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Economic evaluation software for Manitoba workplaces

FINAL REPORT FOR WORKERS COMPENSATION BOARD OF MANITOBA

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Research Excellence Advancing Employee Health

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Executive Summary

We have developed jurisdiction-specific economic evaluation software with a training video component for workplace parties in Manitoba. The software is called the *Health & Safety Smart Planner: A Cost Benefit Tool for Manitoba Workplaces*.

The software was released on April 2, 2012 at a media campaign in which Sean Scott, Executive Director of the Construction Safety Association of Manitoba and a member of the advisory committee, spoke about the merits of the software. The software is available free of charge to Manitoba workplaces from the SAFE Work Manitoba website: http://safemanitoba.com/new_safe_leadership_tool_online.aspx

The Health & Safety Smart Planner is an easy-to-use cost-benefit analysis software. It was developed because workplaces need their own evidence on the costs and benefits of health & safety interventions. It is intended to help workplace parties with decisions on allocating resources for health & safety. The Smart Planner tracks health & safety incidents and their costs. It assists with evaluating the costs and benefits of a health & safety programs at the organization level. The software is user friendly and does not require expertise in economics. Video tutorials have been developed to assist

users of the software. A total of 11 chapters are available (see Appendix for a list). The video tutorials are available for viewing on the SAFE Manitoba website: http://safemanitoba.com/health_and_safety_smart_planner_video_tutorials.aspx.

The target audiences are small and medium-sized businesses. The software is a practical, workplace solution that can help improve OHS performance because it provides workplace parties with an accessible tool that they can use to evaluate the costs and benefits of OHS interventions. It is intended to improve workplace parties' understanding of economic evaluation methods, enable them to undertake accurate analyses of OHS interventions, and increase their use of economic evaluations in OHS decision-making. This will help workplaces ensure that OHS resources are put to their best use.

The software was developed by the Institute for Work & Health and adapted for Manitoba workplaces in collaboration with a variety of stakeholders from Manitoba including: 1) MFL Occupational Health Centre, 2) Manitoba Government and General Employees' Union, 3) Construction Safety Association of Manitoba, 4) WCB Manitoba, 5) SAFE Work Manitoba, and 6) a number of Manitoba workplace parties.

Project Overview/Introduction Including Objectives

Brief description

We have developed jurisdiction-specific economic evaluation software with a training video component for workplace parties in Manitoba. The software is called the *Health & Safety Smart Planner: A Cost Benefit Tool for Manitoba Workplaces*. It is a practical, workplace solution that can help improve OHS performance because it provides workplace parties with an accessible tool that they can use to evaluate the costs and benefits of OHS interventions. The target audiences for the tool are small and medium-sized businesses.

The economic evaluation software and training videos are designed to help workplaces with OHS resource allocation decisions. The three primary goals of the software is to: 1) improve workplace parties' understanding of economic evaluation methods for OHS interventions; 2) enable workplaces to undertake accurate analyses of the costs and consequences of OHS interventions; and 3) increase the use of economic evaluations in OHS resource decision-making.

Gaps filled by the project

We completed a systematic review of workplace OHS interventions with economic evaluations and an environmental scan of existing software tools and found that there was a dearth of evidence and tools in this area. In fact, most intervention studies in the peer reviewed literature do not undertake an economic evaluation. Furthermore, most software tools only calculate the cost of injuries rather than the costs and consequences of interventions designed to avert them. Some are proprietary and not readily available to small- and medium-sized businesses. No tools identified in the scan included a training video component. The *Health & Safety Smart Planner* is a tool that will help fill the information gap by helping workplaces develop timely, in-house, information on the resource implications of their OHS initiatives.

Project objectives

In this project we have developed user-friendly, jurisdiction-specific economic evaluation software and related training videos for workplace parties in Manitoba. The specific project objectives were as follows:

1) To adapt the software already developed for other jurisdictions by:
    a. Modifying the premium setting component to reflect the Manitoba workers compensation program, and
    b. Adapting vocabulary throughout to reflect that used in Manitoba;
2) To develop new functionalities in the software including:
    a. A multiple incident summary feature based on the incident cost calculator database; and
    b. A short-form version of each of the analysis options that does not require populating the incident cost calculator database;
3) To develop training video modules for key aspects of the software;
4) To evaluate various components of the software through focus groups, feedback from the advisory committee and SAFE Work Manitoba staff, and in-house functionality testing at IWH.

