

Research and Workplace Innovation Program

Funding occupational health research, training and education and innovative workplace solutions



2015 ANNUAL REPORT

President's Message



“Since 2009, the Research and Workplace Innovation Program (RWIP) has set aside \$1 million annually to fund high quality scientific research and programs that develop, implement or evaluate innovative, practical, shop-floor solutions for improving workplace safety and health. The WCB recently added a third funding stream for Training and Education projects which supports projects in occupational safety and health that are consistent with *Manitoba's Five-Year Plan for Workplace Injury and Illness Prevention*.

By making funding available, the RWIP continues to encourage the development of injury prevention and return to work programs in a variety of industry sectors. Together with workers and employers, the WCB is working to reduce the days lost to workplace injury and illness throughout Manitoba.”

– **Winston Maharaj**

President and CEO, Workers Compensation Board of Manitoba

The Research and Workplace Innovation Program

The mission of the Workers Compensation Board of Manitoba (WCB) is to insure and support safe and healthy work and workplaces. We put workers and employers at the centre of all we do and provide them with valued services for injury prevention, compensation and return to health and work while maintaining system integrity.

The WCB established the Research and Workplace Innovation Program (RWIP) in 2009. The RWIP promotes and funds workplace innovation, scientific research, training and education and knowledge transfer projects related to the prevention of occupational injuries and illnesses and the treatment and safe return to work of injured and ill workers. 2015 marks the seventh year of the program.

The RWIP makes available \$1 million each year through three core funding streams:

- Workplace Innovation funding for projects that lead to improvements in safety and health and foster successful rehabilitation and safe return to productive and meaningful work at a specific workplace or workplaces
- Scientific Research funding for high quality scientific research on significant issues related to workers compensation
- Training and Education funding for instructional programs or activities related to workplace safety and health, injury prevention, safe return to work and occupational illness.

Workplace Innovation Funding supports projects that:

- Develop, implement and evaluate innovative, practical solutions that improve workplace safety and health, and foster successful rehabilitation and safe return to productive and meaningful work of injured or ill workers.
- Apply new information and technology to address occupational safety and health issues.
- Use existing knowledge in new ways to solve problems in occupational safety and health.
- Transfer knowledge to the workplace through the development of education and training materials or programs in workers compensation issues or occupational safety and health.

Scientific Research Funding supports high quality studies that:

- Develop a stronger understanding and further current knowledge of workplace injuries, illness and disease.
- Identify, prevent, treat or support recovery from workplace injuries, illness and disease.
- Explore risk factors associated with specific industries, occupations, technologies, work processes or other factors that may give rise to workplace injuries, illness and disease.
- Expand Manitoba's research capacity in occupational safety and health and issues related to workers compensation.

Training and Education Funding

Consistent with *Manitoba's Five-Year Plan for Workplace Injury and Illness Prevention* the objectives of this funding stream are to support and fund projects that:

- Develop or expand capacity for training that will benefit Manitoba workplaces, industry sectors or occupational groups.
- Address gaps in the delivery of training and education.
- Promote training that is sensitive to culture and language of immigrant workers and workers at risk.
- Improve training in workplace risk assessment and hazard identification related to safety and health, injury prevention and safe return to work.
- Apply new information, technology, work processes or other factors to address injury prevention, safe return to work and occupational illness.

Other Funding

In addition to the core funding streams, the RWIP may provide special funding for initiatives that are within the terms of reference of this program but do not meet the specific requirements of the core funding streams; issue Requests for Proposals (RFPs); and partner with other workers compensation authorities, research agencies or third parties to undertake research or projects related to prevention in the workplace or workers compensation.

Knowledge Transfer and Exchange (KTE)

An ongoing objective of the RWIP is to ensure the resources developed and learning gained from RWIP projects are broadly shared and used by WCB leadership and staff as well as Manitoba employers, workers and policy makers. Currently, resources from completed RWIP projects are promoted on the WCB and SAFE Work Manitoba websites through various newsletters and publications that provide information about the availability of a completed project's resources. These resources may be accessed at:

Research and Workplace Innovation Program | Workers Compensation Board of Manitoba – wcb.mb.ca/research-and-workplace-innovation-projects

SAFE Manitoba – safemanitoba.com/campaign/rwip

In addition, project resources and research findings are shared with relevant WCB departments, external users and interested parties. Grant recipients promote the results and outcomes of their projects with their respective community of practitioners or with knowledge experts at seminars, conferences and in peer-reviewed publications. Since 2009, a total of 23 projects have been completed with financial support from the RWIP.

Several workshops and presentations to share findings of studies have been hosted over the last seven years including a presentation of preliminary findings to senior staff of the WCB by Chris McLeod, University of British Columbia, of the study: *A Comparative Analysis of Severe Work-Related Injuries and Long Duration Claims in Three Canadian Provinces*.

RWIP is giving increasing importance to engaging external audiences and stakeholders in developing research questions and identifying knowledge gaps or barriers in specific study areas. The mechanism of the Project Advisory Committee has been used to support this approach to KTE. This has the dual benefit of creating a pool of ambassadors committed to dissemination of results and findings as well as having knowledge experts on the study team who will ensure that findings will be relevant and useful to communities of practitioners and stakeholders.

To better leverage project results and to add value to RWIP's funding initiatives, the Manager and staff of the RWIP attended the course "Knowledge Translation Professional Certification" offered by the Learning Institute, Hospital for Sick Kids, Toronto. This one-week course resulted in the professional certification of RWIP staff in KTE.

The development of a KTE plan will become established business practice for all new RWIP funded projects. The plan will incorporate best practices from the Integrated KTE Model which includes knowledge transfer initiatives from project start to finish. RWIP is confident that an integrated KTE plan will lead to a robust dissemination of project findings as projects evolve, develop and reach their conclusion.



WCB staff at the KTE presentation by Chris McLeod



Left to right: William Quirke, Chris McLeod, Bruce Cielen, Alice Sayant and Darren Oryniak at the KTE presentation by Chris McLeod

RWIP Approved Projects 2009 to 2015

Over the last seven years, a total of 56 projects have been approved for funding. Of those, 15 were workplace innovation projects, 23 were scientific research studies, seven were training and education projects, five were partnerships, five were RFPs and one was a special funding project. The table below provides an overview and status report of the projects approved for funding from 2009 to 2015.

Original Approved Projects			Status of Projects				
Funding Stream	Number of Projects	Original Approved Funding	Completed	Cancelled	New Projects Approved in 2015	In Progress	Revised Funding
Workplace Innovation	15	\$1,974,237	10	1	1	3	\$1,619,630
Scientific Research	23	\$3,135,580	6	1	3	13	\$2,987,586
Training and Education	7	\$744,719			3	4	\$774,719
Partnerships	5	\$545,605	3			2	\$669,805
Special Funding	1	\$300,000				1	\$300,000
Request for Proposals	5	\$324,875	4	1			\$359,710
Totals:	56	\$7,025,016	23	3	7	23	\$6,711,450*

* Revised funding may occur in two ways. Frequently the entire original funding is not required for the successful completion of a project, resulting in a decreased funding amount. Occasionally a grant recipient may request an increase in funding. The Administration may approve increases up to \$20,000 as long as the total project cost does not exceed \$200,000. Increases in excess of those amounts are subject to Board approval.

New Grants Awarded in 2015

Workplace Innovation

ENGAGING AN ORGANIZATION IN THE PREVENTION OF WORK RELATED INJURIES

Kim Roer, St. Boniface Hospital

\$49,706

This project will identify and implement enhancements to the Occupational Health & Safety Incident Tracker (OHSIT) system currently in use at St. Boniface Hospital (SBH). The OHSIT currently uses visual displays to track and record injuries. Visual displays offer a unique way to see where all workplace incidents occur and can quickly show clusters and trends in injuries by spatial location and location on the body. The objectives of the project are to determine and implement enhancements to the visual displays. This includes the development of a “how to” manual for use of the displays. It will assist managers, supervisors and directors to correct safety issues, monitor corrective actions and prevent incidents. The project will set out clear expectations and directions for leaders to improve injury prevention strategies. Once this process is complete, the applicant will pilot the use of the enhanced visual displays within two departments to assess the “how to” manual and then develop a plan for facility wide implementation.

