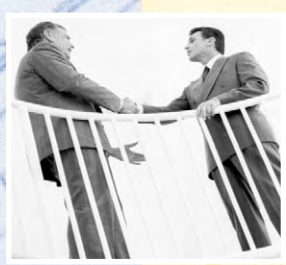
INSTITUTE FOR WORK & HEALTH
INSTITUT DE RECHERCHE SUR LE TRAVAIL ET LA SANTÉ

Building Healthier Workplaces

Institute for Work & Health Annual Report 2001



What is the Institute for Work & Health?

What we do:

The Institute for Work & Health is an independent, not-for-profit research organization whose activities strive to reduce injury, illness and disability in the Ontario workforce. The Institute has two core businesses: research and research transfer.

Our research includes the study of primary prevention and interventions in the workplace; effective and efficient treatment and safe, timely return to work for people with work-related injury and illness; labour market experiences and their health consequences; and, disability compensation systems and their behavioural consequences for stakeholders.

The goal of our research transfer activities is to get research knowledge into the hands of key decision makers in a timely, accessible and useful manner. This includes a range of strategies and collaborations with partners in the prevention system, other health and safety stakeholders, workplace parties, clinicians, and policy-makers.

Our history:

The Institute has been providing research and evidence-based, practical tools for clinicians, policy-makers, employers and managers since 1990. It was established originally as the Ontario Workers' Compensation Institute by the Workplace Safety & Insurance Board of Ontario (WSIB). In 1994 it was renamed to recognize its broader focus.

Our funding source:

The WSIB is the primary funding source for the Institute. In addition, IWH researchers attract numerous grants and contracts from various granting agencies each year.

Our affiliations:

The Institute has affiliation agreements with the University of Toronto, University of Waterloo and McMaster University.

Contents

Message from the Chair

The calibre and the quantity of the research and research transfer efforts of the Institute for Work & Health continues to be very impressive. The Board of Directors is proud to be associated with this outstanding scientific team and staff. We are grateful to Jane Bartram who led the group as Interim President in 2001.

After an extensive search we appointed Dr. Stephen Bornstein as successor to Dr. Terrence Sullivan as President of the Institute. Stephen came to us with a sterling reputation but with some conditions relating to his family's ability to move to Toronto. Unfortunately, the family move could not take place and he decided to return to Newfoundland. He left after six months of creative, successful work and we thank him for these accomplishments.

The Board of Directors is now reviewing its options before beginning a new presidential search. We are pleased Dr. Cameron Mustard, Scientific Director, has agreed to serve as Interim President for the near future. We all remain strongly committed to the mission and goals of the Institute and believe that its role is more important than ever for workplaces across the country.

In 2001, the Board and its committees underwent changes with several longtime members stepping down. George Thomson, Executive Director of the National Judicial Institute in Ottawa completed a two-year term. As well, two founding members of the Research Advisory Committee (RAC) stepped down: Alf Nachemson, Chair of the Department of Orthopaedics, University of Göteborg, Sweden; and Alan Wolfson, Managing Director of Capital One, England. Two new members begin terms on RAC in 2002: John Burton, Professor of the School of Management and Labour Relations at Rutgers University in New Jersey; and Barbara Silverstein, Research Director of the Safety and Health Assessment and Research for Prevention (SHARP) program at the Washington State Department of Labor & Industries.

I too will be stepping down as Chair in the fall of 2002. I thank my fellow board members for their continued support and work. I look forward to working with you and our new Chair in the coming year.

The future of the Institute looks very bright: our relationship with our stakeholders and colleagues has never been better. We are united in a common cause to prevent workplace injuries through understanding their causes and consequences.

–Lorna Marsden, Chair, Board of Directors

Lorna Marsden

"The future of the Institute looks very bright: our relationship with our stakeholders and colleagues has never been better."

Message from the Interim President

Jane Bartram

"The underpinnings of the Institute's successes–past, present and future–are the contributions of our outstanding staff and researchers…"

The Institute for Work & Health is heading in exciting new directions. Much of the groundwork for these endeavors was laid in 2001 and will serve as the foundation for our evolution in the coming years.

We built new partnerships with key stakeholders to provide relevant research information and to exchange ideas with those at the frontlines of workplace health, wellness and prevention. These partnerships were at the local, national and international level.

A new liaison committee was formed with five of Ontario's Health and Safety Associations (HSAs). This evolving committee will serve as an advisory group and a forum for exchange on Institute research and the significant issues facing the work sectors that HSAs serve. The Institute also worked closely with the Association for Workers' Compensation Boards of Canada on its first *Public Forum on Knowledge Transfer for Workplace Health and Safety*. This successful event brought together several hundred researchers, workplace decision-makers and policy-makers from across Canada to share findings and best practices.

Internationally, we continued our major role in the Work Congress and the *5th International Congress on Work Injuries Prevention, Rehabilitation and Compensation*. We also hosted several visiting international scientists, including Dr. Dov Zohar from Israel. These types of partnerships and exchange will become an increasingly important part of our business at the Institute.

Late in 2001, we formally documented our accomplishments over the period 1997-2001 in preparation for our Five-Year Review proceeding. The report of the international review panel will play a major role in our future directions.

The underpinnings of the Institute's successes—past, present and future—are the contributions of our outstanding staff and researchers, as well as the commitment of our major funder, the Workplace Safety & Insurance Board of Ontario, the members of our governance bodies and our partners. We'd like to thank all of them for their continued effort and support.