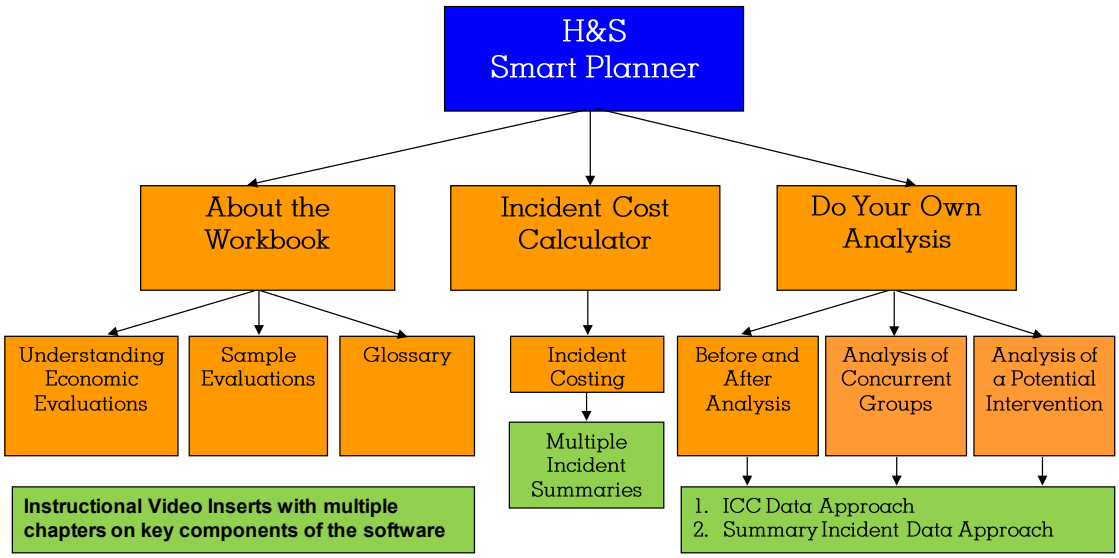
Complete List of Project Activities

Activity	Start Date	End Date	Status
1. Pre-start-up activities - Hire project coordinators - Liaise with partners, recruit new partners, set up first meeting	Jan 2010	Feb 2010	Completed
2. Pre-start-up knowledge gaps & software review - Synthesize gaps found during Ontario & BC pilot testing - Identify and draft a priority list for software customization and training video segments.	Jan 2010	Feb 2010	Completed
3. Project start-up at first advisory committee meeting - Decide on project timeline - Discuss knowledge gaps & training priorities for video - Discuss priorities for software customization - Decide upon focus group recruitment strategy	Feb 25 2010	Feb 25 2010	Completed
4. Team meeting - Revise customization list and training priority list based on advisory committee feedback - Discuss training video segment concepts	Mar 2010	Mar 2010	Completed
5. Design and program software customizations & improvements such as premium setting details related to the Manitoba experience rating program, multiple incident summary feature, and short-form version of each of the analysis options	Apr 2010	March 2011	Completed
6. First focus group participants recruitment - Advisory committee members & project coordinator liaise with contacts - Create recruitment flyer	Apr 2010	Apr 2010	Completed
7. Organize first focus group - Devise instructions for testing the software - Send invitations & software, book meeting room	Apr 2010	May 2010	Completed
8. Focus group	Jun 2010	Jun 2010	Completed
9. Focus group feedback synthesis - Update customization list - Update training video priority list	Jun 2010	Jun 2010	Completed
10. First video development team meeting	Jun 2010	Jun 2010	Completed

- Discuss training concepts & needs			
11. Second advisory committee meeting - Review suggestions for software program revision & training needs based on focus group feedback - Present initial ideas for video training segments - Meld video training segment ideas with workplace needs	Jun 2010	Jun 2010	Completed
12. Video script and storyboard development - Hold video team meetings - Develop script for video segments - Mock up storyboard for video segments - Get feedback from partners on storyboards	Jun 2010	Nov 2010	Completed
13. Recruit second focus group - Recruit pilot participants	Oct 2010	Feb 2011	Completed
14. Hold second focus group - Get feedback on video storyboard mock ups and script	Apr 2011	Apr 2011	Completed
15. Video development - Interview, write video development contract (Request for Proposal) - Hold video developer/team meetings - Refine verbal script and images for video segments	Jan 2011	Aug 2011	Completed
16. Third advisory committee meeting - Review revised software - Review video segments and video shot sequence outline	Feb 2011	Aug 2011	Completed
17. Integrate training video segments - Program into software	Feb 2011	Aug 2011	Completed
18. Recruit participants for pilot testing	Mar 2011	Aug 2011	Completed
19. Finalize the training video segments	May 2011	Aug 2011	Completed
20. Undertake pilot testing - Six to ten workplaces	May 2011	Aug 2011	Completed
21. Revise software program based on piloting results	Jul 2011	Dec 2011	Completed
22. Review penultimate software version	Dec 2011	Mar 2012	Completed
23. Complete programming of all new functionalities in the software such as multiple incident summary feature, and short-form version of each of the analysis options	Jan 2012	Mar 2012	Completed
24. Finalize and execute dissemination strategy	Mar 2012	Mar 2012	Completed
25. Prepare the final report	Apr 2012	Jun 2012	Completed

