RESEARCH AND WORKPLACE INNOVATION PROGRAM (RWIP)

2022 Report on Projects

SAFE WORK MANITOBA
A division of the WCB

WCB
Workers Compensation Board of Manitoba

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OVERVIEW OF REPORT

This Report provides an update on the activities of the Research and Workplace Innovation Program (RWIP) in 2022. The Report is organized into three sections:

- New Grants Awarded
- Completed Projects
- RWIP Approved Projects 2009 to 2022 (Appendix A)

The RWIP offers grants on an annual and competitive basis to support high quality projects on the prevention of workplace injury and illness, improving workplace health and safety, and the safe and productive return-to-work of injured or ill workers. Funding is awarded under two core funding streams:

- Training and Education
- Workplace Innovation

Established in 2009, the RWIP makes available $600 thousand dollars in funding each year. Ninety projects were funded over the past fourteen years. Appendix A shows Approved RWIP Projects from 2009 to 2022.

NEW GRANTS AWARDED IN 2022

TRAINING AND EDUCATION

THE HIP HINGE PROJECT

Carrie Solmundson, Shelly Sargent,
The Wellness Institute at Seven Oaks General Hospital

$57,486

The Hip Hinge project is teaching health care workers a specific movement, the "hip hinge", a movement known to be a protective measure against back injuries. Back injuries account for the largest volume of time loss injuries and are the third most frequent injury reported in Manitoba. (2020 WCB data)

The hip hinge movement is taught extensively in rehabilitation and reconditioning programs, yet is rarely known to or practiced by individuals prior to a back injury. The hip hinge project is a two part education and practical program.
First, health care workers are being invited to attend the hip hinge education session developed by physiotherapists who specialize in return to work programs. Following the hip hinge education session, participants are invited to participate in a 4 week practical program. The program has been designed to ensure staff have the adequate fitness- (core strength and flexibility through the lower limbs) to prevent stress and strain on the lumbar spine.

Hip hinging will be used as a strategy, along with squatting and weight shifting when teaching safe patient handling.

WORKPLACE INNOVATION

NO WORKPLACE INNOVATION PROJECTS WERE AWARDED FUNDING IN 2022

PROJECTS COMPLETED IN 2022

The following projects were completed during 2022.

PROVIDING TOOLS TO BENCHMARK DISABILITY MANAGEMENT AND RETURN TO WORK PERFORMANCE IN CONSTRUCTION WORKPLACES IN MANITOBA

Dr. Nancy Hansen,
University of Manitoba

$131,522 awarded in 2018

This project used the gradual revolution as a catalyst to build on a previous RWIP project from 2013 - *Evaluating the Accessibility of the Manitoba Construction Industry to Physically Disabled Construction Workers and its Relation to Safety Performance.* The previous project aimed to provide the construction industry with a theoretical version of tools (i.e., the Construction Disability Management Maturity Model and Metrics) that would enable construction workplaces to benchmark their disability management (DM) and return to work (RTW) performance. The goal of this project was to develop refined, validated web-based free versions of these tools and use them to evaluate the DM and RTW performance of the construction industry in Manitoba at large.

This research was the first in Canada to develop and deploy an online DM/RTW benchmarking tool which construction companies could use to evaluate the maturity and performance of their programs, receiving assessment results immediately with tailored recommendations for continuous improvements. The research contributed to the existing body of knowledge by providing evidence-based guidance for stakeholders in the construction industry and provided third-party assessments of DM measures to make the industry more inclusive. The project enabled the practical application of existing knowledge within DM in new ways that fostered the rehabilitation and RTW of injured construction workers. It provided creative technological solutions that construction workplaces used to evaluate and benchmark their DM and RTW performance. The online benchmarking tools are recommended to be promoted and continuously used throughout the industry as a proven way to track performance and encourage companies to improve their programs. This translates to better workplace outcomes such as: higher productivity, retention of valuable skilled labour, lower injuries, lower costs, motivated workforce, and a better overall workplace culture.

The validated indicators, practices and metrics were used to develop web-based DM benchmarking tools for the building and heavy sectors. The tool was then piloted by the two working groups, with the results analyzed and the feedback incorporated into the developed tools. The tool was then successfully integrated into the partners Construction Safety Association of Manitoba (CSAM) and Manitoba Heavy Construction Association.