We look forward to ongoing collaboration as we build on the foundation of research and research transfer that will contribute to preventing accidents, building healthier workplaces and improving the health of employees.

-Jane Bartram, Interim President

Building an Understanding of the Work-Health Relationship

We all know that smoking is bad for our health. Just as we realize that proper nutrition, exercise and rest contribute to good health. What may be less apparent to many are the extensive relationships between work and our health. The work we do, the environment we work in and the varied aspects of the labour market experience and health services delivery all have significant effects and influences on the work and health relationship.

Why is this important? Work is a major part of our lives. Most of us will spend as many as 40 years or more working five days a week, eight hours per day. That adds up to about one-third of our life spent "on the job." While the nature of work has changed dramatically in the past five decades, today's workplaces give rise to new types of morbidity and disability.

Research has shown that one in five lost-time claims are for a work-related repetitive strain injury. Work-related musculoskeletal disorders (WMSDs) are the leading cause of workplace disability in North America. Up to 85 per cent of the working population will suffer from back pain at some point in their work life. There are increasingly more "contingent" or non-standard work arrangements that call for people to work on contract, part-time, off-site or from home.

These new workplace realities pose particular challenges for prevention, diagnosis, treatment and compensation. The direct and indirect costs of workplace injury and illness are high—$5.7 billion in workers' compensation benefits were disbursed in 2000 across Canada to compensate injured workers and to provide them with health care treatment and rehabilitation. More than $2.3 billion in compensation was for Ontario alone.

"There is a solid business case for leading-edge research into these issues, and for finding the best methods to exchange research findings with employers, unions, workers, health and safety practitioners, and decision makers to help prevent workplace accidents, injuries and diseases," says Dr. Cameron Mustard, Scientific Director at the Institute.

The Institute for Work & Health's interdisciplinary research programs strive to understand the major work-related health issues. The Institute is organized into four broad research programs that cover the spectrum of work-related effects on health from the macroeconomic to workplace to

"Work is a major part of our lives. Most of us will spend as many as 40 years or more working five days a week, eight hours per day. That adds up to about one-third of our life spent 'on the job'."

health services delivery. "In the past 11 years, the Institute's research programs have evolved to encompass 10 major themes. Each theme helps inform the primary and secondary prevention efforts under way in the province, including those of our major funder, the Workplace Safety & Insurance Board of Ontario," says Mustard.

The Population Workforce Studies group examines the relationship between the upstream labour market experiences related to the availability and nature of work, such as job insecurity, and their impact on health and human development consequences. This research team also studies disability policy system design features and other labour market policies and programs that may have an impact on the health of individuals and populations.

The research undertaken by Workplace Studies involves collaborations with workplaces to identify problems and evaluate preventive interventions. This group focuses on the practices and policies of workplaces that support the prevention of adverse physical and psychosocial work exposures with the aim of finding ways to improve health outcomes.

When a worker is injured or experiences the onset of a disabling condition, they will usually consult a health-care provider. The research conducted by the Health Services Research, Monitoring and Evaluation group examines the nature, organization and delivery of those services. The effectiveness of these clinical services and interventions affect the rate of functional recovery and duration of disability for the worker. The group also examines the etiology, prognosis and impact of work-related musculoskeletal conditions.

The Data and Information Systems group provides statistical expertise and database management, as well as library and network administration support, to research projects across all of the three previous programs. The area's biostatisticians and analysts collaborate with Institute scientists on analytic projects and advise on the application of advanced analytic and information retrieval methods.

The knowledge gained from the work of these four research programs helps build a better understanding of the major work-related health issues affecting workers in Ontario today. The Research Transfer group builds the links with the workplace, clinical and policy audiences to transfer this research knowledge to those who can put it to work. This knowledge serves as a catalyst for implementation of programs, policies and other initiatives to create a healthier workplace for tomorrow.

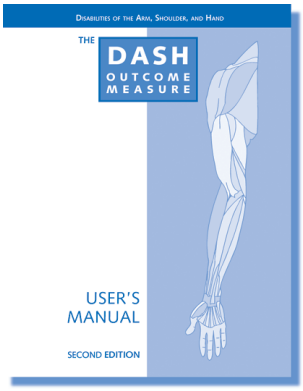
Searching for Solutions

Across the Institute's research programs, 10 themes have emerged in its efforts to identify the work-related determinants of health, as well as to understand and find solutions to work-related health problems. These themes span the conceptual framework, ranging from upstream, primary prevention to downstream, secondary prevention and return to work.

"Across the Institute's research areas, 10 themes have emerged in its efforts to identify the work-related determinants of health…"

Over the years, the Institute has become recognized worldwide for its innovative work on work-related musculoskeletal disorders (WMSDs). These conditions can be extremely painful and require sufferers to take time off work. Disabling pain of this sort is now the major cause of work disability in North America, which makes it an important area of study for researchers. It is also a very challenging one. WMSDs are very difficult to diagnose and current classification systems are not consistent.

Institute for Work & Health scientists conducting studies under the Measurement and Health Function theme are trying to tackle some of these challenges. Studies such as the ongoing work on the *DASH (Disabilities of the Arm, Shoulder and Hand) Outcome Measure* and a new international study attempting to classify upper-extremity disorders in working-age adults are addressing some of these important questions. Institute Scientist and Manager of the Population Workforce Studies group, Dr. Emile Tompa has been working with a new classification system of functioning, disability and health developed by the World Health Organization. His work is now being shared with other organizations studying disability. "We think this research should provide a first step towards developing some synergy among researchers in this field," he says. The information sharing extends to individuals involved with the development of the World Health Organization's classification system, which has recently undergone field trials and is now being promoted in the research field.



