

A PARTICIPATIVE HAZARD AND RISK MANAGEMENT (APHIRM) TOOLKIT FOR THE PREVENTION OF MUSCULOSKELETAL DISORDERS (AUSTRALIA)

Type of initiative: Research and development of a toolkit

Timeframe: Since 2006, pilot and field trials

1 Background

According to Safe Work Australia (2016) the frequency rates for “serious claims”¹ for work-related injury declined by 31% between 2000-01 and 2012-13. However, the proportion of these claims that related to musculoskeletal disorders (MSDs) remained the same – at approximately 60%. During the same period, the median time lost from work for serious MSD claims increased by 35% from 4.3 working weeks to 5.8 and the median amount of compensation for serious MSD claims increased by 59% AUD 5,600 in 2000-01 to AUD 8,900 in 2012-13. These figures are for ‘injuries’ and do not include cumulative disorders or injuries of self-employed workers who are not generally covered by the compensation schemes. Over 80% of the injuries were associated with muscular stress, approximately evenly divided between those involving manual handling and those involving “handling objects other than lifting, carrying or putting down objects”.

Based on data from 2011, musculoskeletal conditions accounted for 23% of the non-fatal burden of disease and injury in Australia, making them the second largest contributor after “mental health and substance use disorders” (24%). Although a minority of these were attributable to diseases such as osteoarthritis, rheumatoid arthritis and gout, the majority (66%) were attributable to “back pain and problems” (31%) and “other musculoskeletal conditions” (35%).

2 Description of the initiative

2.1 Introduction

Development of APHIRM risk management toolkit commenced in 2005 based on the observation that MSD risk management procedures used in workplaces focused almost entirely on physical hazards related to manual handling with little consideration given to psychosocial risk factors. However, substantial research evidence supports the important role of psychosocial factors in the development of MSDs. In addition, hazards may be cumulative or interactive. Organisational and social context factors together are termed psychosocial hazards, which is consistent with the terminology of the European Framework for Psychosocial Risk Management². According to this Framework, psychosocial hazards include factors related to: job content, workload and work pace; work schedule; control; organisational culture and function; interpersonal relationships at work; role in the organisation; career development; and the home-work interface.

The first project relating to APHIRM toolkit was in 2006 by La Trobe University. APHIRM toolkit is based on the World Health Organisation concept of a toolkit³ APHIRM comprises a set of practical tools and strategies for workplaces to identify hazards and assess risks, and to develop, implement and evaluate interventions to

¹ A serious claim is an accepted workers’ compensation claim that involves one or more weeks away from work

² European Framework for Psychosocial Risk Management
<https://pdfs.semanticscholar.org/f2f8/a8703cb1524aa8bf86fe23568e3be475e9ea.pdf>

³ https://www.who.int/occupational_health/publications/newsletter/newsletter_16_regions/en/index5.html

reduce risks. It is meant to help medium to large businesses assess their MSD prevention strategies and make improvements. It is intended to be easy to apply in ordinary workplaces by non-experts and is currently undergoing field trials.

2.2 Aim of the initiative

The overarching aim of the research was to develop more effective evidence informed risk management procedures to reduce the incidence of work-related musculoskeletal disorders. APHIRM toolkit was designed for use in medium to large businesses, thereby helping to transfer current knowledge of the effective management of MSD risks into the workplace.

2.3 Organisations involved

Development of APHIRM toolkit has been funded through a range sources which includes

- SafeWork South Australia
- La Trobe University
- Institute for Safety, Compensation and Recovery Research, which is a joint initiative between WorkSafe Victoria, the Transport Accident Commission and Monash University.
- Work Safe Victoria

2.4 What was done and how

Initial development of the toolkit began with a literature review to identify the physical and psychosocial hazards most strongly associated with the development of work-related musculoskeletal disorders (WRMSDs). Current WRMSD risk assessment tools suitable for use by non-experts as well as evidence concerning barriers to the implementation of risk management measures were also reviewed. The review of the MSD risk assessment tools concluded that none of the existing tools provided comprehensive coverage of all the main MSD hazards (Macdonald & Evans, 2006). The APHIRM toolkit developed at La Trobe University aims to address this gap.

APHIRM toolkit includes guidance on hazard identification and risk assessment methods and on required risk management measures based on research evidence identifying key requirements for successful MSD risk management. Those requirements include a high level of management commitment, multidimensional risk control interventions, and a participative approach involving workers. APHIRM toolkit provides tools and resources to support companies to develop, implement and evaluate interventions to reduce the risk of MSDs.