The knowledge transfer and exchange (KTE) plan for the project will include sharing the results of the project with all regional health authorities. They will also be shared at SBH Manager Information Meetings and various committee meetings such as the SBH Joint Union Hospital Council and the Provincial Health Workplace Injury Reduction Advisory Committee. The applicant plans to present the results of this project to the Safe Healthcare Conference and the safety conference hosted by Safety Services Manitoba.



St. Boniface Hospital is committed to actions that will prevent work related injuries. By acknowledging the complexity of injury prevention and applying lean problem-solving methods, this project aims to engage managers and frontline workers in a new and unique way. This project will advance an injury prevention system using a visual tool to trigger action, dig deeper into root cause, stimulate ideas and develop strategies to promote safe work and a safe work environment.

Left to right: Kim Roer, Paulette McCarthy and Cathy Gamby, St. Boniface Hospital

Scientific Research

SUPERVISOR AND WORKER PERSPECTIVES ON WORKPLACE ACCOMMODATIONS FOR MENTAL HEALTH

Vicki Kristman, Lakehead University; Marc Corbière, Université du Québec à Montréal; William Shaw, Liberty Mutual Research Institute for Safety; Karen Harlos, University of Winnipeg; Margaret Cernigoj, Workplace Safety and Prevention Services, Mississauga, Ontario

\$154,889

This study will determine the factors that support workplace accommodations for workers with a mental health disorder (MHD) from the perspectives of supervisors and workers. MHD is characterized by alterations in thinking, mood or behaviour associated with significant distress and impaired functioning over an extended period of time. The study will develop predictive models to explain supervisor willingness to accommodate workers with MHD and the accommodations that workers receive. The findings will provide a conceptual basis for the design and refinement of workplace interventions to accommodate workers with MHD, lead to improvements in interventions for return to work, create awareness of the factors that influence and trigger MHD and provide better understanding for the management of claims associated with MHD.



Mental health issues are a major cause of human suffering, lost productivity, workplace disability and economic loss. We look forward to partnering with the Workers Compensation Board of Manitoba to identify factors associated with supervisor support of workplace accommodations for mental health disorders and factors associated with the types of accommodations workers with mental health disorders receive. These findings can be used to develop interventions to improve workplace accommodations for workers with mental health disorders.

Left to right: William Shaw, Liberty Mutual Research Institute for Safety, Marc Corbière, Université du Québec à Montréal, and Vicki Kristman, Lakehead University

MENTAL HEALTH OUTCOMES FOLLOWING WORKPLACE INJURY

Sarvesh Logsetty, University of Manitoba; Jitender Sareen, James Bolton and Allen Kraut, University of Manitoba; Dan Chateau, Manitoba Centre for Health Policy
\$199,966

This study will examine whether mental illness following a workplace injury is an outcome of the workplace injury or results from other causes. The study will compare a group of injured workers with two other groups: a cohort of persons with similar but non-work related injuries and an uninjured group drawn from the general population. The study will also examine the differences in mental illness between the three cohort groups. The researchers plan to link data from the Workers Compensation Board of Manitoba (WCB) with data from the Data Repository at the Manitoba Centre for Health Policy.

The findings from the study will provide evidence to enhance understanding of the relationship between mental health issues and workplace injury and the onset of mental illness in injured workers. It will also inform WCB policy and practice in the adjudication and management of psychological injuries in the workplace.



Traumatic injury can have long-term consequences. Surgery, therapy, and pain can result in stress that can lead to anxiety, depression and other mental disorders. What is not clear is if more rapid access to healthcare resources through the Workers Compensation Board can improve these outcomes or if other stresses such as the temporary loss of employment worsen the development of these mental disorders. As well there are factors that can predict persons who might benefit from earlier interventions. The goal of this project is to identify the risk and resilience factors that are associated with traumatic injury related to work. We will use information on physician billing and hospital admissions to learn more about these questions.

Sarvesh Logsetty, University of Manitoba

DEVELOPMENT OF A COMPREHENSIVE TOOLKIT FOR EVALUATING WORKPLACE MUSCULOSKELETAL INJURY INTERVENTIONS: SWINE INJECTION TECHNOLOGIES AS A TEST CASE

Catherine Trask, University of Saskatchewan; Brenna Bath, Stephan Milosavljevic, Aaron Kociolek, Bernardo Predicala, Lee Whittington and Erika Penz, University of Saskatchewan

\$100,000

This study will develop a comprehensive toolkit to evaluate workplace injuries caused by musculoskeletal injuries (MSIs) and ergonomic risks among workers in the pork industry in Manitoba and Saskatchewan. The toolkit will include a set of decision-making protocols to measure the costs and benefits of needle-less and hypodermic injectors in terms of safety and health as well as to the costs of production in the swine production industry. The findings will provide evidence-based economic and productivity information that producers could use in their decision-making. It will also be transferable to other animal care tasks in livestock farming, veterinary services and equestrian work.

Needle-less injectors eliminate the problems caused by needle-stick injuries, are more consistent in vaccine delivery, use smaller volume of vaccine, have higher antigen dispersion, better immune response and eliminate the need for needle disposal. Research in this area is scarce because of the diversity of tasks on farms, limited direct-measurement technologies and access to farms. This study will collect ground-breaking data directly from hog barns in Manitoba and Saskatchewan.



Funding from WCB Manitoba allows us to focus on research issues that matter to industry, to practitioners and especially to workers' safety and health on the job. In this project we are working together with industry stakeholders to ensure our findings are applicable in real workplaces.

Catherine Trask, University of Saskatchewan

Training and Education

STANDARDIZED & INTEGRATED SAFETY TRAINING FOR MANITOBA'S SKILLED TRADES

Sudhir Sandhu, Manitoba Building and Construction Trades Council and Allied Hydro Council of Manitoba;

Paul Holden, Manitoba Institute of Trades and Technology

\$197,150

The Manitoba Building & Construction Trades Council (MBCTC) is a non-profit umbrella organization representing 13 building trade unions with more than 6,000 members in the province's construction industry. The project will review current training programs, analyze the extent, capacity and standardization of existing safety training and develop a Model for Integrated Standardized Safety Training (MISST). The MISST will include uniform core safety competencies customized to meet specific occupational requirements in the building trades.

The training model will be shared with Apprenticeship Manitoba; Allied Manitoba Sector Councils; employers; trade unions; high schools; colleges; pre-employment programs; SAFE Work Manitoba; and other safety and health stakeholders and partners.



Sudhir Sandhu, Manitoba Building and Construction Trades Council of Manitoba

Historically, unions have played a crucial role in improving workplace safety and health conditions. As our systems have evolved, workplace safety is now the primary consideration for workers, employers and government regulators. The three primary stakeholders make substantial investments in workplace safety training; sometimes in collaboration and often by individual initiative. This project is an effort to review training initiatives to determine how effectively safety is integrated into day-to-day work practices. As a systemic review, we expect to understand how the system is performing and to identify opportunities for improvement.

EXPLORING THE NEW STANDARD: PSYCHOLOGICAL SAFETY IN THE WORKPLACE USING JOINT WORKPLACE HEALTH AND SAFETY COMMITTEES. RISK/HAZARD IDENTIFICATION, REDUCING THE HAZARD, EDUCATION AND EVALUATION

Maureen Grace, Hamilton Grace and Associates

\$29,635

Maureen Grace of Hamilton Grace and Associates, a private consultancy firm, will implement Canada's national standard for Psychological Health and Safety in the Workplace (the Standard) at Red River College (RRC). Members of RRC's Joint Workplace Health and Safety Committees (JWH&SC) will be trained to lead the implementation of the Standard. The consultant will work with the JWH&SC, RRC champions and staff members to develop and implement a sustainable psychological safety and health program for RRC.

