It doesn't have to hurt!

A guide for implementing musculoskeletal injury prevention (MSIP) programs in healthcare

Occupational Health & Safety Agency for Healthcare in BC

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OHSAH

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Foreword

Everyone wants to work in a healthy, safe workplace. Such workplaces promote productivity and help workers accomplish organizational goals such as providing quality patient care. Healthcare environments in which there is a demonstrated commitment to worker health and safety also encourage worker development and tend to attract and retain qualified workers. Healthy workplaces are built upon a foundation of values and culture in which workers are viewed as a key asset.

The proactive prevention of musculoskeletal injury (MSI) is one way for an organization to demonstrate commitment to worker health and safety, while reaping the economic benefits of reduced costs associated with worker injury. A musculoskeletal injury prevention (MSIP) program that includes supervisors and workers has a far greater impact on workplace wellness than simply preventing injury. A well-implemented MSIP program:

- provides an opportunity for workers to participate in decisions that influence how their work is performed
- fosters positive communication between workers and supervisors
- provides an opportunity for workers to learn

Developing and implementing an MSIP program in a healthcare setting takes some effort, but the time and resources required are an investment that pays many dividends for the organization, workers, supervisors, and patients.

Who should use this guide

It Doesn't Have to Hurt: A guide for implementing musculoskeletal injury prevention (MSIP) programs in healthcare is for anyone who needs information on MSI and how to develop and implement a program that will help prevent MSI in the workplace. Everyone in a healthcare workplace has some degree of responsibility for MSIP, so it is important to have at least a basic understanding of the principles and core elements of an MSIP program.

Readers who may find this guide useful include:

- employers
- workers
- managers
- members of joint occupational health and safety committees
- members of MSIP working groups

How to use this guide

This guide is intended to assist in the design and implementation of a proactive, participatory MSIP program that will meet current legislated requirements to control the risk of work-related MSI, as well as contribute to the overall health and well being of healthcare workers.

This guide is not necessarily meant to be read from cover to cover, although you can certainly do so if you wish. You will probably find it more useful, however, to use it as a reference text from which you can pick and choose material that is most relevant to your position and responsibilities.

The PEARS program and WHITE™ Database

OHSAH developed the Prevention and Early Active Return-to-Work Safely (PEARS) Program to help minimize injury, time loss, and disability to healthcare workers. The program accomplishes this by combining primary prevention, early injury follow-up, and active return-to-work strategies. While this MSIP guide addresses MSIP as a stand-alone program, it is essential to integrate such a program with follow-up for injured workers, preferably involving the same people who did the initial prevention work. This way the MSIP team can better appreciate how their prevention activities are working in practice, and will be able to recommend further modifications to help the injured worker return to work as early and safely as possible.

This MSIP guide is a resource to help achieve some of the objectives of the PEARS program, but it focuses mainly on the "p" in PEARS – primary prevention – as it relates to MSI. Resource material on how to implement an effective PEARS program is currently being developed to build on the content of this guide.

The Workplace Health Indicator Tracking and Evaluation (WHITE™) Database is a state-of-the-art database developed by OHSAH. The WHITE Database facilitates analysis of workplace incidents and injuries and provides stakeholders with comparative performance indicators on workplace health and safety. This helps achieve the objectives of PEARS by:

- centralizing the information used to reduce and eliminate workplace injuries
- assisting in providing prompt clinical and workplace interventions to reduce disability
- evaluating the effectiveness of health and safety programs and interventions

PEARS and the WHITE Database are not discussed in this guide because they were still under development during the writing of this guide. For more information on PEARS and the WHITE Database, please visit www.ohsah.bc.ca or call OHSAH at 604-775-4034 or toll-free at 1-800-359-6612.