Dr. Pierre Côté is among the Institute scientists who are trying to understand the epidemiology of disabling work-related musculoskeletal disorders. What factors lead to work disability? How can therapeutic intervention minimize disability and restore function? What factors within the health-care delivery system influence recovery? Côté is currently working with colleagues at Arizona State University to examine the cost-effectiveness of treatment for acute occupational low-back pain by different provider types. He has also been involved with researchers at the University of Alberta in a suite of studies using accident data from Saskatchewan. Two of the studies were published in 2001.

"Through our research we have been able to determine that various factors influence a person's recovery from a musculoskeletal injury. These include clinical factors, such as age and pain intensity, the type of health-care provider the patient visits, and the characteristics of the health-care delivery and insurance systems." Côté says their literature review suggested that patients covered by a no-fault insurance system recover faster from whiplash injuries than those who are covered by a tort system.

All in your head?

Dominique is an administrative secretary working in a busy downtown law firm. She's at her computer, word processing for most of her eight- to nine-hour day. She has been working in her current position for several years, but in the past year the firm downsized and her workday has become more pressured and stressful. Dominique notices that she has a lot of pain in her wrists, arms and neck. "I think I may have developed an RSI," she tells her supervisor. "Hogwash…I've read all about those RSIs. It's all in your head," he says. But is it?

While Dominique's supervisor is obviously not the most supportive of bosses, he's also wrong. News reports in mid-2001 suggested that RSIs (or WMSDs, the name most researchers use to describe these conditions) are a form of hysteria and that the pain that workers feel is "just in their heads," however Institute research has shown that the opposite is true.

"The pain and disability are real," says Dr. Michael Kerr, an Institute scientist who has been working on projects with the garment, auto and health-care industries. "RSI or WMSDs include a range of problems that lead to pain and disability, and account for nearly one in five compensation claims in Ontario."

Institute scientists have been involved in leading-edge research in this field for many years, including a large multi-year study at a major newspaper and a collaborative project in the clothing industry. The research has revealed the need to address both the physical setup of the workspace (ergonomics) plus the psychosocial or workplace organizational factors to reduce the risk of injury. The study with the daily newspaper highlighted workplace organization factors such as deadlines, workload, high job demands and low social support as key contributors to WMSDs.

Research has shown that bringing the risk of WMSDs under control requires a multi-pronged approach. Physical considerations include modification of workstations, and frequent breaks with exercise. At the workplace organizational level, interventions include worker involvement in change, adjusting workload, improving workflow, and providing support. "Workplace programs can reduce WMSDs," says Senior Scientist Dr. Donald Cole. "These disorders shouldn't be dismissed as a source of injury and pain. Efforts should be made to understand them better and do more about them."

Contributing to Evidence-based Practice

Keeping care providers in the loop regarding current research findings is a challenge many research organizations face. The Institute's Research Transfer department helps facilitate the transfer to clinical audiences. However, determining *what* is best evidence is another research theme at the Institute. There are many treatments available to clinicians treating patients with WMSDs. "Knowing what treatment works, what doesn't, and basing that knowledge on solid research evidence, is becoming increasingly important to everyone along the continuum of care from provider to patient, from insurer to policy-maker. As a result, synthesis of research evidence is much in demand, and the Institute has significant experience in this area," says Dr. Claire Bombardier, Senior Scientist. Bombardier is the founding Co-editor of the Cochrane Collaboration Back Review Group (BRG) along with Dr. Alf Nachemson of Sweden.

The BRG is a major contributor to the Institute's research theme of evidence-based practice. The group, based at the Insitute, coordinates international systematic reviews on clinical interventions in the area of neck, back and other spinal disorders. Three systematic reviews were released in *Spine* in 2001, including reviews of injection therapy and the use of lumbar supports for pain relief of low-back pain. A review of the effectiveness of the use of multidisciplinary rehabilitation programs for workers with subacute low-back pain (pain that lasts more than four weeks) determined work absence could be reduced if the program includes a workplace visit with the worker, supervisor and other key parties, such as a union representative. Bombardier was also part of an Institute synthesis of the literature on chronic pain that was published as a supplement to the *Clinical Journal of Pain* in December 2001.

"Knowing what treatment works, what doesn't, and basing that knowledge on solid research evidence, is becoming increasingly important to everyone along the continuum of care from provider to patient, from insurer to policy-maker."

Oh my aching back

Scott injured his back while working on the line at the auto manufacturing plant near his home. He's been off work for four weeks, but he's still in pain. Now he just wants relief. A "buddy" from work told him that massage would help. At his next visit, Scott tells his family physician that he wants something for the pain, and asks, "Would massage do the trick?" Dr. Drake knows there are a range of about 50 different therapies that promise to relieve pain, lessen the suffering and offer a solution for low-back pain problems, but only a few have solid evidence of efficacy. Is massage among them?

Yes. In a critical review of the literature published in the June 2001 issue of the Institute publication *Linkages*, Dr. Andrea Furlan, Evidence-based Practice Coordinator at the Institute, reported that massage is a promising therapy for patients whose low-back pain lasts more than four weeks. The review found that compared to some other treatments, massage therapy can be more beneficial if is done by a registered massage therapist and combined with stretching exercises and posture education.