The Standard is a set of guidelines, tools and resources for promoting the psychological health of employees and preventing psychological harm due to workplace factors. It consists of nine key areas for implementation that include leadership commitment, development of an implementation plan, identification of a workplace's psychological safety and health hazards, education, training and awareness and data collection to monitor and evaluate the psychological health of a workplace.



Workers have a right to a psychologically safe workplace which will promote a healthy work culture with healthy employees. Currently the standard of Psychological Safety in the Workplace is voluntary and Red River College has shown great initiative in their desire to ensure their workplace is psychologically safe. Hamilton Grace and Associates is pleased to be working with Red River College's Joint Workplace Health and Safety Committee to assess the current strengths and areas of concern, develop strategies to address some of those areas, implement the strategies with the help of champions/advocates throughout the College and evaluate progress.

Left to right: Maureen Grace, Hamilton Grace and Associates, Jason McMaster and Lori Grandson, Red River College

WORKSAFELY ONLINE PROGRAM

Don Hurst, Manitoba Heavy Construction Association; Jackie Jones, Manitoba Heavy Construction Association
\$186,400

The Manitoba Heavy Construction Association (MHCA) will undertake a project to digitize four safety training courses under MHCA's WORKSAFELY program and offer these courses in an e-learning or online format. Over a two year period, the MHCA plans to digitize four safety training courses: Flag Person, Personal Protective Equipment (PPE), Prime Contractors and Road Builders Safety. The target group for this project includes general labourers, trades people, new supervisors and safety trainers working in Manitoba's construction and transportation sectors. The project will undertake a review of the current safety content of the four courses and validate the changes with industry partners.

The revised safety curriculum will be converted into digital formats and piloted with three construction companies. The revised training courses will be shared with construction companies including two northern Aboriginal construction companies, safety associations, vocational high schools and Manitoba Start, an immigrant settlement agency, and other industry partners.



The Manitoba Heavy Construction Association is pleased to receive support through the Research and Workplace Innovation Program which will provide us with the opportunity to begin the development of customized e-learning programs for the heavy construction industry. This will allow the MHCA to strengthen existing training programs, provide flexibility and alternatives to classroom training and assist in providing greater access to training opportunities in northern and remote areas of Manitoba.

Left to right: Don Hurst and Jackie Jones, Manitoba Heavy Construction Association

Chairperson's Message



"The Research and Workplace Innovation Program makes major investments in research that garner praise from both employers and workers. By working collaboratively with researchers along with training and safety experts, we are strengthening a culture of safety for all Manitoba workplaces. Developing and fostering partnerships in the community has led to a number of valuable programs aimed at reducing workplace injuries and illnesses. By supporting these programs over the past decade, we've helped employers to reduce their injuries and the related costs. For workers, the benefits have been fewer workplace injuries and help with recovery and return to work. "

– Michael Werier

Chairperson, Workers Compensation Board of Manitoba

Projects Completed in 2015

ENHANCING SECLUSION AND RESTRAINT-FREE MENTAL HEALTH SERVICES: PROMOTING EMPLOYEE SAFETY THROUGH CULTURAL CHANGE, TRAUMA-INFORMED CARE AND THE USE OF INNOVATIVE STRATEGIES FOR VIOLENCE PREVENTION AND MANAGEMENT

Debbie Frechette, Mental Health Program, Health Sciences Centre, and Lisa Knechtel, Adult Mental Health Program, Health Sciences Centre

\$125,768 awarded in 2013

The seclusion and restraint of patients in locked rooms has historically been employed to control the behaviour of mental health patients who present with aggression. Seclusion and restraint controls behaviour by restricting a patient's mobility, but this method of control often results in physical and psychological risks to patient and staff. Studies show that seclusion and restraint has limited therapeutic value and that mental health nurses are four times more likely to be assaulted by patients than those in any other nursing discipline.

The *Six Core Strategies for Reducing Seclusion and Restraint Use* (SCS) program was initially implemented in the Health Sciences Centre (HSC), PY3S unit in 2011. The project achieved outstanding results as the episodes and duration of seclusion and restraint decreased dramatically as the project unfolded. The results of this pilot project may be accessed at:

http://safemanitoba.com/sites/default/files/files/PsychHealth%20Seclusion%20Reduction%20to%20WCB_04-03.ppt

HSC applied for and was approved funding to implement the SCS program in five other units at the HSC, as well as at Grace General Hospital (GGH), St. Boniface Hospital (SBH), Seven Oaks General Hospital (SGH) and Victoria General Hospital (VGH). PY3S, the HSC unit which initially piloted the program also continued to implement the program. The program was launched in the new sites in 2014. The overarching goal was to improve patient and staff safety using the SCS program, educate staff to treat aggressive patients using the least restrictive means possible and promote recovery and hope models.

The results in all new sites were outstanding. Episodes of seclusion and restraint decreased by 42 per cent, duration of seclusion and restraint declined by 45 per cent and the number of work days lost due to injury decreased by 55 per cent at the completion of the project when compared to project start. The evidence shows that the SCS program is an effective injury prevention strategy as seen by the significant outcome improvements in all participating healthcare sites. The project report, *Enhancing Seclusion and Restraint-Free Mental Health Services: Promoting Employee Safety through Cultural Change, Trauma-Informed Care and the Use of Innovative Strategies for Violence Prevention and Management* may be accessed at:

<http://www.wcb.mb.ca/enhancing-seclusion-and-restraint-free-mental-health-services>

FARM SAFETY CURRICULUM DEVELOPMENT AND PILOT COURSE DELIVERY

Michele Rogalsky and Lorrie Koroscil, School of Agriculture, University of Manitoba
\$100,000 awarded in 2013

This project was based on an identified need for emerging and existing agricultural producers to access timely and relevant information on farm safety. The project was implemented to reach farmers in the agricultural sector and students in the School of Agriculture who are potential new entrants into agriculture and will be the next generation of farmers in Manitoba. It was completed in September 2015.

The *Introduction to Farm Safety* course has been offered since 2013 to agricultural diploma students at the University of Manitoba and was re-developed for 2015 to be taught in a blended learning delivery format. In the blended program, part of the course is taught in a face-to-face classroom setting and the rest is completed in an online environment. The blended format acted as a stepping-stone as the *Introduction to Farm Safety* course was converted to an online course that will be offered to students starting January 2016.

The creation of an online course provides additional opportunities for those interested in learning about farm safety to access course materials at any time, from any place with internet access. The online course is interactive and learner-friendly, guiding students through the basics of farm safety and their responsibilities as both employers and workers. The learning objectives of this course include increasing awareness of farm safety legislation and improving the adoption of safer work practices on farms. Students learn that farm safety is an important component of farm business management. The top priority of the course is to influence students to translate the course materials into personal action and safe on-farm behaviour.

A one day workshop *Introduction to Farm Safety Workshop* was also held in Brandon, Dauphin and Winnipeg. In addition, the project team has completed the course *Advanced Farm Safety (Farm Safety Plan)*. The advanced course is slated for launch in 2017. This is a sustainable project as the School of Agriculture will continue to offer the *Introduction to Farm Safety (Awareness, Risk Assessment and Safe Operating Procedures)* and the *Advanced Farm Safety (Farm Safety Plan)* on an ongoing basis to students in the agriculture diploma program. The project report *Farm Safety Curriculum Development and Pilot Course Delivery* may be accessed at:

<http://www.wcb.mb.ca/farm-safety-curriculum-development-and-pilot-course-delivery>

TO CREATE INDICATORS AND TOOLS FOR SUPERVISORS TO USE AT THE JOB SITE IN IDENTIFYING POTENTIAL MUSCULOSKELETAL INJURIES ASSOCIATED WITH DRYWALL INSTALLATIONS

Ihor Barwinsky, Gypsum Drywall Interiors Ltd.