This guide is divided into parts that each cover a topic related to MSIP. Within each part you will find numbered sections and subsections that include information related to that topic. Briefly, the parts are organized as follows:

- Part 1 provides basic information on MSI and MSIP programs.
- Parts 2 - 7 focus on the risk management process, which includes policy & procedure development, consultation, risk identification, risk assessment, risk control, and education & training.
- Part 8 describes proactive risk management strategies that may help reduce MSI in healthcare facilities.
- Part 9 describes how to implement a secondary prevention program.
- Part 10 describes injury tracking, including gathering and analyzing data.

At the back of the guide are appendices that include worksheets, checklists, samples, and forms to help you during the development and implementation of the MSIP program.

Contents

Part I

Musculoskeletal injury prevention (MSIP)

In this Part:

1.1 What is musculoskeletal injury (MSI)?

The Workers Compensation Board of BC's Occupational Health and Safety Regulation defines *musculoskeletal injury (MSI)* as "an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including a sprain, strain and inflammation, that may be caused or aggravated by work." MSI is sometimes also referred to as work-related musculoskeletal disorder, cumulative trauma disorder, repetitive strain injury, or activity-related soft tissue disorder.

Resources in this guide

- Appendix 6: Signs and symptoms survey, page 136
- Appendix 16: Incident Investigation form, p. 177

MSI typically affects the back, neck, shoulders, elbows, wrists, hands, knees, or ankles. It usually develops over time as a result of one or more of the following risk factors:

- force
- repetition
- awkward posture
- static posture
- contact stress

For more information, see Section 4.2, "Risk factors for MSI," page 37.

Some common disorders associated with MSI are:

- tendinitis
- tenosynovitis
- chronic back pain
- carpal tunnel syndrome
- bursitis
- degenerative disc disease

1.1.1 Common signs and symptoms of MSI

Early recognition of common signs and symptoms of MSI can help prevent injuries from getting worse. *Signs* are things that can be seen, such as swelling or redness. *Symptoms* are things that can be felt but cannot be seen, such as numbness, tingling, or pain.