"When used appropriately, massage is a safe intervention, with no associated risks or adverse affects," says Furlan. "It can relieve the pain, help the patient relax, promote a feeling of well being and a sense of being well-cared for." Study patients reported improved function, less intense pain and decreased anxiety.

The study reviewed in *Linkages* was the first to provide positive evidence supporting massage as a therapy. However, more research is needed, cautions Furlan, to confirm the results in various patient populations and settings.

Research has shown that up to 85 per cent of the population will experience low-back pain at some point in their working life. Some of them will have to take time off work because of the disabling pain. While the vast majority of patients get better quickly, about 10 per cent of patients are at risk of developing chronic pain and disability.

Returning the Injured to Work

Getting people back to work post injury can be just as challenging as diagnosis of WMSD. Understanding the factors that contribute to successful return to work have been an important part of the Institute's mandate since its inception and is the focus of another of its research themes: return to work following an occupational injury.

Policy changes in Ontario in recent years have shifted responsibility for the primary and secondary prevention of disability to workplaces. Research under way at the Institute will explore the impact of these policy changes. It will also investigate what factors ensure the most successful return-to-work experience for injured workers, says Scientist Dr. Renée-Louise Franche. "We're especially interested in the role of work accommodation for injured employees," she says. "We know that work accommodation can be crucial for successful return to work."

Earlier research at the Institute also indicated that collaboration between the key players in the return-to-work process, including the worker, workplace, insurer and health-care provider, is extremely important in successful return to work.

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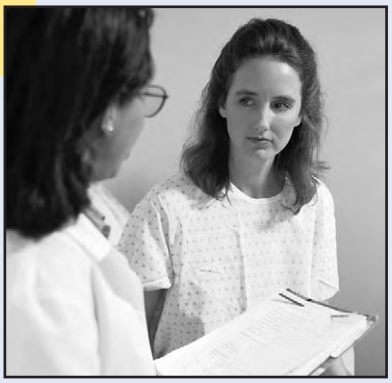
Think better, feel better



Two patients who were injured at work visited family physician Dr. Carol Jones this morning. They have very similar injuries, yet Dr. Jones notes there are some differences in their attitude toward recovery. Despite her pain, one patient is quite optimistic about her recovery and expects to recover normal function and return to work in the near future. The second patient seems very uncertain, agitated and worried. Will they both return to work about the same time?

There is evidence of the power of positive thinking and its impact on patient recovery. "When patients expect to do well, they usually do," says Dr. Donald Cole, a Senior Scientist. Cole and his colleagues published a review of the literature on the topic in the *Canadian Medical Association Journal*. A follow-up study involving more than 1,500 workers, further confirmed the finding that patients' expectations have a profound effect on their recovery.

While every patient's case is different, Cole's work suggests physicians should talk to their patients about their expectations, and try to understand why some patients have negative or uncertain expectations about their recovery. "Trying to get to the root of negative expectations may uncover barriers that the patient and physician can work on together," he says.

The work is an important contribution to the research mandate at the Institute. "Looking at the link between patient expectations and health outcomes and recovery provides information on how clinicians might improve treatment, and how we might affect a patient's recovery and return to work," adds Cole. Findings from these studies may inform the development of tools to help physicians foster more positive recovery expectations in these types of patients.

Focusing on the Workplace

How work is organized—at the individual, job, department and corporate levels—can have a profound effect on a person's health. An array of risk factors ranging from the physical, ergonomic issues such as workstation placement, to the workplace organizational factors such as employee recognition and job control, contribute to the development of work-related health problems, including WMSDs.

Work organization is another research theme at the Institute. Earlier work with General Motors Canada and ongoing research with the *Toronto Star* have laid the groundwork for a suite of studies that examine how work organization determines biomechanical and psychosocial work exposures. The Institute's Healthy Workplace Project is now developing tools and applications that can be used by workplaces to describe their work organization characteristics and provide the necessary information to plan interventions to facilitate change. One such tool is the Employee Survey of the Working Environment, a web-based survey that is now being pilot tested. "This is the first online tool developed by the Institute that will help organizations identify stress-related issues in their workplaces compared to the Canadian norms," says Dr. Fataneh Zarinpoush, Project Coordinator.

"The Institute's Healthy Workplace Project is now developing tools and applications that can be used by workplaces to describe their work organization characteristics…"

A related, growing theme at the Institute is workplace intervention studies. Rigorous intervention studies are extremely important to an evidence-based approach to policy in the area of workplace health. They can help researchers and decision-makers in the compensation arena and workplace management determine what approaches are more or less effective in improving workplace health. The Institute is strongly committed to working with partners to better understand these approaches. One approach—the participatory change process—has been used and evaluated in projects at the *Toronto Star*, in the clothing industry and manufacturing sectors.

When do you know that an intervention has been successful? Drs Lynda Robson and Harry Shannon worked with colleagues at the National Institute for Occupational Safety and Health (NIOSH) in the United States to develop a guide to help measure success. "*The Guide to evaluating the effectiveness of strategies for preventing work injuries: how to show whether a safety intervention really works*, has been extremely popular since we released it in the spring of 2001," says Robson. "It's available free for downloading from the Institute and NIOSH web sites. According to one user, the guide is "…a great publication…. and it is understandable." Robson is also in the planning phase of an intervention project with a Toronto hospital using a tool that will measure workplace health.