\$10,120 awarded in 2013

Drywall tasks are physically demanding and drywall workers often experience musculoskeletal injuries (MSIs) to the lower back and shoulder. Gypsum Drywall Interiors Ltd (GDI) was motivated to find innovative solutions to prevent MSIs among their drywall workers as the current safe work procedures for prevention of MSIs were generic and not specific to the movements, duration, intensity and repetitiveness of tasks in the drywall industry. The goal of this project was to reduce the frequency and severity of MSIs by training supervisors to identify and correct potentially injurious movements. The project was launched at 16 GDI worksites in Winnipeg and Steinbach.

GDI selected *Coach's Eye*, a video imaging program for adaptation to drywall tasks. This program is popular with coaches and trainers in professional sports. *Coach's Eye* provides an analysis of movement in images captured by video. The program allows the user to analyze a frame by frame movement of video images, identify incorrect movements and provide feedback for improvement.

The project initially faced several challenges during implementation as it often was difficult to immediately change workers' movements or postures. However, by six months after the project's start there was observed improvement and increased awareness among workers of the importance of body positions when performing tasks. Workers and supervisors were also provided with additional training to make simple adjustments to the job site; for example, adjusting the height of a scaffold to create a less strenuous position when performing a drywall task.

Video feedback was seen to be very persuasive in changing work practices compared to using verbal cues or instruction. Workers and supervisors were receptive to the *Coach's Eye* program as they saw it as a novel way to demonstrate the connection between muscular movement in athletics and the physical movement of drywall tasks.

The analysis of movement from the video resulted in the development of indicators that were identified as sources of potential injury. Potential indicators of injury include: mechanics of using muscle groups in correct order; proper posture to avoid excessive kyphosis (head forward with slumped shoulder posture) and lordosis (curved lower back); aligning the elbow under the load while performing overhead tasks; shoulder alignment; spine extension flexion; cervical spine movements; and changes in pace and productivity.

The project's successful outcomes resulted in several practical interventions by GDI to invest in job site improvements that support correct work postures and practices. The project's resources include videos of best practices and a poster to demonstrate correct job movements in drywall installation. The project demonstrated an innovative approach to injury prevention and the findings will be shared with other drywall installers in Manitoba.

The project's resources include a checklist, *Everything affects the back and shoulders*, and a poster, *There is a better way to move*. The project report, *To Create Indicators and Tools for Supervisors to Use at the Jobsite in Identifying Potential Musculoskeletal Injuries Associated with Drywall Installation* may be accessed at:

<http://www.wcb.mb.ca/indicators-and-tools-for-supervisors-to-use-at-the-jobsite-in-identifying-potential-musculoskeletal>

CLINICAL DECISION SUPPORT TOOLS FOR MANAGING DISABLING MUSCULOSKELETAL DISORDERS

Douglas Gross, University of Alberta; Ivan Steenstra, Institute for Work and Health; William S. Shaw, Liberty Mutual Research Institute; Nicola Shaw, Algoma University; and Kelly Williams-Whitt, University of Lethbridge
\$72,580 awarded in 2012

Front-line employees in healthcare and workers compensation frequently make challenging decisions about the most appropriate treatments for injured workers to help facilitate return to work. Clinical Decision Support (CDS) tools are designed to inform these decisions based on individual worker characteristics. The primary goal of this study was to conduct a scoping review of currently available CDS tools and identify and create an inventory of tools to help stakeholders make treatment decisions for patients with musculoskeletal injuries (MSIs). A scoping review is a type of research methodology that rigorously collects, synthesizes, appraises and presents findings from existing research on a topic in an emerging area of study.

The review located a total of 43 CDS tools. Eight of these were computer-based tools, 14 were treatment algorithms or decision models and 21 were Clinical Prediction Rules or classification systems. The review noted that most of these tools had not been tested or validated for use in clinical settings. The review concluded that although there are several publications regarding CDS tools, with the majority published since 2006, few involved formal evaluation or validation for the management of MSIs. The scoping review also noted that:

- The evidence for CDS tools was diverse, exploratory or developmental.
- The tools, models and classification systems identified are intended for use by health care providers.
- Results are inconsistent.
- No clear conclusions can be extracted from the algorithms or models.
- None of these tools, models or systems appears ready for widespread use in clinical practice to select interventions for patients with MSIs.

The study team consulted with knowledge users at the selection stage of studies for analysis and at summarizing and reporting results.

The final resources of this review include an inventory of available CDS tools for MSIs with commentary on the status of research in this area as well as key concepts and definitions for future reporting in this area. The report of the scoping review *Clinical Decision Support Tools for Managing Disabling Musculoskeletal Disorders* may be accessed at:

<http://www.wcb.mb.ca/clinical-decision-support-tools-for-selecting-interventions-for-patients-with-disabling>

INNOVATING CASTING EXCELLENCE

Kimberly Gretschmann, Standard Manufacturers Services Ltd.

\$103,957 awarded in 2012

Workers in a foundry are at high risk of burns and scalding from molten metal. To reduce the risk of sustaining burn injuries among the workers in the foundry, Standard Manufacturers Services Ltd. (SMS) developed integrated safety systems to support advanced robotic technology in their foundry. The foundry manufactures aluminum castings. The project also undertook a hazard analysis of tasks and developed a manual for training workers to work safely in the foundry's modified production processes. A video of the safe work procedures at SMS was used in a SAFE Work Manitoba safety promotion initiative.

After concluding the two year project, not a single foundry worker operating the robotic arm sustained a burn injury. The promotional video and project report *RWIP and Project Innovating Casting Excellence* may be accessed at:

<http://www.wcb.mb.ca/innovating-casting-excellence>

SAFETY CLIMATE SURVEY TOOL

Prairie Research Associates Inc.

\$52,880 awarded in 2012

This Request for Proposals was issued in 2013. After a competitive process, Prairie Research Associates Inc. was awarded the contract to undertake a review of the Safety Climate Tool used by the WCB to gather information from workers, supervisors and leaders to assess the safety climate of a workplace. The project undertook a literature review of safety climate and culture and 29 questions were selected for testing in two focus groups that comprised 20 participants from different industries. Based on feedback from the focus groups, the safety climate tool was revised and tested in two workplaces, Weststeel and Manitoba Harvest. The survey was piloted in three other workplaces. The new survey tool has been developed and is designed to streamline data collection, diagnose safety issues in individual workplaces and compare the safety performance of workplaces surveyed.

Since embarking on the Safety Climate Survey Tool project, SAFE Work Manitoba has begun work on a number of different projects related to implementing *Manitoba's Five Year Plan for Workplace Injury and Illness Prevention*. The safety climate survey is being considered as a tool to be used in a number of different SAFE Work Manitoba initiatives including safety certification. The report of the scoping review *Workplace Safety Climate Survey* may be accessed at:

<http://www.wcb.mb.ca/workplace-safety-climate-survey>

MUSCULOSKELETAL INJURY PREVENTION PROJECT FOR HOME CARE PROGRAM

Charlene Robert, Interlake-Eastern Regional Health Authority (The Interlake Regional Health Authority was merged with the North Eastman Health Association to form the Interlake-Eastern Regional Health Authority in May 2012.)

\$182,618 awarded in 2011

Ergonomic hazards in the workplace are a leading cause of musculoskeletal injuries (MSIs) among healthcare workers who provide home care services. The Interlake-Eastern Regional Health Authority (IERHA) implemented a new training program for safe transfer and client-handling procedures for all home care workers in the region. The goal of the program was to reduce MSIs caused by forceful exertion, awkward body postures and repetitive strain among home care workers. The new training program was developed based on an adaptation of the current MSI Prevention (MSIP) program for home care workers.