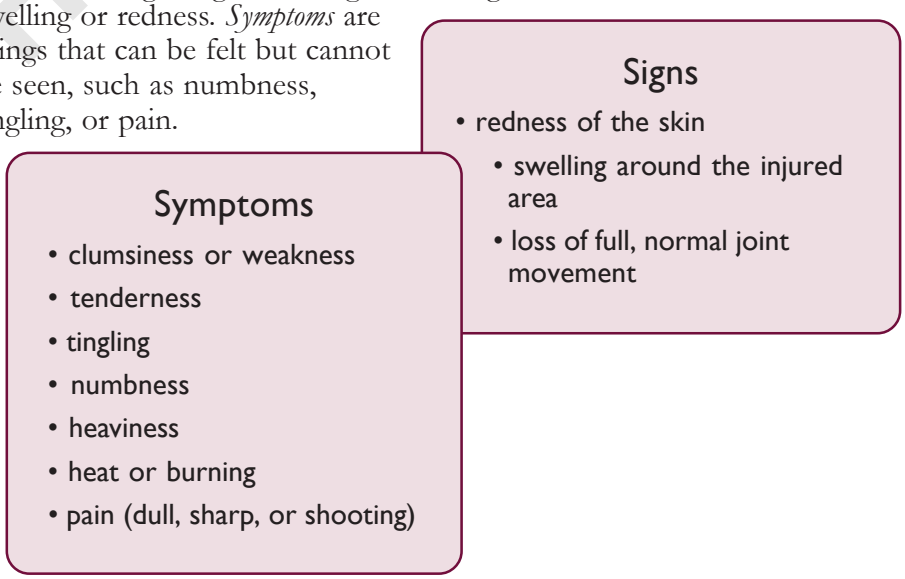


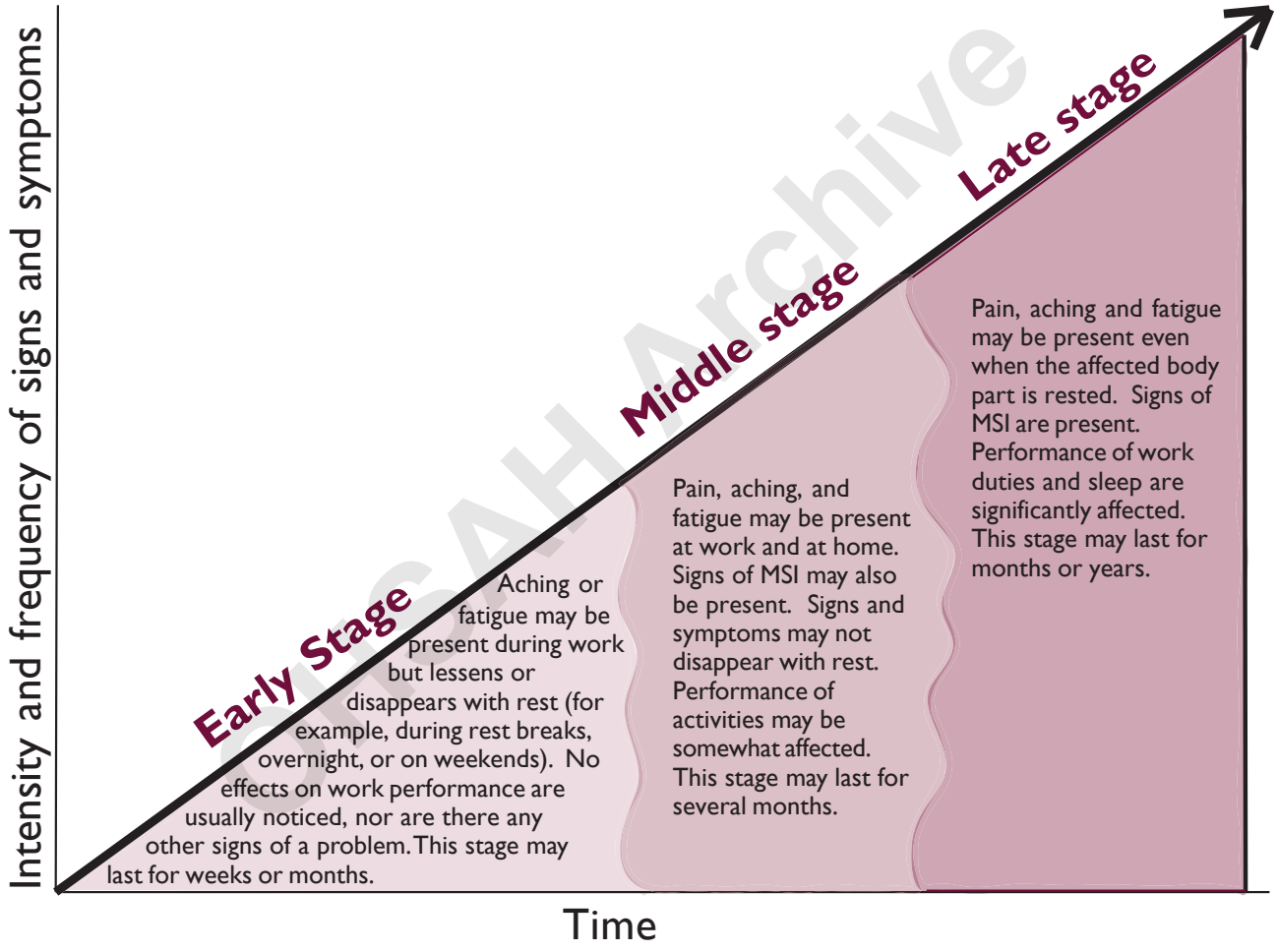
Figure 1.1
Common signs and symptoms of MSI

1.1.2 Stages of MSI

MSI signs and symptoms tend to follow the stages described in Figure 1.2.

Some MSI can progress rapidly from early to late stages. Workers who experience early signs and symptoms of MSI should report them to a supervisor immediately and fill out an injury or incident report form. If signs or symptoms get worse or persist for more than a few days, workers should see a medical professional.