Are health-care workers healthy?

Laurie is no stranger to stress and strain in the work-place. A long-time nurse and nursing supervisor in a medium-sized community hospital, Laurie and her colleagues have been through hospital restructuring, mergers and layoffs, as well as many other changes and challenges occurring in the health-care sector. In the past year, she has seen many of her colleagues call in sick, get injured, or become depressed. Over dinner one night, she tells her partner that she's becoming really concerned and she doesn't know where to turn. Her partner asks "What's going on?"

The nature of the work of nurses and other health-care providers and the environment in which they're working, exposes them to specific health and work-related injury issues. In November 2001, the Canadian Institute for Health Information (CIHI) published *Canada's Health Care Providers*. The Institute was a collaborator on a chapter in the report that provided an overview of the current research knowledge of work and health issues facing health-care workers, including research conducted by Institute scientists.

Dr. Mieke Koehoorn, a former Mustard Fellow at the Institute, an Associate Scientist and one of the co-authors of the chapter, says that research has shown that health-care workers are more likely to miss work because of illness and disability than those in other sectors. "According to national survey data, more than seven per cent of people working in Canadian health-care occupations in 2000 were absent for health reasons each week compared to 4.8 per cent of people working in all other occupations," says Koehoorn. "These workers are particularly susceptible to musculoskeletal injuries from moving and lifting patients, and are at risk of job specific injuries and hazards ranging from needlestick injuries to workplace violence." Restructuring has also had an impact on health. Some research identifies increases in levels of burnout, depression and anxiety.

Needle stick injuries are of particular concern to the health-care sector. Dr. Michael Kerr, an Institute Scientist and an Assistant Professor in the School of Nursing at the University of Western Ontario, is involved in several studies in the health-care sector. He says a survey of acute-care nurses in Ontario indicated that 60 per cent of them had been stuck by a needle that had been used on a patient sometime during their career. About 13 per cent said they had a needle stick injury in the past year.

Both Kerr and Koehoorn continue to be involved in projects in the health-care sector, including a collaborative interdisciplinary study nearing completion with Health Canada and the Nursing Effectiveness Utilization and Outcomes Research Unit at the University of Toronto. Funded with partial support from the Workplace Safety & Insurance Board's Research Advisory Council, the study links several data sources to analyze absenteeism and injury outcomes. Nurses and hospital stakeholders were also interviewed to gain their perspectives on possible hospital interventions to reduce injuries, stress, and absenteeism among nurses.

Monitoring and Surveillance of System Performance

Strong measurement methods and statistical design are the underpinnings of quality research conducted at the Institute for Work & Health. The Data and Information Systems groups' team of statisticians and programmer/analysts provides the expertise necessary to carry out the complex examination of the links between work and health, which at times can occur at many levels simultaneously. Staff within this area keep abreast of statistical advances and continue to develop expertise in advanced analytic methods.

Data collected by the Workplace Safety & Insurance Board during the claims process serve as a valuable resource for Institute researchers. Dr. Sheilah Hogg-Johnson, Senior Biostatistician and Manager of the group, says members of the team have developed specialized skills in using large administrative databases like the WSIB claims data and health-care billings data. The data and the team support a wide range of Institute projects.

The data are especially useful to researchers whose projects fall under the health-services research theme. Health-services researchers examine the effectiveness and efficiency of both the organization and the delivery of health-care services at the population level. They ask questions like: What is the impact of choosing one type of care provider over another? What difference does the intensity of interaction with a care provider have on recovery? What is the relationship between health-care provision, functional recovery and return to work?

One of the exciting projects now under way within this theme is a comprehensive description of work-related musculoskeletal disorders (WMSDs) in Ontario. A series of studies under this umbrella will describe WMSDs and the variations in injury and functional recovery across geographic locations, by provider type and intensity of interaction, as well as differences between genders, and across industries and occupations.

"One of the exciting projects now under way within this theme is a comprehensive description of work-related musculoskeletal disorders in Ontario."

Which rate is right?

James is a supervisor and a member of the Joint Health and Safety Committee in a large manufacturing plant in a small southwestern Ontario community. Injury rates at the plant are high, and the committee wants to recommend some prevention and safety programs targeted to those workers most at risk. More men at the plant seem to sustain injuries, so perhaps men should be the target of the programs…or should they?

In today's labour force, there are nearly equal numbers of men and women working. But when you compare the injury rates between men and women, men seem to have a much higher risk of injury.

"That's not necessarily the case," says Institute Scientist Dr. Jennifer Payne. Working closely with the Data and Information Systems group to develop some innovative approaches to analyze WSIB claims data and the results of the *Statistics Canada Labour Force Survey*, Payne and her colleagues have been able to take a much closer look at injury rates and the difference between genders. "What we've found is that while rates of injury between men and women working in a particular industry such as construction may look different, when you actually compare men and women in the same occupation, the risk is the same."

Why do men have higher rates of injury? Men tend to work in higher-risk occupations such as machining, processing and heavy equipment operation while women more often work in administrative and service settings where the risk is lower.

The findings have implications for those who want to target health and safety programs and policies. "Our study has shown that gender may not be the best marker for identifying those who are at high risk of work-related injuries, but that occupations or the tasks that make up that occupation are better indicators of risk," says Payne.