MENTAL HEALTH OUTCOMES FOLLOWING WORKPLACE INJURY

Dr. Sarvesh Logsetty,
University of Manitoba

$173,820 awarded in 2015

This study aimed to examine whether mental illness following a workplace injury is an outcome of the workplace injury or a result of other causes. The study compared 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 researchers examined whether the observed physical and mental illnesses differed between the three cohort groups.

The researchers linked data obtained from the Workers Compensation Board of Manitoba (WCB) with data from the Data Repository at the Manitoba Centre for Health Policy (MCHP). The researchers used scrambled Provincial Health Identification Numbers (PHINs) of physician billing, hospital admission and discharge data to examine the prevalence of depression, anxiety, substance abuse and suicidal behaviour among the three groups of subjects. The relative rates (RR) of disorders between the cohorts was calculated and adjusted for factors found to differ between the cohorts. These factors included but were not restricted to income, urban/rural residence, age and other previous injuries. Following this analysis, the RR of pre-injury mental illness was calculated and compared between groups and between the pre and post-injury time periods. This allowed the researchers to determine if the impact on mental health was truly related to the injury or instead representative of pre-existing mental disorders.

The study included a total of 7,556 patients with workplace related injury (WPI) matched to 28,901 non-WPI patients. Relative rates of mental disorders including anxiety, depression and substance use disorder were measured in the WPI and non-WPI cohorts from two years pre- to two years post-index. Anxiety, depression, substance use and any mental disorder which was a measure of the general prevalence of any of the other conditions, increased in the WPI cohort and decreased in the non-WPI cohort. These results demonstrated that mental disorder rates post-WPI significantly increased compared to mental disorder rates post-non-WPI. When considering only post-WPI mental disorder rates, the worker cohort had lower rates and overall better outcomes and the workplace may even have a protective effect. However, the cohort also had far lower pre-WPI mental disorder rates, therefore the study's findings supported the hypothesis that WPI has a higher impact on mental disorder rates, when the increase from pre- to post-WPI is considered.

COGNITIVE BEHAVIOUR THERAPY WITH MINDFULNESS COURSE FOR BUILDING WORKPLACE RESILIENCE: A PILOT RANDOMIZED CONTROLLED TRIAL

Dr. Jitender Sareen,
Dr. Tanya Sala,
Dr. Jacquelyne Wong,
Dr. Debbie Whitney,
Dr. Pam Holens,
Dr. Jolene Kinley,
Dr. Natalie Mota,
Dr. Laurence Katz,
Dr. Sarvesh Logsetty,
University of Manitoba

Dr. Nicholas Carleton,
Dr. Gordon J.G. Asmundon,
Dr. Heather Hadjistavropoulos,
University of Regina

$196,405 awarded in 2016

Public safety personnel (PSP) are a particularly vulnerable group who face high levels of daily stress. A need was identified to both build resiliency against the many psychological harms that these groups inherently face, and to reduce and prevent development of mental illness. Group-based cognitive behaviour therapy (CBT), an evidence-based treatment allowing service providers to interact with high volumes of individuals was used. While CBT had shown efficacy in the treatment of a range of mental and substance use disorders, it had also been shown to be useful in building resiliency.

The project developed a mindfulness-based CBT program called CBTm. CBTm was delivered in a facilitator-led, class-based format, held in-person with the aim of promoting resiliency through teaching CBT concepts and skills. The aim of the study was to examine the feasibility of CBTm in promoting resiliency in a cohort of PSP who did not meet criteria for a current diagnosis of major depression, anxiety disorder, or PTSD.

The project was split into two phases. In Phase I, the CBTm classes were adapted for prevention of PTSD and related conditions among PSPs. An online version of the course with minimal therapist intervention was also explored. Phase II of the project consisted of a two-arm randomized controlled trial examining outcomes for those who were to receive the CBTm course compared to a waitlist control group.

The project developed a five-session program:
Session 1 - Mindfulness, Basics of Cognitive Therapy, Thought Records
Session 2 - Mindfulness, Basics of Behaviour Therapy, Exposure Therapy
Session 3 - Mindfulness, Healthy Activity, Sleep Hygiene
Session 4 - Mindfulness, Goal Setting, Assertiveness
Session 5 - Mindfulness, Dealing with Stress and Stressful Experiences, Wellness Planning

Findings of this study revealed improvements in subthreshold clinical symptoms across the five sessions (i.e., significant reductions in scores on anxiety, depression and PTSD) among PSP who were assigned to the CBTm training, compared with a waitlist control group, and these differences were maintained through a three-month follow-up. The majority of participants in the intervention enjoyed the content and were satisfied with the classes. Although resiliency scores did increase over follow-up among those who took the CBTm classes, the finding was not statistically different from those on the waitlist.