Figure 1.2
Stages of MSI



Encouraging workers to report early signs and symptoms of MSI is an important part of an MSIP program. Signs and symptoms surveys can help elicit information and establish how many workers, and which workers, are experiencing signs and symptoms that they have not yet considered severe enough to report.

1.2 Why is MSI a concern in healthcare?

The healthcare industry has a higher rate of injuries each year than any other single industry sub-sector. This high rate of injuries has a negative impact on workers and is a financial burden to the industry. It makes it harder to attract and retain quality workers and to provide quality care for patients.

1.2.1 Injury statistics

The following statistics illustrate why MSI is such a concern in the healthcare industry:

- In 2002, the injury rate for all industries in BC was 3.2. The injury rates in healthcare for the acute care and long-term care classification units were 5.2 and 7.9 per 100 full-time equivalents.
- An average of 950 healthcare workers miss work each day because of work-related injuries.
- Nearly 80% of healthcare injury claims are sprains and strains (MSI).
- MSI attributed to overexertion (for example, patient handling and material handling) account for more than 50% of healthcare injury claims.

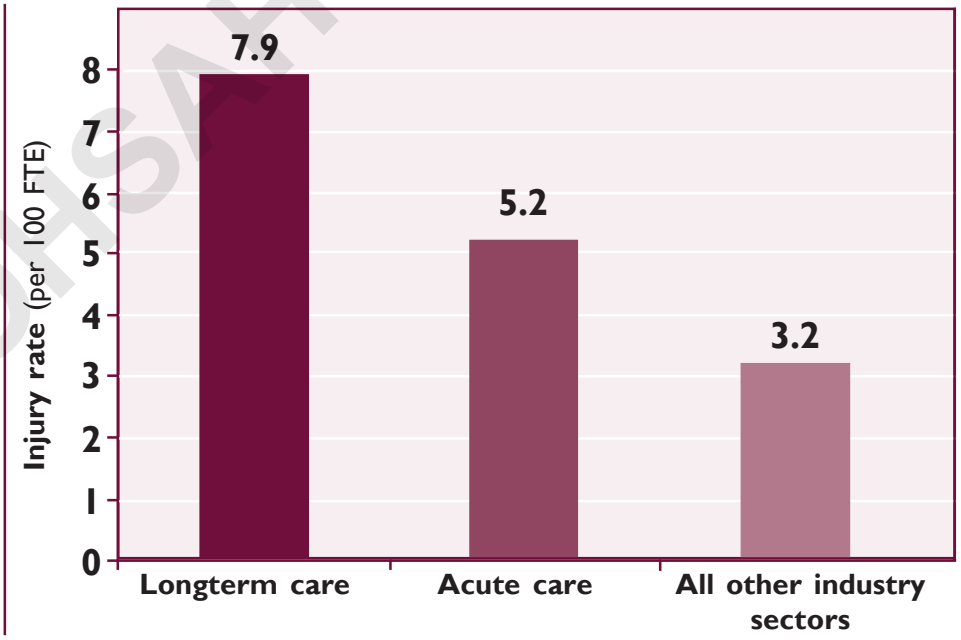


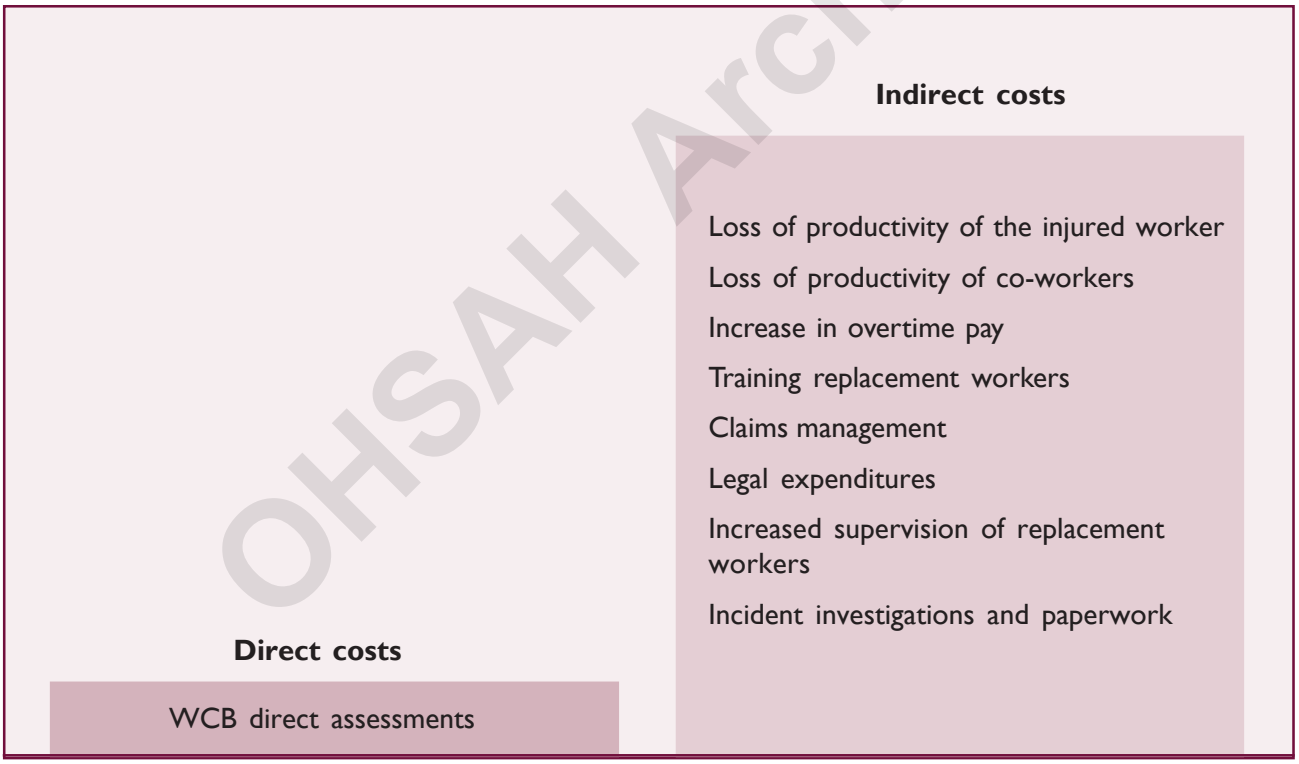
Figure 1.3
Healthcare injury rates (long-term care and acute care) compared to all other industry sectors in BC, 2002

1.2.2 Financial costs of MSI

There are two types of costs associated with work-related MSI: direct costs and indirect costs. The direct costs of a work-related MSI are the WCB assessments associated with the injury. In the five-year period from 1998 to 2002, the healthcare industry in BC had fully reserved claim costs totalling $400 million. (*Fully reserved claim costs* are the full costs associated with a claim, including claims payments plus anticipated future costs.)