Investigating the Broader Forces at Work

At a societal level, there are numerous forces that influence the working-lives and the health of populations. Within the research theme of labour market experience and health, researchers are investigating the relationship between upstream labour market experiences related to the availability of work (such as unemployment), position in the occupational hierarchy, income inequality and the nature of work (job insecurity and contingent work) and how these factors impact on health. At the same time the health of a population has an impact on the labour market, a reciprocal area of study by this group.

Recent work led by Scientific Director Dr. Cameron Mustard examined how position in the occupational hierarchy might be a determinant in perceived health status. "Our study found that those workers in the lowest positions within an organization had a higher risk of a decline in perceived health status," says Mustard. "For men, this might be partially explained by workplace organizational factors or participation in health risk behaviours."

Two emerging research programs under this theme will have national policy significance. There is a greater reliance in the labour market on contingent or non-standard employment arrangements. Dr. Emile Tompa will be examining these arrangements and their influence on workers' health. For the first time the Institute is also looking at youth in the labour market. Young people are at high risk of injury and are currently the target of primary prevention efforts by the WSIB. Dr. Curtis Breslin, Scientist, is embarking on several studies examining the unique risks of work-related injury among young workers, and the links between labour-market experiences and youth health.

Policies and programs within the social safety net designed to assist injured workers can also have consequences for health, disability and work-related injury. Understanding the behavioral consequences of insurance and regulation is another important theme at the Institute. Research has shown that compensation claims across North America have been declining over the past decade. At the same time, however, the cost of workers' compensation and other disability insurance programs have continued to rise. Research under this theme is focussed on better understanding whether the observed trends are attributable to specific incentives created by regulation or insurance schemes. The work will provide useful information for the development of policies and programs that encourage prevention efforts, effective care, and timely, safe return to work.

"Two emerging research programs under this theme will have national policy significance. There is a greater reliance in the workforce on contingent or non-standard employment arrangements."

Life after a serious injury

When Joseph went to his new job on a construction site two years ago, little did he know how his life was about to change—forever. On his second day on the job, Joseph fell two stories from the building he was working on and broke his back. He is now paralyzed from the waist down. "What ever happened to Joseph?" asked one of his co-workers one year later. While some thought Joseph was doing well, even trying to get a new job, his family was not so sure. What does happen to people like Joseph who sustain a permanent impairment?

Dr. Emile Tompa, Scientist, is leading an important new study that will investigate the impact of a permanent impairment arising from work-related accidents on a person's earnings and participation in the labour force. Unemployment rates for those who sustain serious work-related injuries are quite high for several years post accident. One of the objectives of Tompa's study is to look at whether programs designed to replace lost labour-market income for permanently disabled workers are adequate and equitable.

Permanent partial disability awards total approximately $1.3 billion annually in Ontario and represents the largest benefits program of the WSIB. "We will investigate several questions in our study relating to the adequacy and equity of benefits and the labour-market earnings success of individuals post accident," says Tompa. "We also plan to examine issues such as regional differences in earnings success and family income dynamics post accident."

The study will also investigate the impact a permanent impairment has on the injured worker's family. "We want to find out whether these injured workers are at greater risk of family dissolution than their non-injured counterparts. A higher risk may suggest a need for more support programs in the first few years following an accident," says Tompa.

The project involves a unique linkage and analysis of data from Statistics Canada's Longitudinal Administrative Databank (LAD) with data from the Ontario Workplace Safety & Insurance Board. Two groups of injured workers will be examined, each group having received compensation under different programs.

"Our study will have very important policy implications for workers' compensation programs and benefits providers," says Tompa. Results of the project are anticipated in 2003.

Transferring Research Knowledge

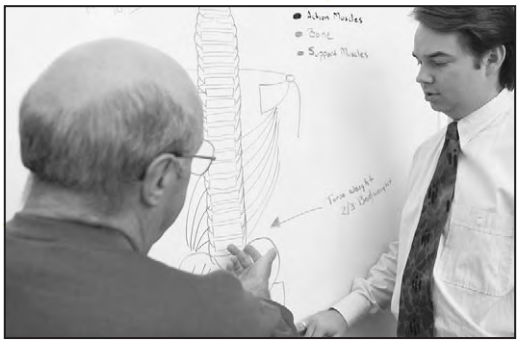
Research transfer is an activity with many names—knowledge transfer, knowledge translation, research utilization—but the ultimate goal of the activity is the same: Put research information into the hands of key decision-makers in a strategic manner that will enable them to use that knowledge to reduce injury, disease and disability in Ontario workplaces.

"Sharing effective transfer strategies is an important part of the research transfer mandate of the Institute."

Research transfer was established as a core business at the Institute in 1999 and is a key component of the Institute's contribution to the primary and secondary prevention of workplace injuries and disability. Research transfer is supported by a core set of communications activities, including the Institute's bimonthly publications *At Work* and *Infocus*, the web site and media relations. In the past four years, the department has grown and evolved, building on evidence-based practices for research transfer.

"One of the most effective ways we found to date for transferring knowledge to clinical audiences is the use of Educational Influentials (EI)," says Research Transfer Associate Rhoda Reardon. Developed by Roland Hiss in the 1980s, this approach suggests that clinicians select mentors or informed "teachers" who become trusted knowledge sources. Using this approach, Reardon began work on a large project with physiotherapists in collaboration with the College of Physiotherapists of Ontario.