The project was successfully completed and achieved the following results:

- Three MSIP policies were developed for home care workers following consultations with several teams from other healthcare regions on Safe Patient Handling Procedures.
- A manual titled *Musculoskeletal Injury Prevention Manual: For Home Care Direct Service, Supportive Housing & Adult Day Program* was developed comprising 40 safe work procedures and relevant literature regarding the prevention of musculoskeletal injuries.
- Training was provided to home care managers and supervisors in the region.
- Fourteen front line staff were identified as MSIP Peer Leaders and trained to assist with the delivery of MSIP education and provide support to staff working in the community.
- By the completion of the project in July 2015, approximately 250 staff were trained.

This project is sustainable as the IERHA created a full-time job to implement the new training program for the region.

The new training manual will be shared with staff in MSIP training classes. The training manual and the project report *Home Care Musculoskeletal Injury Prevention (MSIP) 2013-2015* may be accessed at:

<http://www.wcb.mb.ca/musculoskeletal-injury-prevention-manual>

Projects in Progress

ENGAGING FRONTLINE MANAGERS AND SUPERVISORS TO PROMOTE MENTAL HEALTH AND PSYCHOLOGICAL SAFETY IN THE WORKPLACE: A TRAINING SEMINAR AND RESOURCE GUIDE FOR MANAGERS AND SUPERVISORS IN THE CONSTRUCTION, MANUFACTURING AND SERVICE SECTORS

Joel Gervais, Mental Health and Addiction Services and Dan Licoppe, Vocational Rehabilitation and Disability Management Services, Vital Life

\$119,580 awarded in 2014

Over the past 25 years Vital Life has been a private provider of vocational rehabilitation, return to work and disability management services in Winnipeg. Vital Life is developing and delivering a series of mental health and addictions training seminars for the construction, manufacturing and service sectors. The project's training will include resources in English, French, Cree, Tagalog and Punjabi that will be made available to seminar participants.

The project has been launched and an Advisory Committee set up with representation from Winnipeg Regional Health Authority, the WCB, DeFehr, Canada Post, Manitoba Public Insurance, Canada Goose, Merit Contractors Association, Safety Services Manitoba, Manitoba Liquor & Lotteries, SAFE Work Manitoba, FWS Group, Immigration Centre and the Bricklayers' Union. The training outline for the planned Lunch and Learn sessions and a draft training resource on psychological safety and health for managers and supervisors is under development.

FIRST LANGUAGE SAFETY AND HEALTH TRAINING FOR NEWCOMERS

Sonia Kowalewich, MFL Occupational Health Centre and United Food and Commercial Workers

\$87,234 awarded in 2014

The MFL Occupational Health Centre (OHC), in partnership with the United Food and Commercial Workers union (UFCW), developed and delivered a Train the Trainer program on Workplace Safety and Health for food processing workers in the Westman area. Fourteen newcomer workers were trained in this program from May to June 2015 over a five week period. The training program included the following topics: workplace safety and health; rights of workers to refuse dangerous work; identifying hazards in the workplace; common repetitive strain injuries; preventing repetitive strain injuries through ergonomics; mental health; human rights in the workplace; workers compensation system; role of the union; and adult education and workshop planning. The participants of the program will be responsible to deliver three workshops in their first languages to their co-workers over the next year and a half. Training will be delivered in Hindi, Mandarin, Russian/Ukrainian, Spanish and Tagalog. Participants in the Train the Trainer program reported that the program increased their knowledge of safety and health and that the transfer of this knowledge to newcomer workers from the different language groups will be valuable in promoting workplace safety and health and injury prevention.

A knowledge transfer program is planned for unions, safety and health committees and immigrant settlement workers on lessons learned and project outcomes. The training program is expected to reach approximately 200 temporary foreign workers from five cultural and language groups in the food processing industry.

HUMAN FACTOR FOCUSED MUSCULOSKELETAL INJURY PREVENTION TRAINING FOR CONSTRUCTION WORKERS

Marnie Courage, Enabling Access Inc.

\$84,800 awarded in 2014

Enabling Access Inc., a provider of safety and health services, will undertake Musculoskeletal Injury (MSI) Prevention Training for workers who are at risk of sustaining MSIs in small, medium and large companies in the construction sector. The project aims to reduce time loss injuries, specifically MSIs, and their associated costs to the worker, the workplace and the industry. The proposed training will cover courses on sprains, strains and tears; customized manual material handling; situational awareness; and ergonomics.

Phase One of the project has been launched and 12 companies will participate in the process of job evaluation. On completion of the job evaluations, customized training for reduction of MSIs will be provided at each job site. Companies participating in Phase One of the project are: Maple Leaf Construction; Nelson River Construction; Multicrete Systems Inc.; Southside Electrical; CIMCO Refrigeration; Penn-Co Construction; Alpha Masonry; North Perimeter Construction; Euro-Can Enterprises; and Supreme Steel.

TRADE-SPECIFIC RESPIRATORY PROTECTION TRAINING

Chris Hooter, International Union of Painters and Allied Trades, Local 739 (Painters), and John Sedor, International Union of Painters and Allied Trades

\$69,920 awarded in 2014

The primary purpose of this project is to provide trade-specific respiratory protection training to painters and workers in the allied trades and to educate these workers on the risks of exposure to chemicals and toxic substances. The training will reinforce the need to use respiratory protection due to inhalation risks associated with paint resins, solvents, thinners, pigments, co-reactants (for example epoxides, polyols or isocyanates) and common surface preparation. Painters Local 739 is in the process of training 200 workers over the project's two year duration. The project was launched in January 2015 and by July 2015, 70 workers were trained in the use of respiratory protection.

A KNOWLEDGE TRANSFER INTERVENTION WITH SUPERVISORS: CAN WE REDUCE INJURY BY IMPROVING KNOWLEDGE TRANSLATION STRATEGIES FOR DIRECT SUPPORT WORKERS OF PEOPLE WITH INTELLECTUAL DISABILITY WHO DISPLAY CHALLENGING BEHAVIOUR?

Beverley Temple, University of Manitoba and St.Amant Research Centre; Toby Martin, Jennifer Kilimnik, St.Amant Centre; Charmayne Dube, New Directions; Lisa Demczuk, University of Manitoba

\$180,000 awarded in 2014

The development of the safety e-book app is well underway. The content of several chapters has been developed with the technical experts for this project. This app is being customized to the iPad Textbook which has capability features to embed video, interactive charts, graphs and text to allow for a natural flow of information. A significant project goal is to train 60 workers to use the e-book at the selected work sites. The project promotes the application of new technology in occupational safety and health and e-learning, which recent research has shown is an effective way to impart knowledge to young workers and workers with English as an additional language.

In partnership with the University of Manitoba, this study aims to determine whether equipping supervisors with knowledge translation skills will reduce the gap between the training given to frontline staff and use of training when working with people with developmental disabilities at St.Amant.

This study is a sequel to an earlier study funded by the RWIP in 2011, which found that a gap exists between training and the application of training knowledge resulting in a high number of workplace injuries. The 2011 study is complete and the report can be accessed at:

<http://www.wcb.mb.ca/working-with-individuals-with-intellectual-disabilities-injuries-and-challenging-behaviour>

This is a three-phase study that includes a scoping review in phase one, using the findings of the review to develop a knowledge translation intervention in phase two and an experimental trial in the final phase of the study. A scoping review is a type of research methodology that rigorously collects, synthesizes, appraises and presents findings from existing research on a topic in an emerging area of study. The PARiHS (Promoting Action on Research Implementation in Health Services) Framework will be used throughout the study as the framework is proven to be an effective method to bring research evidence into practice.

The specific objective of the scoping review is to map available evidence on training of managers and their support of frontline staff who face challenging behaviour by people with intellectual and developmental disability. Research activities began in May 2015, with the development of protocols for the scoping review. The scoping review began in June and is ongoing. The main concepts being searched are intellectual/developmental disabilities, challenging behaviours, management and training. Twelve databases have been searched for peer reviewed publications and several websites for online grey literature.