The indirect costs of a work-related MSI include loss of productivity, increased overtime pay, retraining, replacement, and administration. Indirect costs are estimated to be as much as four times that of direct costs.

Figure 1.4
The direct and indirect costs associated with MSI



1.3 What is a musculoskeletal injury prevention (MSIP) program?

A musculoskeletal injury prevention (MSIP) program is a systematic approach that aims to eliminate or minimize MSI in the workplace through the application of a risk management process. An MSIP program should be an integral part of the facility's overall occupational health and safety program.

1.3.1 Program components

Written policies and procedures (for more information, see Part 2, "Written policies and procedures," page 21) form the basis of an MSIP program. They are the foundation on which a facility can build an effective risk management process, which is the framework that can be used to prevent and minimize MSI. The risk management process consists of the following components, each of which has a separate part in this guide:

- consultation (see Part 3)
- risk identification (see Part 4)
- risk assessment (see Part 5)
- risk control (see Part 6)
- education and training (see Part 7)

1.3.2 Why do facilities need MSIP programs?

An MSIP program is the most effective way to ensure that a facility meets the legal requirements to identify, assess, and control the risk of MSI in the workplace. MSIP programs are also advantageous from a business point of view. Improving health and safety in the workplace helps improve worker morale and prevent costly injuries. An effective MSIP program can provide many cost-effective benefits to an organization.