The EI project aims to create increased awareness and implementation of evidence-based practices for the management of low-back pain among physiotherapists treating patients with these conditions. Baseline information on practice patterns and the names of EIs were collected through a self-report survey. EIs were then brought together for a training session and information exchange before heading back to their communities. A follow-up survey of the physiotherapists will determine whether the exchange had an impact on practice.



Workplaces require different approaches to knowledge transfer. A pilot project in three manufacturing companies led by Research Transfer Associate Dee Kramer found that sustained, interactive engagement (both in duration and in the number of contacts) is key to a successful knowledge transfer intervention. It helps build trust and credibility, and allows the Knowledge Broker to learn the corporate culture so that the research knowledge can be applied to specific workplace problems.

While this approach was very successful, the challenge for research transfer is the need to reach hundreds of thousands of businesses across Ontario. “We plan to reach more workplaces through closer links with the Health and Safety Associations (HSAs) in Ontario,” says Director, Research Transfer, Jane Bartram. An HSA Liaison Committee has been formed, and workshops and pilot projects that will help transfer research messages on the prevention of injuries and creation of healthy workplaces are in the planning stages.

Sharing effective transfer strategies is an important part of the research transfer mandate of the Institute. In 2001, the Institute was involved in several fora of exchange, including the Association of Workers’ Compensation Boards of Canada’s *Public Forum on Knowledge Transfer for Workplace Health and Safety*. Both researchers and research transfer staff played key roles at this conference that brought together prominent thinkers to share knowledge and expertise with workplace parties, decision makers, health and safety practitioners and other researchers. The Research Transfer department has also had a major role in the development of the Canadian Research Transfer Network, which is being launched in 2002.

Auditor's Report

We have audited the balance sheet of Institute of Work & Health as at December 31, 2001 and the statements of operations, net assets and cash flow for the year then ended. These financial statements are the responsibility of the organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the organization as at December 31, 2001 and the results of its operations and cash flow for the year then ended in accordance with Canadian generally accepted accounting principles.

Stern Cohen LLP

Chartered Accountants.
Toronto, Canada.
February 20, 2002.

Statement of Operations

For the year ended December 31,	2001 ($)	2000 ($)
Revenue		
Workplace Safety & Insurance Board of Ontario	4,500,000	4,499,778
Other (Note 5a)	1,237,810	860,246
Interest	45,177	45,130
	5,782,987	5,405,154
Expenses		
Salaries and benefits	3,879,261	3,777,633
Travel	136,075	134,652
Supplies and service	127,712	126,848
Occupancy costs	415,850	386,866
Equipment and maintenance	85,228	65,649
Publication and mailing	113,109	160,454
Voice and data communications	33,527	29,871
Staff training	51,746	62,784
Outside consultants (Note 5b)	235,148	127,152
Other	166,857	79,429
Capital assets amortization	237,064	186,613
	5,481,577	5,137,951
Excess of revenue over expenses for the year	301,410	267,203

See accompanying notes

Statement of Net Assets

For the year ended December 31,	2001			2000
	Invested in capital assets	Unrestricted (Note 5c)	Total ($)	Total ($)
Beginning of year	314,039	451,713	765,752	618,549
Excess (deficiency) of revenue over expenses for the year	(237,064)	538,474	301,410	267,203
Investment in capital assets	706,713	(706,713)	—	—
Awards to Foundation (Note 5f)	—	(116,000)	(116,000)	(120,000)
End of year	783,688	167,474	951,162	765,752

See accompanying notes page 24.

Statement of Cash Flow

For the year ended December 31,	2001 ($)	2000 ($)
Operating activities		
Excess of revenue over expenses for the year	301,410	267,203
Items not involving cash		
Amortization of capital assets	237,064	186,613
Amortization of lease inducements	(56,792)	(68,280)
Deferred revenue	(415,656)	(55,231)
Working capital from operations	897,338	330,305
Net change in non-cash working capital balances related to operations	(107,853)	(6,046)
Cash from operations	789,485	324,259
Investing activities		
Purchase of capital assets	(706,713)	(179,861)
Short-term investments	109,173	(21,143)
	(597,540)	(201,004)
Financing activities		
Loan payable	197,055	–
Awards to Foundation	(116,000)	(120,000)
	81,055	(120,000)
Change in cash during the year	273,000	3,255
Cash		
Beginning of year	374,910	371,655
End of year	647,910	374,910

See accompanying notes on page 24.

Balance Sheet

Incoporated under the laws of Ontario

As at December 31,	2001 ($)	2000 ($)
Assets		
Current assets		
Cash	647,910	374,910
Short-term investments	540,273	649,446
Accounts receivable - related foundation	72,600	65,225
- other	171,845	66,860
Prepaid expenses and deposits	71,092	10,287
	1,503,720	1,166,728
Capital assets (Note 2)	783,688	314,039
	2,287,408	1,480,767
Liabilities		
Current liabilities		
Accounts payable	203,960	138,426
Deferred revenue (Note 3)	935,231	519,575
Due to Workplace Safety & Insurance Board of Ontario	–	222
Lease inducement	–	56,792
Current portion of loan payable (Note 4)	39,000	–
	1,178,191	715,015
Loan payable (Note 4)	158,055	–
	1,336,246	715,015
Net Assets		
Invested in capital assets	783,688	314,039
Unrestricted	167,474	451,713
	951,162	765,752
	2,287,408	1,480,767

Other information (Note 5)

See accompanying note page 24.