EFFECTIVE USE OF THE HIERARCHY OF CONTROLS FOR MACHINE SAFEGUARDING

Mike Gordon,
Workplace Engineering Solutions

$74,078 awarded in 2019

The goal of this project was to reduce dependency on less effective controls for machinery hazards and reduce machine-related injuries. Machinery hazards result in high severity injuries such as amputations, entanglement and fatalities. The project hypothesized that many workplaces have a high dependency on controls that fall low on the Hierarchy of Controls due to a lack of awareness of the differences between the types of safeguarding controls, a lack of a proper task-based risk assessment and a difficulty in design and implementation of elimination, substitution and engineered control solutions.

The project was divided into two main objectives:
a) create a baseline of information from audits to determine the level of reliance on low-level controls
b) create tools/training to work to lower that reliance.

The first objective of the project was to create an audit tool to collect the information. The tool was designed and refined to be used with floor-level workers, safety reps and supervisors using common language for those who interact with the equipment. Approximately 500 audits were collected from a variety of organizations. A strong technical understanding of machine safeguarding was not required. Once the audits were summarized, one of the main discoveries was that many organizations believed they had high level controls in place, but actually lacked the understanding of the level of protection required.

With the audit information collected and analyzed, the second objective was to create training and tools that worked to educate and inform each organization. The collection of the baseline data helped identify the areas needed to be highlighted. The root causes of a lack of controls were determined to be a lack of understanding of hazards and controls, and a lack of understanding of how the Hierarchy of Controls worked. The tools that were developed worked on addressing these two root causes.

The project found that the auditing tool that was designed for floor-level supervision was enlightening as workers and their supervisors were able to learn a great deal by the interaction. Companies had previously believed they had strong controls in place, but in the auditing it became clear there were a great deal of lower-level controls being used. The myths and misunderstandings of the Hierarchy of Controls and the risk reduction process were uncovered, and the project enabled floor-level workers to identify proper controls for their machinery.

ELECTRICAL SAFETY FOR THE ELECTRICAL WORKER

Robert Semchyshyn,
Electrical Association of Manitoba (EAM)

$157,757 awarded in 2017

There are approximately 8,300 licensed electricians registered with the Province of Manitoba and the Electrical Association of Manitoba (EAM) represents all sectors of the electrical industry, including contractors, manufacturers, distributors, manufacturer agents, educational institutions, and low voltage industries.

The hazards electrical workers face have the potential to be serious in nature, if not fatal. Having the training and awareness to know how to avoid these hazards, and thus reduce incidents, is essential to changing the safety culture within the electrical community. With this project, the EAM established a suite of training courses to help reduce the risk of injury due to electricity.

Based on the discussions with industry leaders, training gaps and education needs were identified for workers and employers in low and high risk electrical workplaces. The training was delivered through a combination of in-class, instructor led courses and online training formats, such as webinars and satellite skyped sessions.

The EAM created five courses to fill the needs of the Manitoba Electrical Industry. The contents of each course were developed in compliance with current Provincial and Federal legislation, the City of Winnipeg Electrical by-laws, Canadian workplace safety standards, best industry practices and SAFE Work Manitoba guidelines.

The five courses were:
1. OHS Electrical Legislation
2. PPE for the Electrical Worker
3. The Electrical Supervisor
4. Grounding and Bonding
5. De/Re-energizing after renovations

The last two courses were unfortunately cancelled due to COVID-19 restrictions. The evaluated workshops received overall positive feedback with only minor adjustments needed for further presentations.

The Electrical Association of Manitoba has committed to updating the workshops when necessary due to changes in legislation, codes and standards. The EAM will also offer the material to any industries, organizations and facilities interested in providing the training through a reputable training provider. The workshops will be scheduled for regular review on a 24-month schedule.