1.3.3 Commitment to the program

A successful MSIP program requires a commitment by all individuals to reduce MSI in the workplace. Employers can demonstrate commitment in the following ways:

- Make management accountable for the success of the MSIP program.
- Develop and implement an MSIP policy.
- Inform all managers, supervisors, and workers of the MSIP policy and procedures.
- Implement an MSI risk management process.
- Involve workers in the risk management process.
- Evaluate control measures to ensure that they are working.
- Ensure that workers report early signs and symptoms of MSI.
- Inform managers, supervisors, and workers about successes.
- Share MSIP program successes throughout the organization.

Legal requirements for employers in British Columbia

Basic health and safety requirements for all employers in BC are described in the *Workers Compensation Act* in Division 3, Section 115, General Duties of Employers. Other fundamental requirements are described in the following sections of the Occupational Health and Safety Regulation:

- Sections 4.46 to 4.53, Ergonomics (MSI) Requirements
- Sections 3.1 to 3.4, Occupational Health and Safety Programs
- Sections 3.5 to 3.8, Workplace Inspections
- Sections 3.9 to 3.11, Correction of Unsafe Conditions

1.3.4 Culture of safety

Everyone within the workplace should support a *culture of safety* — a shared set of attitudes, values, goals, and work practices that focus on health and safety. This involves:

- integrating MSIP into all departments and services
- following safe work practices on a day-to-day basis
- supporting safe work practices at all levels of supervision and management

Including workers in the MSIP process and celebrating short-term and long-term successes with them will also help to build and maintain a culture of safety.

Figure 1.5
Benefits of an MSIP program

1.4 Roles and responsibilities

The success of an MSIP program depends on commitment from employers and management; participation and cooperation from workers; and communication between everyone involved in the program. Employers are ultimately responsible for MSIP in the workplace, but they can get assistance with the MSIP program from the MSIP working group (if the facility has one), joint occupational health and safety committee, or an external resource.

For an MSIP program to work, all individuals must:

- understand their roles and responsibilities
- have sufficient authority to carry out their roles and responsibilities
- have the required knowledge and skills to carry out their roles and responsibilities
- communicate clearly and frequently

This section describes the basic roles and responsibilities that will help ensure an effective MSIP program.

1.4.1 Employers

Employer roles and responsibilities should include the following:

- Develop, implement, and maintain an MSIP program.
- Maintain a commitment to the MSIP program.
- Provide the resources necessary for a healthy, safe workplace.
- Assign responsibilities within the MSIP program.
- Establish a process to ensure that all managers and supervisors are accountable for MSIP in their areas.
- Ensure that existing policies and procedures encourage participation in the MSIP program.
- Include the program in all strategic planning, budgeting, and human resources plans.
- Consult with workers and the joint occupational health and safety committee regarding MSIP.
- Ensure that all managers, supervisors, and workers follow MSIP requirements.
- Ensure that orientation of new workers includes education and training on their roles and the roles of people they will be working with and for.
- Ensure an annual review of the MSIP program, including its policies and procedures.

"Employers are ultimately responsible for MSIP in the workplace"

1.4.2 Managers and supervisors

Manager and supervisor roles and responsibilities should include the following:

- Consider safety an operational priority.
- Ensure that all workers under your direct supervision comply with the MSIP program and the Ergonomics (MSI) Requirements in the Regulation.
- Make sure that the risks of MSI are identified, assessed, and controlled for all jobs.
- Ensure that all workers under your supervision know the early signs and symptoms of MSI, their potential health effects, and what to do if they have signs or symptoms.
- Ensure that all workers under your supervision are trained in safe work practices and MSI control measures.
- Encourage and support worker reporting of MSI signs and symptoms.
- Encourage and support investigations in response to reported MSI signs and symptoms.
- Ensure that sufficient resources are available to maintain the MSIP program.
- Ensure that workers have the necessary equipment and use it properly.
- Ensure that equipment is maintained properly.
- Provide time for workers under your supervision to participate in activities related to the MSIP program, when required.
- Ensure consultation with the MSIP working group, the joint occupational health and safety committee, and workers regarding MSIP, when required.