Approved on behalf of the Board:

Director *Director*

Notes

The Institute for Work & Health was incorporated without share capital on December 20, 1989 as a not-for-profit organization.

The Institute is a knowledge-based organization that strives to research and promote prevention of workplace disability, improved treatment, optimal recovery and safe return to work. The Institute is dedicated to research and the transfer of research results into practice in clinical, workplace and policy settings.

The Institute is predominantly funded by the Workplace Safety & Insurance Board of Ontario (WSIB) up to the Institute's approved WSIB budget. Other Revenues are generated through research activities and certain interest earned.

1. Significant accounting policies

(a) Amortization

Capital assets are stated at cost. Amortization is recorded at rates calculated to charge the cost of the assets to operations over their estimated useful lives. Maintenance and repairs are charged to operations as incurred. Gains and losses on disposals are calculated on the remaining net book value at the time of disposal and included in income.

Amortization is charged to operations on a straight-line basis over the following periods:

Furniture and fixtures	- 5 years
Computer equipment	- 3 years
Leaseholds	- term of the lease

(b) Revenue recognition

The Institute follows the deferral method of accounting for contributions. Restricted contributions, which are contributions subject to externally imposed criteria that specify the purpose for which the contribution can be used, are recognized as revenue in the year in which related expenses are incurred. Unrestricted contributions, which include contributions from the WSIB, are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

(c) Investments

Short-term investments are carried at cost.

2. Capital Assets

	Cost	Accumulated amortization	Net 2001 ($)	2000 ($)
Furniture & fixtures	449,563	254,027	**195,536**	59,237
Computer & equipment	878,983	681,726	**197,257**	240,368
Leasehold	434,328	43,433	**390,895**	14,434
	1,762,874	979,186	**783,688**	314,039

3. Deferred revenue

The Institute records contributions as deferred revenue until they are expended for the purpose of the contribution.

	2001 ($)	2000 ($)
NIOSH	**270,261**	182,893
OCHS	**230,969**	–
HEALNet	**109,214**	61,366
CIHR	**46,898**	–
SSHRC	**38,160**	–
CHSRF	**33,449**	17,523
NHRDP	**20,168**	51,134
HRDC	**1,206**	48,184
Other	**184,906**	158,475
	935,231	519,575

4. Loan payable

The loan payable, from the organization's landlord, bears interest at 9% per annum and is repayable $4,486 monthly on account of principal and interest until maturity May 2006.

Principal payments are due as follow:

	($)
2002	39,000
2003	41,500
2004	45,000
2005	49,500
2006	22,055
	197,055

Notes

5. Other information

(a) Other revenue

	2001 ($)	2000 ($)
NIOSH	**149,149**	98,098
HEALNet	**93,513**	140,709
CHSRF	**92,049**	20,630
OCHS	**87,676**	–
HRDC	**65,693**	39,722
NHRDP	**51,385**	86,298
SSHRC	**32,761**	–
University of Saskatchewan	**34,331**	393
OIC	**21,345**	115,729
NPHI	**18,821**	98,398
Relocation costs	**361,184**	–
Other	**229,903**	260,269
	1,237,810	860,246

(b) Outside consultants

	2001 ($)	2000 ($)
University co-investigators	**191,010**	78,399
Other project-related services	**20,179**	29,501
Other services	**23,959**	19,252
	235,148	127,152

(c) Unrestricted net assets

Unrestricted net assets are not subject to any conditions which require that they be maintained permanently as endowments or otherwise restrict their use.

	2001 ($)	2000 ($)
Total assets	**2,287,408**	1,480,767
Invested in capital assets	**(783,688)**	(314,039)
	1,503,720	1,166,728
Liabilities	**(1,336,246)**	(715,015)
Unrestricted net assets	**167,474**	451,713

(d) Commitments

The Institute is committed under a lease for premises which expires May 31, 2006 with annual rents, exclusive of operating costs as follows:

	($)
2002	**189,000**
2003	**189,000**
2004	**189,000**
2005	**189,000**
2006	**79,000**
	835,000

(e) Pension

For those employees of the Institute who are members of the Hospitals of Ontario Pension Plan, a multi-employer final average payment contributory pension plan, the Institute made contributions to the Plan during the year amounting to $83,976 (2000 - $77,791).

(f) Related party transactions

The financial statements included the following balances and transactions with The Foundation for Research and Education in Work & Health Studies.

	2001 ($)	2000 ($)
Transactions		
Awards to Foundation	**116,000**	120,000
Balances		
Accounts receivable	**72,600**	65,225

These transactions and balances are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

Subsequent to year-end the Institute awarded $50,000 to the Foundation. The award was made from the Institute's surplus which had accumulated from revenues earned to December 31, 2001.

(g) Commitments and contingencies

The Institute has entered into certain multi-year contracts with various professionals for research services. The contracts provide for fixed annual payment amounts along with certain provisions for early termination for such contracts. If these contracts were to be terminated with sufficient notice, management's estimate of the liability is approximately $500,000. The Institute believes that early termination of such contracts is unlikely.

(h) Investments

At December 31, 2001 the cost of short-term investments approximated market value.

(i) Financial instruments

The organization's financial instruments consist of cash, short-term investments, accounts receivable, accounts payable and loan payable. It is management's opinion that the organization is not exposed to significant interest, currency or credit risks arising from these financial instruments.

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