MINDFULNESS-BASED INTERVENTION AS A KEY COMPONENT OF SUCCESSFUL WORKPLACE FUNCTIONING AND PERSONAL WELL-BEING FOR FREQUENTLY ABSENT EMPLOYEES

Dr. Michael McIntyre,
Dr. Bram Ramjiawan,
St. Boniface Hospital

Dr. Jennifer Kornelsen,
University of Manitoba

Dr. Michael Halldorson,
University of Winnipeg

$169,626 awarded in 2017

Recurrent accidental injury and frequent illness costs employers, employees and taxpayers. This project was designed to examine the efficacy of an intervention to interrupt the existing pattern of recurrent work-related accidents, injuries, and illnesses and to promote psychological and physical well-being, to allow a more meaningful and successful return to work.

The project team hypothesized that equipping workers with the skills needed to reduce chronic stress would enable increased attentiveness, reduce burnout, increase work satisfaction and personal well-being, while reducing recurrent accidental injury and frequent illness. The treatment condition the study utilized was mindfulness-based stress reduction (MBSR), with a goal to establish MBSR as an extremely useful component to a program intended to reverse patterns of frequent absenteeism.

The results indicated that the MBSR intervention was beneficial to the study participants in multiple domains. Mindfulness increased, positive affect increased, while negative affect decreased. Self-compassion increased, perceived stress, anxiety and personal burnout decreased, and fears of compassion from others and for the self-decreased; benefits that may translate into reduced workplace injury and return to work behaviours in frequently absent employees.

The open-ended feedback from participants was positive mirroring the results obtained via the questionnaires, however due to COVID-19 restrictions, the assessment of the impact of the MBSR intervention on absenteeism was inadequate to provide a conclusion.

RESPIRABLE CRYSTALLINE SILICA IN THE MANITOBA CONSTRUCTION SECTOR: ADVANCING KNOWLEDGE TO REDUCE EXPOSURE

Dr. Hugh Davis,
University of
British Columbia

$172,233 awarded in 2017

This project was designed to reduce the risk of Respirable Crystalline Silica (RCS)-related disease in Manitoba by increasing the understanding of RCS exposure through monitoring on Manitoba constructions worksites; by improving the on-line tool through improvements to its design; and through knowledge transfer activities to raise awareness and inform targeted groups about RCS hazard and control.

Silica is one of the most common minerals on earth, and crystalline silica is present in common construction materials such as concrete, cement, brick, tiles, drywall, rock, sand and asphalt. RCS exposure is linked to various diseases and cancers. The very low occupational exposure limit (OEL) for RCS reflects its high toxicity.

In Manitoba, over 47,000 people are employed in the construction sector. Crystalline silica is present in many materials and the mechanical tasks of the job which release fine particles of RCS dust into the air. In order for employers to keep their workers' exposures below the OEL, they need to be able to quantify exposure, however, construction worksites are highly dynamic, the physical environment is constantly changing and different work and tasks occur in different time and space patterns with contractors frequently moving between worksites. This can make it difficult for employers to measure and understand the exposure levels that might be present in their workplaces.

To assist construction employers with exposure estimation and risk assessment, the project had previously developed a database of construction-related RCS exposure data and models for estimating RCS exposures in construction. This previous work formed the basis of the web-based tool using objective, quantitative exposure data in the preparation of "exposure control plans".

