University

Dr. Kathryn Woodcock is an Associate Professor, School of Occupational and Public Health, Ryerson University. She has a PhD in Engineering from the University of Toronto. Her research interests cover a range of topics in health and safety and injury prevention. They include hazard perception and human error, safety inspection and accident investigation practices and tools, professional development of safety specialists and safety program decision-making and management, achieving safety through design, and health, safety and ergonomic implications of deafness and assistive technology.

Dr. Dov Zohar (since 2005)

Professor, Department of Management, University of Nebraska - Lincoln

Dr. Dov Zohar is currently a Visiting Professor at the Gallup Leadership Institute, College of Business Admin., University of Nebraska. He is on sabbatical from the Faculty of Management, Israel Institute of Technology where he is an Associate Professor. In 2003-2005 he was a Visiting Scientist at the Institute for Work & Health. Dr. Zohar has a background in Industrial/Organizational Psychology and worked for over two decades on behavioral and managerial factors influencing occupational safety. His work is based on the assumption that, although some accidents are caused by human error, most accidents are caused by unsafe behavior intentionally performed in order to save time or effort. Since management can affect the costs involved in performing unsafely, Dr. Zohar's research focuses on management practices which have an impact in this direction. These practices are clustered under the concept of Safety Climate which he developed in 1980. The research program incorporates two major themes, i.e. climate measurement and climate improvement through intervention. Two recent developments include a multilevel measurement scale (i.e. organization-level and group-level climates), and a cross-level intervention model (selected as Best Intervention Research, NOIRS, 2003).

IWH Staff - 2005

Research

Ammendolia, Carlo; DC, MSc, PhD Student (graduated in Sept 2005)

Antal, Joan; BA, Manager Research Administration

Beaton, Dorcas; PhD, BScOT, MSc, Scientist

Bhattacharyya, Sudipa; BSc, Administrative and Research Assistant

Bielecky, Amber; Research Assistant, MSc Student (graduated Oct 2005)

Bigelow, Philip; PhD, Scientist

Bombardier, Claire; MD, FRCP(C) Senior Scientist

Breslin, Curtis; PhD, Scientist

Cale, Virginia; RN, Field Research Associate

Chan, Stella; MSc, Research Associate, Analyst

Chen, Cynthia; MSc, Research Associate, Analyst

Clarke, Judy; BScPsych, MA (Anthropology), Research Associate

Cole, Donald; MD, DOHS, MSc, FRCPC(C) Senior Scientist

Côté, Pierre; DC, MSc, FCCSC, PhD, Scientist

Cullen, Kim; BSc Kin, MSc, Research Associate

Culyer, Tony; CBE, BA, Hon. D.Econ, Hon FRCP, FRSA, FMedSci, Chief Scientist

David, Nasheta; Data Entry Clerk

Day, Doreen; BSc, Research Associate

de Oliveira, Claire; MSc, Research Associate

Dickie, Caroline; PhD, Coordinator, External Relations and Policy Liaison

Dolinschi, Roman; MSc, Research Associate, Analyst

Escorpizo, Reuben.; MSc, PhD Student

Etches, Jacob; MSc, Research Associate, PhD Student

Fang, Miao; MSc, Research Associate, Analyst

Farrell, Janet; RN, Field Research Associate

Ferrier, Sue; BSc, Research Associate

Franche, Renée-Louise; PhD, MA (Clinical Psychology), BA (Psychology), Scientist

Frank, John; MD, MSc, Senior Scientist

Furlan, Andrea; MD (Brazil), Physical Medicine/Rehabilitation Specialist (Brazil), PhD student

Gentles, Brenda; RN, Field Research Associate

Gnam, William; MD, PhD, Scientist

Gray, Garry; MSc, Len Syme Fellow, PhD Student

Guzmán, Jaime; MD, MSc, FRCP, Associate Scientist

Harlowe, Linda; Research Operations Administrative Coordinator

Hayden, Jill; DC, PhD student

Heath, Charmaine; Dip. Business Administration. Administrative Assistant

Hirani, Tazim; QAA, Administrative Assistant

Hogg-Johnson, Sheilah; PhD, Scientist, Program Chair, Data & Information Systems Program