The research team is aided by an advisory committee that includes representation from key stakeholders, New Directions for Children Youth Adults and Families, University of Manitoba Centre for the Advancement of Teaching and Learning, SAFE Work Manitoba, the WCB and St.Amant.

St.Amant is a not-for-profit organization that offers a wide range of programs for Manitobans with developmental disabilities and autism.

DETERMINING THE INFLUENCE THAT THE WCB OF MANITOBA'S OPIOID POLICY HAS HAD ON PRESCRIPTION OPIOID USE AMONGST WCB RECIPIENTS

Allen Kraut and Leigh Anne Shafer, University of Manitoba, Colette Raymond, Manitoba Centre for Health Policy
\$54,470 awarded in 2014

This study will compare opioid usage and physician prescribing practices between injured workers receiving WCB benefits and other Manitobans before and after a WCB policy change. Opioid medications are sometimes used to treat non-cancer pain among injured workers. In 2011, the WCB introduced Policy 44.120.20, Opioid Medication, to provide parameters for the authorization and payment of opioids for cases involving non-cancer pain. This study is building on similar work done by these researchers before the introduction of the WCB's policy in 2011. The earlier study showed that injured workers were more likely to be prescribed higher dosages of opioids compared to other Manitobans and were at risk of overuse. The study's report, *A comparison of usage of opioid medications by Workers Compensation Board claimants and other Manitobans* may be accessed at:

<http://www.wcb.mb.ca/comparison-of-usage-of-opioid-medications-by-workers-compensation-claimants-and-other-manitobans>

The journal article, *Proportion of Opioid Use Due to Compensated Workers Compensation Claims in Manitoba, Canada*, may be accessed at:

<http://onlinelibrary.wiley.com/doi/10.1002/ajim.22374/pdf>

The opioids that will be included in the study are any oral codeine, meperidine, oxycodone, morphine, hydro-morphone and trans-dermal fentanyl. The data extraction for this study from the WCB's database and the Manitoba Centre for Health Policy data repository is in progress.

INTERVENING IN THE TRANSPORTATION SECTOR TO REDUCE DRIVER FATIGUE, LOW BACK PAIN AND DISCOMFORT AND TO INCREASE VEHICLE SAFETY

Phillip Bigelow, University of Waterloo; Jim Dickey, Western University; Emile Tompa, Institute for Work and Health
\$127,098 awarded in 2014

With the support of Bison Transportation, a major truck carrier in Manitoba, and the Manitoba Trucking Association, this study will investigate the relationship between the exposure of truck drivers to whole body vibration (WBV) caused by different types of truck seats and the effects on fatigue, low back pain and disability. It will assess the vibration characteristics of various seat types so that trucking companies can make informed decisions when purchasing or modifying new or existing vehicles. The study will develop a knowledge transfer program, including several workshops, to share results with trucking companies. A tractor cab with the best seating ergonomics will be set up for test drives by workshop participants.

The project's funding agreement has been completed and plans are underway for the first meeting with the project advisory committee.

The researchers anticipate that the findings from the study will provide additional evidence to support workplace accommodations during the return to work process.

INDUSTRY-BASED SAFETY ASSOCIATIONS, PHASE TWO

SAFE Work Manitoba

\$300,000 awarded in 2014

Manitoba's Five-Year Plan for Workplace Injury and Illness Prevention (the *Plan*) recognizes the important role of industry-based safety associations in strengthening workplace safety and health practices and commits to continued support for existing associations and the establishment of additional associations. Many employers and industry sectors have also expressed strong interest in expanding the safety association network. To meet the commitments of the Plan and respond to stakeholder interests, SAFE Work Manitoba has launched a two-phase project for the development of industry-based safety associations.

Phase One involves identifying prospective organizations to host safety associations, ensuring the requirements under Policy 52.20, Funding Industry-Based Safety Programs, have been met and that industry support exists from the prospective levied employer group that the safety association is meant to serve.

Phase Two involves building capacity towards implementation which includes establishing a governance framework and initiating planning for development of the safety association along with delivery of services and support. RWIP special funding has been instrumental in achieving this objective by supporting the development of a governance package template. This template provides content, structure and processes that can be customized to fit the organization and industry and may be used in whole or in part to expand or improve on existing practices.

In addition, the RWIP special funding supports the recruitment for leadership and establishes strategic and business planning for new industry-based safety programs. This gives the safety associations a significant head start and solid foundation from which to develop and implement occupational safety and health supports and services for their members.

ENGAGING HEALTHCARE PROVIDERS IN THE RETURN TO WORK PROCESS

Agnieszka Kosny, Dorcas Beaton, Andrea Furlan and Ellen MacEachen, Institute for Work and Health; Juliette Cooper, University of Manitoba; Mieke Koehoorn, University of British Columbia; Barbara Neis, Memorial University
\$187,584 awarded in 2013

This study is investigating the role of healthcare providers (HCPs) in the workers compensation and return to work (RTW) process. The healthcare providers for this study are general medical practitioners and family doctors who engage in the RTW process in multiple ways. Workers compensation case managers (CMs) will also be interviewed to determine their role in the RTW process of injured workers. This is a cross-jurisdictional study of four Canadian provinces – Manitoba, British Columbia, Ontario, Newfoundland and Labrador – as well as the United Kingdom, Australia and New Zealand.

The researchers have completed the policy and document scan and undertaken a quantitative and qualitative analysis of materials obtained from the scan. An in-depth analysis of medical certification forms from each jurisdiction has been completed and the preliminary findings have been written up. The research team and project advisory committee also identified and selected novel programs and resources to inform the development of case studies. Fourteen in-depth interviews with senior policy makers, service providers and administrators have been undertaken to gain an understanding of the involvement of HCPs with the WCB and in the RTW process. The focus of the interviews was on resource development, its use and how it has facilitated HCP involvement with the WCB and/or RTW.

Interview questions for the HCP and CM interviews were developed and circulated to the study team and advisory committee. The feedback received was incorporated into the interview guides. The questionnaire for HCP interviews has been piloted and tested ahead of the planned recruitment of participants for the study. Recruitment of participants for the study is underway.

The study's outcomes will include an inventory of tools and programs to facilitate HCP engagement in the RTW process. The findings will clarify and provide evidence of the challenges encountered by HCPs with planning RTW, the range of approaches available to HCPs for RTW and the rate at which injured workers return to work. This is a timely study that will include the injured worker's perception about their medical prognosis and functional capabilities in return to work planning.

EVALUATING THE ACCESSIBILITY OF THE MANITOBA CONSTRUCTION INDUSTRY TO PHYSICALLY DISABLED CONSTRUCTION WORKERS AND ITS RELATION TO SAFETY PERFORMANCE

Mohammed Issa, University of Manitoba

\$71,035 awarded in 2013

This study is developing a model to measure and evaluate disability management (DM) and forecast the future safety performance of construction firms. The study is also reviewing the culture and disability management practices of employers in the construction sector, their compliance with their re-employment obligations and gaps in legislation. The focus of the study is general contractors specializing in building work.

A web-based survey was administered to a sample of Manitoban construction organizations through the Construction Safety Association of Manitoba to enquire about workers disabled as a result of a workplace injury in the industry, practices in place to accommodate them and barriers to their employment. The analysis of the responses of 88 organizations showed that the majority of responding organizations employed few disabled workers. Disabilities due to musculoskeletal injuries were the most common, followed by physical mobility and hearing impairments. The respondents indicated that among the main reasons for a DM program is the value of retaining experienced employees and maintaining employee morale.

A literature review on DM and maturity modelling for the construction sector has been completed. The literature review identified the indicators to be considered as part of the model and the best practices that will form performance benchmarks for the study. An assessment questionnaire has been developed as part of the model that will be used to rate individual DM practices against identified best practices. The next steps for the study are the identification and development of safety metrics that will be used as lagging indicators of performance and the validation of the maturity model.