"Consider safety an operational priority"

1.4.3 Workers

Worker roles and responsibilities should include the following:

- Cooperate with the employer in all aspects of the MSIP program.
- Comply with and actively participate in all aspects of the MSIP program.
- Follow MSIP strategies and safe work practices.
- Know the early signs and symptoms of MSI, their potential health effects, and control measures for preventing MSI.
- Participate in education and training on established safe work practices and the use of equipment.
- Report risks of MSI to managers or supervisors.
- Report signs and symptoms of MSI to managers, supervisors, and first aid attendants.
- Cooperate in the investigation of risk factors or incidents.
- Cooperate in the development and implementation of control measures.
- Use personal protective equipment and safety equipment provided by the employer.

1.4.4 MSIP working groups

Not all facilities have a specific MSIP working group. In facilities where there is no working group, the joint occupational health and safety committee should take on working group roles and responsibilities.

MSIP working group roles and responsibilities should include the following:

- Implement the MSIP program.
- Collaborate with all levels of the organization during the MSIP process.
- Conduct regular meetings and provide meeting minutes to employers, workers, and the joint occupational health and safety committee to inform them of decisions and actions that have been recommended.
- Document all MSIP activities.
- Inform the joint occupational health and safety committee of situations that may pose a risk of MSI to workers.
- Respond promptly to complaints relating to risks of MSI.
- Maintain records regarding complaints and their resolution.
- Identify risks of MSI reactively by reviewing data on incidents and claims, and proactively by identifying risk factors.
- Conduct risk assessments and develop control measures to address identified risk factors.
- Consult with workers when identifying, assessing, and developing controls for risks.
- Consult the purchasing and facilities departments when developing control measures.
- Participate in the evaluation of control measures to determine their effectiveness and assess any deficiencies.
- Promote worker education on the early signs and symptoms of MSI, their potential health effects, and control measures for preventing MSI.
- Promote worker training in safe work practices and MSI control measures that have been implemented.

For more information, see Section 1.5, "MSIP working groups," page 13.

"In facilities where there is no MSIP working group, the joint occupational health and safety committee should take on MSIP working group roles and responsibilities."

1.4.5 Joint occupational health and safety committees

Where a facility has not established an MSIP working group, the joint occupational health and safety committee should be responsible for the duties listed above in addition to the following roles and responsibilities:

- Manage and evaluate the MSIP program and make recommendations to improve it.
- Collaborate with all levels of the organization during the MSIP process.
- Conduct regular joint occupational health and safety committee meetings.
- Provide meeting minutes to employers and workers to inform them of decisions and recommended actions.
- Collaborate with the MSIP working group, if there is one, to make recommendations for the establishment of and support for an MSIP program.

"JOHS Committees are responsible for managing and evaluating the MSIP program and making recommendations to improve it."

1.4.6 Occupational health and safety departments

Larger facilities may have an occupational health and safety department. The department may consist of a multidisciplinary group of health and safety professionals such as occupational health nurses, physiotherapists, occupational therapists, occupational physicians, and ergonomists.

Occupational health and safety department roles and responsibilities should include the following:

- Act as a resource to the joint occupational health and safety committee and the MSIP working group.
- Encourage and document early reporting of MSI signs and symptoms by workers.
- Document MSI incidents and claims.
- Assist and support the MSIP risk management process at all stages.
- Promote and assist in the education and training of workers, the joint occupational health and safety committee, and the MSIP working group.