Ibrahim, Selahadin; MSc, Research Associate, Statistician

Iliopoulos, Melissa, Administrative Assistant

Irvin, Emma; BA, Manager, Systematic Review Program and Information Systems and Library

Jones, Debbie; MSW, Research Associate

Kaw, Sigmund; DC, Research Associate

Kennedy, Carol; BScPT, MSc, Research Associate

Kerr, Mickey; PhD, Scientist

Kosny, Iggy; MSc, PhD Student

Krepostman, Suzan; BA, MA (Environmental Psychology) Program Coordinator

Kristman, Vicki; MSc, Research Associate, PhD Student

Lee, Hyunmi; MSc, Programmer Analyst

2005 Activity Report

MacEachen, Ellen; PhD, Mustard Fellow in Work Environment and Health, Co-chair, Workplace Studies Program

Mahood, Quenby; BA, Library Technician

Mansurova, Lyudmila, BSc, Administrative Assistant

Marchese, Nadia; BA, Cochrane Research Assistant

Maselli, Paolo; Network Administrator/Systems Analyst

Mazumder, Anjali; MSc, Research Associate, Len Syme Fellow

Nolan, Krista; Library Assistant

Pennick, Victoria; RN, BScN, MHSc, Senior Clinical Research Project Manager, Cochrane Back Review Group Coordinator

Pole, Jason; MSc, Research Associate

Polzer, Jessica; MSc, Research Associate

Raj, Anusha; BSc (Psych), MSc, Research Associate

Raktoe, Shanti; Administrative Assistant

Resendes, Elizabeth; BA, Administrative Assistant

Rezai, Mana; DC, Research Associate

Rivilis, Irina; MSc, PhD Student

Robson, Lynda; PhD, Associate Scientist

Scott, Heather; Research Associate, PhD Student (graduated in Sept'05), Post Doctoral Fellow

Severin, Colette; MSc, Research Associate, Project Coordinator

Shannon, Dan, Library Assistant (part-time)

Sinclair, Sandra; Dip.P&OT, MSc, Associate Scientist, Director Operations

Smith, Peter; MPH, Research Associate, Programmer/Analyst/PhD Student

Subrata, Peter; MSc, Research Associate

Swift, Michael; MSc, Research Associate, Data Manager/Programmer

Tompa, Emile; MBA, PhD, Scientist

van der Velde, Gabrielle; DC, PhD Student

Van Eerd, Dwayne; BSc (Kin), MSc (Kin), Research Associate

Vidmar, Marjan; MD (Macedonia), MSc, Research Associate, WSIB Data Specialist

Walibhai, Nisha; RN, BScN, MSHc (HA), Project Manager, OPLES

Wang, Anna; RN, Research Associate

Webb, Alison; BA, Administrative Coordinator, Office of the President

Widdrington, Heather; MSc, Cochrane Research Assistant

Williams, Alysha; BA(H), MSc, Research Associate

Yao, Grant; Network Administrator/Systems Analyst

Zhao, Ryan; MSc, Analyst

Zohar, Dov; PhD, Visiting Scientist

Staff - Knowledge Transfer & Exchange

Brenneman Gibson, Jane; MCiSc, Director, Knowledge Transfer & Exchange

Cohen, Melissa; BA, Administrative Assistant

Holland, Carol; A.O.C.A., Graphic Designer and Production Coordinator

Knowles Chapeskie, Kathy; Dip. Corporate Communications, Post-Graduate Program, Dip. Radio & Television Broadcasting, Manager, Communications

Keown, Kiera; MSc, KTE Associate

Kramer, Dee; MES, MSc, PhD, Knowledge Transfer Associate

Mathur, Reshma, PEng, Communications Associate

Michaels, Evelyn; MA, Journalism, Writer/Editor

Paloo, Greer; BSc, Information & Events Coordinator

Reardon, Rhoda; Dip P&OT, Knowledge Transfer Associate

Russo, Katherine; Dip. Journalism, Communications Associate

Staff - Corporate Services

Cicinelli, Mary; BA, CHRP, Manager Human Resources & Corporate Services

Kells, Robin; MA, Assistant to the President, Board Relations and Special Projects