There is limited information on workers with disabilities in the construction sector. The study will provide information and data to assist construction firms with their re-employment and accommodation obligations, paving the way for improvements in disability management in this sector.

INTERACTIVE SAFETY E-BOOK: TAKING IT DIRECT TO THE LEARNER

Robin Millar, Centre for Education and Work

\$200,000 awarded in 2013

One of the barriers in delivering safety and health training to shop floor workers is the availability of information in easy to use, interactive and plain language formats. A further constraint is that many small and medium sized businesses do not have the resources to support trainers on staff to provide ongoing safety and health training. Centre for Education and Work (CEW) is undertaking a project to develop an e-book that will enable businesses to deliver safety and health training to their workers in small groups throughout a business. CEW has completed the development of the e-book app and has piloted the app in several businesses. The e-book has been customized to the iPad Textbook which has capability features to embed video, interactive charts, graphs and text to allow for a natural flow of information.

The feedback obtained from the pilots is being utilized to refine the app and to ensure functionality of use. CEW is currently working to meet the project goal to train 60 workers in several worksites to use the e-book.

This innovative project promotes the application of new technology in occupational safety and health through e-learning which recent research has shown is an effective way to impart knowledge to young workers and workers with English as an additional language.

MANITOBA ABORIGINAL HEALTH AND SAFETY INITIATIVE

Marileen Bartlett, Centre for Aboriginal Human Resource Development, and Doug Lauvstad, Northern Manitoba Sector Council

\$200,000 awarded in 2013

The Manitoba Aboriginal Health & Safety Initiative (MAHSI) project is a response to the need for more culturally appropriate safety and health training for Aboriginal workers in Manitoba. The Centre for Aboriginal Human Resource Development Inc. (CAHRD) is the lead organization in partnership with the Northern Manitoba Sector Council (NMSC). The partner for the design and development of the project is the Faculty of Business and Economics, University of Winnipeg. The project has developed online learning resources that have been customized to reflect Aboriginal practices, history and traditions. MAHSI's Online Learning Centre (OLC) is dedicated to Aboriginal workplace health. The OLC was launched on December 2, 2015. The OLC is an independent learning centre to assist Aboriginal workers who are preparing to enter the workforce or those who are currently in the workforce. The OLC is available to other user groups, including training institutions and employment preparation programs and could also be used by managers, supervisors and safety and health officers for safety and health training in their workplaces.

Aboriginal workers are identified as a vulnerable group of workers who are at increased risk of workplace injury and illness. Work on this project started in January 2014 and MAHSI's Online Learning Centre will build capacity for effective safety and health training for Manitoba's rapidly growing Aboriginal workforce. The OLC may be accessed at:

www.mahsi.ca

SAFE FARM PLANS FOR GLENLEA RESEARCH STATION AND FARM

Michele Rogalsky and Lorrie Koroscil, School of Agriculture, University of Manitoba

\$200,000 awarded in 2013

Preventing injuries in agricultural work settings is challenging because of the unique nature of the agricultural work environment. Often farms are homes as well as worksites, so children and elderly folks are also victims of agricultural injuries. Finding ways to increase safety awareness and safety practices on farms is important to improve the safety culture in agriculture. The Faculty of Agricultural and Food Sciences and the Department of Animal Science are developing safe work procedures for Glenlea Research Station and the TK Cheung Centre for Animal Research, Poultry Research Barns. Glenlea Research Station and Farm is operated by the Faculty of Agricultural and Food Sciences and the Department of Animal Science with financial support from Manitoba Agriculture, Food and Rural Initiatives and the University of Manitoba. The 500 hectare facility consists of a wide variety of agricultural activities undertaken for the purposes of research, education and outreach to the local farming community.

The project team has completed an inventory of existing agricultural safety resource materials for the SAFE Farm plans and completed risk assessments on all the farm units in Glenlea Research Station. The team is currently working on the development of safe work procedures for each farm unit and a policy that will guide the SAFE Farm plans.

The tools and resources developed from this work will be shared with the agriculture community in Manitoba.

SYNTHESIZING OCCUPATIONAL SAFETY AND HEALTH KNOWLEDGE FOR LOCAL STAKEHOLDERS

Stephen Bornstein and Robert Kean, Memorial University; Emma Irvin, Dwayne Van Eerd and Ron Saunders, Institute for Work and Health; Steven Passmore and Leslie Johnson, University of Manitoba

\$196,000 awarded in 2013

This project is a collaboration involving researchers from Memorial University's SafetyNet Centre for Occupational Health and Safety Research (SafetyNet), the Institute for Work and Health (IWH) and occupational safety and health (OSH) stakeholders in Manitoba. The project involves developing and testing an innovative methodology for synthesizing current scientific knowledge on OSH issues and tailoring it for use in specific local contexts. The resulting methodology will be a combination of features used by the Contextualized Health Research Synthesis Program (CHRSP) with the systematic review techniques and synthesis reports pioneered by the Systematic Review Program at IWH.

The project is well underway and a stakeholder advisory council has been set up comprising business, labour, government and the WCB. The project team tested the blended methodology on two topics and the findings were used to further refine the contextualization matrix and variables that may influence the effectiveness of OSH interventions in any given context. The team has begun the third and final synthesis on a research question identified by stakeholders in Manitoba's OSH communities: "What interventions are effective to manage depression in the workplace?" The team will specifically aim to answer which intervention approaches to manage depression in the workplace have been successful and have yielded value for workers and employers. The synthesized research framework and methodology will be published in a handbook for end-users.

A COMPARATIVE ANALYSIS OF SEVERE WORK-RELATED INJURIES AND LONG DURATION CLAIMS IN THREE CANADIAN PROVINCES

Mieke Koehoorn and Christopher McLeod, School of Population and Public Health, University of British Columbia; Sheilah Hogg-Johnson, Cameron A. Mustard and Benjamin Amick III, Institute for Work and Health; and Allen Kraut, University of Manitoba

\$199,246 awarded in 2012

Long term claims have a significant and profound effect on all aspects of an injured worker's life. Reducing the burden of these injuries continues to be challenging, partly because there is incomplete understanding of treatment modalities that can be used to reduce the incidence and duration of long term claims. There is also a heavy cost burden to employers, the workers compensation system and society as a whole. This project aims to: create comparable cohorts of injured workers in Manitoba, British Columbia and Ontario; conduct analyses investigating the trends and variations in long duration and serious injury claim rates across the three provinces; identify the key intra- and inter-jurisdictional drivers of the claims rate; and publish an atlas of findings that will serve as a policy and reference tool for compensation systems and other stakeholders.

The research team finalized cohorts of injured workers and completed analysis of the data sets for each of the three provinces. The team created a harmonized analysis file to show disability duration curves and wage loss days paid by province, year, gender, age, occupation and/or type of injury.

Integration of data from a fourth province (Saskatchewan) is currently being negotiated. Preliminary results from the analysis were presented to WorkSafeBC committee members in May 2015 and to the Institute for Work and Health and the WCB in November 2015.

The research team is proceeding with the creation of a compendium of findings that will serve as a policy and reference tool for compensation systems and stakeholders. When completed, this work will pave the way for the analysis of the trends, variations and drivers of long term claims as well as identify best practices across the three provinces.

SAFETY KNOWLEDGE SHARING BEFORE RETIREMENT: AN EXAMINATION OF RETIRING EMPLOYEES' ATTITUDES, INTENTIONS AND BEHAVIOURS

Nick Turner, Krista Uggerslev and Kasey Martin, Asper School of Business, University of Manitoba

\$75,454 awarded in 2012

This project is exploring how experienced workers share safety-related knowledge with other organizational members. The project is also investigating the receptivity of younger and novice workers towards receiving safety knowledge from experienced workers and how younger workers believe they can learn and share safety knowledge. The project consists of qualitative interviews and longitudinal surveys of trainees, instructors and work placement chefs in two locations: the Northern Alberta Institute of Technology, Edmonton and Red River College, Winnipeg. Data collection in Edmonton has been completed and the project team anticipates that the data collection in Winnipeg will be completed by the end of 2015.