Results and Evaluation

The final product, software with the training video component, was delivered at the end of March 2012. Following is a schema of the product structure:



There are three components to the software: 1) a help section entitled *About the Workbook* that includes guidance on understanding economic evaluations, sample evaluations and a glossary; 2) an *Incident Cost Calculator* (ICC) that includes a database and ability to calculate summary statistics on multiple incidents; and 3) an evaluation component entitled *Do Your Own Analysis* that allows for three types of study design. The three study design options are: *Before & After Analysis*, *Concurrent Groups Analysis*, and *Potential Intervention Analysis*.. Each of these study design options can be used in conjunction with the ICC or can be used on its own with summary incident data.

The software has been customized for Manitoba workplaces. Specifically, the workers' compensation insurance component has been designed to reflect the

premium setting practices of the Manitoba program. Furthermore, vocabulary has been adapted for the Manitoba jurisdiction. We also developed new functionalities: A multiple incident summary feature based on the incident cost calculator database; and a short-form version of each of the analysis options. Manitoba workplace parties provided input on these adaptations through two two-hour focus groups in the second quarter of the project time frame. There were 25 participants representing a diversity of sectors.

There are nine core video tutorial chapters (Chapters 2-10) along with an introductory and summary chapter (Chapters 1 and 11). Details can be found in Appendix. Each chapter provides in-depth instruction on specific aspects of the software. All software visuals depict the Manitoba version of the software.

Tutorial components for the software were developed with input from Manitoba workplace parties at two additional focus groups in Winnipeg in late April 2011. Draft tutorial storyboards were sent by the Manitoba coordinator to 15 workplace parties to review. Ten participants reviewed the tutorial storyboards and evaluated related scripts. They suggested a variety of topic areas for instruction, visuals, voice-overs possible locations and appropriate durations for each module. They also provided input on further improving usability of the software to meet their needs.

All focus group feedback was synthesized and discussed with the project team and members of the advisory committee. Additionally, we had extensive assistance from Charles Birch, a Safe Work Manitoba Analyst on our Advisory Committee, with developing the experience rating component of the *Do Your Own Analysis* options. Fine tuning of this component was completed with the assistance of Agatha Chandran and others at Safe Work Manitoba. The penultimate version of the software was tested extensively in house at the IWH.

We recommend evaluating the software after it is in the field for about a year to identify how it is being used by workplaces, and what additional supports could be provided to facilitate its use. Details of recommendations are provided in the next section.

Proposed Recommendations

Now that the Health & Safety Smart Planner software is available on the SAFE Work Manitoba website, we recommend monitoring downloads of the software and collecting data on the organizations that are using the software. This can be accomplished by including a request for contact information from each person who downloads the software. Collection of this data can prove to be invaluable in the future for a variety of reasons, such as contacting users to inform them about updates on the software and related services and products developed to support their use of the software.

We recommend developing complementary supports for workplace parties interested in undertaking in-house economic evaluation of OHS interventions. Some suggestions are as follows:

1) Develop a portfolio of OHS case studies based on Manitoba workplaces using the Smart Planner.
2) Develop an economic evaluation training workshop for workplace parties interested in learning more about how to undertake evaluations.

Case studies could be made available on the SAFE Work Manitoba website and promoted through e-alerts and newsletter articles. They could serve as good practice examples for organizations seeking information on what their peers are doing to improve their OHS performance.

Workshops would serve to increase awareness of the need to consider the cost and consequences of H&S initiatives systematically, comprehensively, and on an ongoing basis; advance knowledge about sound economic evaluation methods for OHS initiatives, and increase the comfort level and ability of workplaces to apply economic evaluation methods in their workplaces. They would also serve as a means

for SAFE Work Manitoba to connect with workplaces interested in improving their OHS performance.

In summary, the Health & Safety Smart Planner assists workplaces in developing in-house evidence on the costs and benefits of health & safety interventions. It provides a launch pad for workplaces to advance their data collection and evaluation systems and their evaluation skills to support more informed resources allocation decision making in the area of OHS. The software also provides SAFE Work a connection with workplaces that can be leveraged in future through the development of related tools and support.

Appendix

Manitoba Health & Safety Smart Planner video tutorial chapters

Chapter 1: Introduction

Chapter 2: What the Software Can Do

Chapter 3: Software Structure

Chapter 4: Getting Started

Chapter 5: Incident Cost Calculator

Chapter 6: Types of Analysis and Study Design

Chapter 7: Using Incident Information

Chapter 8: WCB Insurance Premiums

Chapter 9: Productivity

Chapter 10: Economic Evaluation in Health and Safety Decision Making

Chapter: 11: Summary