McPherson, Kerry-Ann; Dip. Business Accounting, Accounting Clerk

Mustard, Cameron; ScD, President

Sir, Cathy; CMA, Accountant

Glossary

A	AACAP	American Academy of Child and Adolescent Psychiatry	
	ACE	Association of Canadian Ergonomists	
	ACR	American College of Rheumatology	
	AHCPR	Agency for Health Care Policy and Research	
	AHFMR	Alberta Heritage Foundation for Medical Research	
	AHRQ	Agency for Healthcare Research & Quality	
	AJPH	American Journal of Public Health	
	AJIM	American Journal of Industrial Medicine	
	ALBP	Acute Low Back Pain	
	AMA	American Medical Association	
	APA	American Psychological Association	
	AWCBC	Association of Workers' Compensation Boards of Canada	
	B	BMJ	British Medical Journal
		BRG	Cochrane Back Review Group (a.k.a. CCBRG or Cochrane Collaboration Back Review Group)
C	CACAP	Canadian Academy of Child and Adolescent Psychiatry	
	CACHE	Canadian Association for Continuing Health Education	
	CAHSPR	Canadian Association for Health Services and Policy Research	
	CAMH	Centre for Addiction & Mental Health	
	CANOSH	Canada's National Occupational Safety & Health Information Centre	
	CARP	Canadian Association of Rehabilitation Professionals	
	CARWH	Canadian Association for Research on Work and Health	
	CAW	Canadian Auto Workers	
	CCA	Canadian Chiropractic Association	
	CCDP	Centre for Chronic Disease Prevention	
	CCOHS	Canadian Centre for Occupational Health and Safety	
	CCOHTA	Canadian Coordinating Office for Health Technology Assessment	
	CCS	Canadian Cancer Society	
	CCFP	Canadian College of Family Physicians	
	CDIA	Canadian Drug Information Association	
	CEFRIO	Centre francophone d'informatisation des organisations	
	CERF	Canadian Employment Research Forum	
	CES	Centre for Epidemiological Studies	
	CFI	Canada Foundation for Innovation	
	CHEPA	Centre for Health Economics and Policy Analysis	
	CHERA	Canadian Health Economics Research Association (now CAHSPR)	
	CHSRF	Canadian Health Services Research Foundation	
	CIAR	Canadian Institute for Advanced Research	

	CIHI	Canadian Institute of Health Information
	CIHR	Canadian Institutes of Health Research
	CIWA	Canadian Injured Workers Alliance
	CJPH	Canadian Journal of Public Health
	CMA	Canadian Medical Association
	CMAJ	Canadian Medical Association Journal
	CMCC	Canadian Memorial Chiropractic College
	CMPA	Canadian Medical Protective Association
	CNO	College of Nurses of Ontario
	COA	Canadian Orthopaedic Association
	CPA	Canadian Physiotherapy Association
	CPHA	Canadian Public Health Association
	CPHI	Canadian Population Health Initiative
	CPRN	Canadian Research Policy Networks
	CPSA	Canadian Political Science Association
	CPSO	College of Physicians and Surgeons of Ontario
	CRE-OD	Centre for Research Excellence – Occupational Disease
	CRE-MSD	Centre for Research Excellence – Musculoskeletal Disorders
	CRTN	Canadian Research Transfer Network
	CSAO	Construction Safety Association of Ontario
	CSEB	Canadian Society for Epidemiology and Biostatistics
	CSIH	Canadian Society for International Health
	CSST	Commission de la santé et de la Sécurité du travail
	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
	ERI	Effort-reward Imbalance
	ESAO	Education Safety Association of Ontario
	EUSA	Electrical & Utilities Safety Association
G	GLADnet	Global Applied Disability Research and Information Network on Employment & Training
H	HCHSA	Health Care Health & Safety Association
	HEALNet	Health Evidence, Application and Linkage Network of the Centre of Excellence
	HIRU	Health Information Research Unit
	HMOs	Health Maintenance Organizations
	HRDC	Human Resources Development of Canada