The study's findings will improve understanding of safety knowledge behaviours among experienced workers and younger workers, illustrate new approaches towards creating a stronger organizational safety climate and potentially reduce the number of workplace injuries. The information on inter-generational safety knowledge sharing in the workplace will provide new evidence to support the WCB's social messaging and communications strategy for creating safer workplaces and work practices.

THE ECONOMIC COSTS OF WORKPLACE INJURIES TO MANITOBA WORKERS, EMPLOYERS AND THE ECONOMY

Greg Mason, Prairie Research Associates Inc.

\$179,500 awarded in 2012

The loss in workers' earnings, reduced productivity and the cost of medical treatment and rehabilitation represent a large proportion of the costs of a workplace injury. This study is exploring the full cost of workplace injuries and occupational illnesses to injured workers and their families. The sample for the study will comprise injured workers and their caregivers. The researchers are applying a multi-modal study design to estimate and value economic costs, changes in quality of life and the range of indirect and non-economic costs experienced by injured workers and their families. Prairie Research Associates has developed a series of case studies on types of costs incurred by those injured at work. These case studies were used to develop a survey for current and past WCB injured workers. The survey was launched in August 2014 and was completed in 2015. 2,310 injured workers were surveyed. A draft report of the study was submitted to the WCB and is currently under review.

Studies which estimate the full range of economic and social costs of workplace injuries and fatalities vary greatly in scope and intent, with few Canadian studies and none in Manitoba. This study will establish tangible values for unaccounted costs resulting from a workplace injury and provide information that will be used by the WCB in communicating the value of injury prevention and return to work programs in the workplace.

COMPARISON OF USAGE OF OPIOID MEDICATIONS BY INJURED WORKERS RECEIVING WORKERS COMPENSATION BENEFITS AND OTHER MANITOBA

Allen Kraut, Faculty of Medicine, University of Manitoba

\$83,854 awarded in 2011

The findings of this study were reported in the RWIP 2014 Annual Report. The financial report for this study is pending. The research team applied for and were approved funding for a followup study under the 2014 RWIP call for applications.

SERIOUS GAMES TO DECREASE INJURY IN THE FIRE SERVICE BY TRAINING SAFER MOVEMENT PATTERNS AND DECISION-MAKING SKILLS: DEVELOPMENT AND PILOTING

Bernadette Murphy, University of Ontario Institute of Technology; and Stephen Passmore, Spine Biomechanics and Human Neurophysiology, School of Medical Rehabilitation, Faculty of Medicine, University of Manitoba
\$199,993 awarded in 2011

Firefighters experience a high incidence of musculoskeletal injuries due to lifting, twisting and bending, often in awkward positions while under mental and physical strain. Firefighters also sustain injuries due to contact or exposure to fire with many being preventable by better decision-making. It is unclear whether the use of fire protective clothing in hot/ humid environments increases physiological strain, alters cognitive function and impairs decision-making at an incident scene. This study has developed two serious game modules to address these issues.

Serious game technology is a video game that uses interactive software for teaching and training. The project is incorporating motor learning principles in the development of the video game. A team of 20 firefighters with the Toronto Fire Services was recruited to undergo moderate intensity treadmill exercise inside a climate chamber at the University of Ontario, Institute of Technology. Prototypes of the training videos for both games have been completed and work is ongoing to refine lifting movements and decision-making in more complex firefighting scenarios.

The prototype video games were presented at a workshop in June, which included members from the Winnipeg Fire Services, United Fire Fighters of Winnipeg, Winnipeg Fire and Paramedic service and the WCB. Focus groups were also held with members of the Winnipeg Fire and Paramedic Service to obtain feedback on the video games. The researchers have presented the preliminary research findings at several conferences including the Ontario Association of Fire Chiefs (OAFC) Conference (Toronto), Ontario Professional Fire Fighters Association (OPFFA) Conference (Toronto), American College of Sports Medicine (ACSM) Annual Conference (California) and the Canadian Society for Exercise Physiology (CSEP) Annual Conference (St. John's, Newfoundland).

Once completed, firefighters will be able to play the video games in the fire hall or at home to hone their decision-making skills in preparation for cognitive tasks at an actual fire scene.

The knowledge resulting from this study will be converted into practical training applications that will be utilized to minimize health risks and risk of injury among firefighters in Manitoba.

TECHNOLOGIES AND SAFETY: MAKING FARMS SAFER

Robin R. Millar, Centre for Education and Work

\$208,900 awarded in 2011

This project was reported as a completed project in the RWIP 2014 Annual Report. The SAFE Farms App was launched in January 2014 and can be accessed free of charge at: <http://safefarms.ca/>. The project's report can be accessed at:

<http://www.wcb.mb.ca/making-farms-safer>

The Centre for Education and Work applied for and was approved additional funding of \$8,900.00 in January 2015. The additional funding is for Knowledge Transfer and Exchange activities including the promotion of the SAFE Farms App in several farming communities in rural Manitoba. The additional funding request results in total project funding of \$208,900. Knowledge Transfer and Exchange activities are in progress.

DEVELOPMENT OF OCCUPATIONAL HEALTH AND SAFETY CONTENT FOR DISTANCE DELIVERY

Darlene Bouvier, School of Continuing and Distance Education, Red River College

\$172,439 awarded in 2010

In partnership with Red River College (RRC), the WCB is supporting the development of a distance learning option to complement the current Occupational Health and Safety (OHS) Certificate program offered by the College. The amount of funding initially approved has been increased to accommodate a review, update and enhancement to the existing curriculum prior to developing and offering the program through distance delivery. RRC will be launching two online courses in January 2016.

An advanced level OHS certificate training program comparable to other training programs across Canada will meet the demand for certified OHS practitioners in Manitoba. Additionally, the distance learning option will permit students in rural locations to complete their OHS certification and increase the much needed capacity for OHS expertise in rural Manitoba.

RETURN TO WORK FOLLOWING TOTAL KNEE REPLACEMENT IN WORKING INDIVIDUALS

Martin Petrak, Orthopaedic Innovation Centre Inc.

\$197,250 awarded in 2010

With improvements in the design of total knee replacement (TKR), knee surgery has expanded to include younger, more active patients for whom return to work is an important surgical outcome. This study is investigating the effect of TKR on an individual's ability to return to work and factors that may affect return to work. The recruitment of subjects for the study's sample is complete and the researchers are confident the sample size is sufficient to derive meaningful conclusions from the analysis of data collected for this study.

The findings will enhance decision-making about modified work, resumption of employment and employment expectations in patients with arthritis of the knee and determine the difference in recovery rates between patients who are working and those who are not.

YOUNG WORKER RESPONSES TO WORKPLACE HAZARDS, RESPONSIBILITY FOR SAFETY AND WORKPLACE INJURIES ACROSS TIME

Sean Tucker, University of Regina; and Nick Turner, Asper School of Business, University of Manitoba

\$92,390 awarded in 2010

A study in 2007, funded under the WCB's Community Initiatives and Research Program, surveyed young workers' responses to workplace injuries as well as their exposure to dangerous work and hazards in the workplace. This study is a sequel to the earlier study undertaken in 2007 and is analyzing changes over time in young workers' responses to hazardous behavior. The current study includes the influence of parents on safety behaviours of young workers. The study is also researching the differences in safety behaviours and attitudes between adults and young workers who work in similar frontline jobs. Work is ongoing to analyze data collected from the survey of young workers and parents.

Popular opinion suggests that young people take more risks at work and feel less responsible for workplace safety. The findings from this second study will provide information that will assist in the design of injury prevention and safety awareness programs for young workers, parents and older working adults who work in similar frontline jobs.

Research and Workplace Innovation Program

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