The APHIRM toolkit includes a survey component to assess a range of hazards associated with increased MSD risk. It also includes measures of pain and discomfort across five body regions. In order to facilitate ongoing risk assessment, a software package which automates a basic set of data analysis and reporting procedures was developed for inclusion in the APHIRM toolkit. It is envisaged that workplaces using this toolkit will use the survey on an annual basis to identify improvements and also any new hazards that may have emerged since the previous out surveys and generate reports to identify the main hazards requiring attention. The outcomes can be used in a participatory process to plan tailor-made measures to counteract MSDs in the workplace.

APHIRM toolkit was first tested and validated in the manufacturing and logistics sectors with subsequent redevelopment of the survey component which was customised for use in the healthcare sector. The aim of the latter project was also to investigate the degree to which results can be generalised to other sectors. The results indicated that the predictors of MSD risk across different sectors are similar, although their relative importance may differ.

A subsequent project in the residential elderly care sector investigated APHIRM toolkit in relation to claim rates and other indicators. The elderly care sector was selected in consultation with WorkSafe Victoria, because of the high numbers of MSD claims in the sector. The evaluation project investigated MSD claim rates in four organisations in the elderly care sector, two with low rates of MSDs and two with high rates. The data on claims were compared with information on:

- (1) measures from the MSD toolkit;
- (2) findings from a survey administered to managers and employees in the selected organisations;
- (3) other information gathered from the organisations, such as copies of policies and procedures related to the management of MSDs.

Fifty-eight semi-structured interviews were conducted with managers and supervisors, with questions covering occupational safety and health (OSH) measures in the company, the company's values, communication strategies, organisational support, and measures according to the 'Stages of Change' model. The rationale for using the model was that interventions targeted according to the stages of change are more likely to be effective. To achieve behavioural change at an organisational level, interventions should be targeted at managers and supervisors, based on the stage of change identified. This component of development was funded by WorkSafe Victoria.

2.5 What was achieved

The research offers several findings with implications for workplace practice and implementation of new ways to address workplace physical and psychosocial hazards in relation to MSDs. The findings from the project demonstrate the need for significant change in the current approaches to manage MSDs in the workplace. Effective MSD risk management must address both psychosocial and physical hazards in a fully integrated way that involves substantial worker participation. In addition, a focus is required on whole jobs rather than just on specific work tasks.

An important finding of the study in the residential elderly care sector was that prevention measures in participating companies primarily focused on training workers in the appropriate use of equipment. However, other factors also contribute to the development of MSDs and organisations need to adopt a more comprehensive approach to managing all potential hazards and risks, both physical and psychosocial.

Using the 'Stages of Change' model identified information with regard to an organisations' perceptions of the risks associated with MSDs. The Stage of Change model provide information about where an organisation is in relation to readiness to change, so interventions can be more appropriately targeted to improve the likelihood of uptake and then successful implementation.

The next steps required are to evaluate the effectiveness of APHIRM toolkit in assisting workplaces in developing interventions and also to evaluate the impact of this new approach to reducing the incidence and severity of MSDs.

2.6 Success factors and challenges

Using research evidence in the development of APHIRM toolkit, validating and testing it in different sectors, and testing the Stages of Change model to target organisation appropriately are the key success factors for the toolkit.

The APHIRM toolkit now needs to be implemented in a range of workplaces so that its effectiveness in reducing MSD risk can be evaluated. The customisation of the toolkit to different sectors and ensuring the uptake of the toolkit by companies may be challenging.

2.7 Transferability

APHIRM toolkit was developed according to the World Health Organisation concept of a toolkit as a set of practical tools and strategies for workplace use in identifying hazards and assessing risk, and for developing, implementing and evaluating interventions to reduce risk, based on research evidence identifying key requirements for successful MSD risk management. The survey component of the toolkit has been trialled in a range of sectors.

References and resources

- (1) Oakman, J., Investigation of MSD toolkit risk and hazard measures in relation to claim rates and other indicators, 2014, available at:
https://www.iscrr.com.au/_data/assets/pdf_file/0006/297276/Investigation-of-MSD-toolkit-risk-and-hazard-measures.pdf
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- (4) Oakman, J. 2012. [Prevention of work-related musculoskeletal disorders: Development of a toolkit for workplace users](#).

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