	HSA	Health and Safety Associations
	HWP	Healthy Workplace
	HWW	Health Work & Wellness Conference
I	IAB	Institute Advisory Board (IAPH)
	IAIABC	International Association of Industrial Accident Boards & Commissions
	IAPA	Industrial Accident Prevention Association
	IAPH	Institute of Aboriginal Peoples' Health
	ICES	Institute for Clinical Evaluative Sciences
	ICN	International Council of Nurses
	ICOH	International Commission of Occupational Health
	IHPM	Institute for Health and Productivity Management
	IHSPR	Institute of Health Services and Policy Research
	ILO	International Labour Organization
	INCLEN	International Clinical Epidemiology Network
	IPPH	Institute of Population and Public Health (CIHR)
	IWH	Institute for Work & Health
	IRSST	L'institut de recherche Robert Sauvé en santé et en sécurité du travail
J	JAMA	Journal of the American Medical Association
	JCE	Journal of Clinical Epidemiology
	JCQ	Job Content Questionnaire
	JHSC	Joint Health and Safety Committee
K	KTE	Knowledge, Transfer & Exchange
L	LAD	Longitudinal Administrative Databank
	LBP	Low-back pain
	LFDI	Listening for Direction on Injury (CIHR Advisory Committee)
	LTD	Long Term Disability
M	MASHA	Mines and Aggregates Safety and Health Association
	MDD	Major Depressive Disorder
	MHSAO	Municipal Health and Safety Association of Ontario
	MOL	Ministry of Labour
	MSK	Musculoskeletal
N	NCE	Networks of Centres of Excellence
	NEJM	New England Journal of Medicine
	NHS	National Health Service
	NIH	The National Institutes of Health
	NICE	National Institute for Clinical Excellence

	NICHD	National Institute for Child Health and Development
	NIOSH	National Institute for Occupational Safety and Health (USA)
	NOIRS	National Occupational Injury Research Symposium (USA)
	NORA	National Occupational Research Agenda
	NPHS	National Population Health Survey
O	OCHS	Ontario Child Health Study
	OEA	Office of the Employer Adviser
	OEMAC	Occupational & Environmental Medical Association of Canada
	OFSWA	Ontario Forestry Safe Workplace Association
	OHA	Ontario Hospital Association
	OHCOW	Occupational Health Clinic for Ontario Workers
	OHIP	Ontario Health Insurance Plan
	OHN	Occupational Health Nurse
	OKA	Ontario Kinesiology Association
	ONA	Ontario Nurses Association
	OOHNA	Ontario Occupational Health Nurses Association
	OSHA	Occupational Safety and Health Administration (USA)
	OSSA	Ontario Service Safety Alliance
P	PHS	Public Health Sciences, University of Toronto
	POCKET	Physicians of Ontario Collaborating for Knowledge Exchange & Transfer
Q	QOLR	Quality of Life Research
R	RAC	Research Advisory Council (WSIB)
	RFP	Request for Proposals
	RNAO	Registered Nurses Association of Ontario
	RSI	Repetitive Strain Injury
	RTW	Return-to-work
S	SAC	Scientific Advisory Committee
	SARS	Severe Acute Respiratory Syndrome
	SER	Society for Epidemiologic Research
	SHARP	Safety and Health Assessment and Research for Prevention (Washington State)
	SIS	Single Item Staging Scale
	SMDM	Society for Medical Decision Making
	SR	Systematic Review
	SRC	Systems Review Committee
	SRDC	Social Research and Demonstration Corporation
	SSHRC	Social Sciences and Humanities Research Council of Canada
	Star/SONG	Star/Southern Ontario Newspaper Guild

T	TDHC	Toronto District Health Council
	TENS	Transcutaneous electrical nerve stimulation
	TSAO	Transportation Safety Association of Ontario
U	UE	Upper Extremity
	UHN	University Health Network
	UNITE	Union of Needle Trades, Industrial & Textile Employees
	URICA	University of Rhode Island Change Assessment
	USWA	United Steelworkers of America
W	WCB	Workers' Compensation Board
	WHSC	Workers' Health & Safety Centre
	WHSCC	Workplace Health, Safety & Compensation Commission of Newfoundland & Labrador
	WHO	World Health Organization
	WMSDs	Work-related Musculoskeletal Disorders
	WSIB	Workplace Safety & Insurance Board
	WSIB/RAC	Workplace Safety & Insurance Board Research Advisory Council