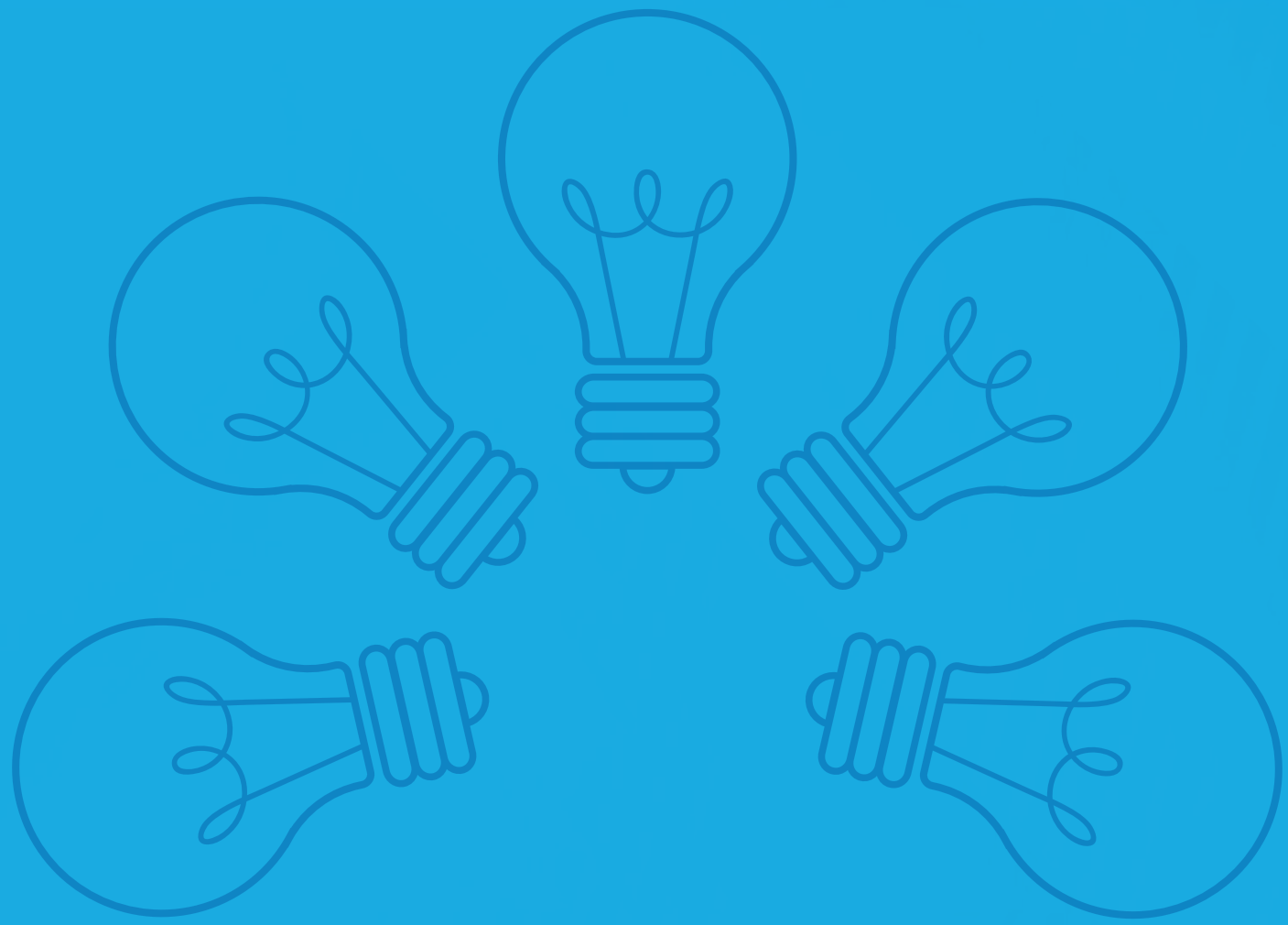
The project undertook a comprehensive assessment of RCS exposure in Manitoba construction worksites between June 2018 and August 2020. A total of 121 measurements were made at 14 different company sites throughout urban Winnipeg and smaller municipalities. Supplementary data was collected for each measurement to allow for statistical analysis of the determinants of exposure to RCS. The study found that overall RCS was higher than the regulatory occupational exposure limit. The findings and recommendations of the study, including upgrades to the programming of the tool will be shared according to the study's knowledge transfer plan.

APPENDIX A – RWIP APPROVED PROJECTS 2009 TO 2022

FUNDING STREAM	NUMBER OF PROJECTS	ORIGINAL APPROVED FUNDING	COMPLETED	CANCELLED	NEW PROJECTS APPROVED IN 2022	IN PROGRESS	REVISED FUNDING*
Workplace Innovation	25	$2,979,441	22	1	0	2	$2,602,299
Scientific Research	36	$5,362,785	23	2	0	11	$5,022,826
Training and Education	16	$1,734,876	10	0	1	5	$1,717,934
Partnerships	5	$545,605	5	0	0	0	$525,889
Special Funding	3	$568,190	3	0	0	0	$458,563
Request for Proposals	5	$324,875	4	1	0	0	$359,710
Totals:	**90**	**$11,515,771**	**67**	**4**	**1**	**18**	**$10,687,221**

*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.

To view the list of completed projects and final reports, please follow the below link:
https://www.wcb.mb.ca/research-and-workplace-innovation-projects



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