1.4.7 MSIP coordinators

MSIP coordinator roles and responsibilities should include the following:

- Chair and coordinate the MSIP working group.
- Encourage employer commitment to the MSIP program and communicate this to the MSIP working group, joint occupational health and safety committee, and workers.
- Provide technical assistance and support to all workers on MSIP program matters.
- Attend MSIP working group meetings as a resource person.
- Coordinate interdepartmental MSIP activities.
- Collect, analyze, and report MSI statistics.
- Coordinate worker education on the early signs and symptoms of MSI, their potential health effects, and risk control measures for preventing MSI.
- Coordinate worker training in safe work practices and MSI control measures that have been implemented.

1.4.8 Facilities departments (physical plant)

Facilities department roles and responsibilities should include the following:

- Support the MSIP program.
- Act as a resource for the joint occupational health and safety committee and MSIP working group when MSI control measures are being developed.
- Consult with the joint occupational health and safety committee and MSIP working group when control measures are being implemented, as well as when planning renovation or changes to the work environment.

1.4.9 Purchasing departments

Purchasing department roles and responsibilities should include the following:

- Act as a resource for the joint occupational health and safety committee and MSIP working group when MSI control measures are being developed.
- Consult with the joint occupational health and safety committee and MSIP working group when purchasing new equipment to ensure that MSIP is considered.

For more information on the purchasing department's role in proactive risk management, see Section 8.4, "Evaluating purchasing options," page 83.

1.5 MSIP working groups

An MSIP working group is a committee whose primary mandate is to coordinate and conduct the MSIP program. Not all facilities establish a specific MSIP working group and there is no requirement to do so; however, a working group assigned to the MSIP program is an effective way to ensure that the program will be successful.

1.5.1 Who should be in the MSIP working group?

The working group should include workers and management who are knowledgeable of the work activities. Other professionals may provide additional guidance, such as an ergonomist to aid in workplace assessment or configuration, or an occupational therapist to assist with relating injuries to work activities and to aid in return-to-work planning. The size of the working group and the level of professional guidance needed depend on the needs of the facility.

For the MSIP working group to succeed, it should include representation from every relevant organization or department. Individuals or bodies may include the following:

- medical or safety professionals (for example, an occupational health nurse, a physiotherapist, an occupational therapist, an occupational physician, or an ergonomist)
- facility administrators
- human resources department
- purchasing department
- facilities department (physical plant)
- MSIP coordinators
- workers
- members of the joint occupational health and safety committee
- supervisors or managers
- union members

"A working group assigned to the MSIP program is an effective way to ensure that the program will be successful."

1.5.2 What do working group members need to know?

Members of an MSIP working group need to have certain skills and knowledge in order for the group to function effectively.

Good communication skills and systems

Communication skills include the ability to listen actively and to communicate ideas in a clear, concise manner. Valuing input from all members of the working group is important to maintain the group's effectiveness.

Practical experience in health and safety

The input of every member is important. Each healthcare worker can provide a unique, valuable perspective, particularly those who have been working in the organization for longer and who are more familiar with specific workplace risks and facility operations.

Knowledge of MSIP issues

It is important to know the basic concepts of MSI and risk management. Members of the working group need to know about the following:

- signs and symptoms of MSI
- potential health effects of MSI
- risk factors for MSI
- relevant policies and procedures
- the risk management process
- how to develop a plan for implementing and evaluating an MSIP program

Interest, enthusiasm, and a positive outlook

Members of the working group need to be genuinely committed to making improvements in the health and safety of the workplace. Individuals who volunteer for or are elected to the working group may be more committed than those who are assigned to it.

1.5.3 Education and training for the working group

Members of the MSIP working group may require some education and training in the MSIP issues listed above in Section 1.5.2. This investment will enhance the working group's effectiveness and benefit the MSIP program. It may also be beneficial to include team-building exercises designed to maximize the members' ability to work together.

All members, including management and workers, should be encouraged to attend in-service training sessions and workshops to maintain and increase their MSIP knowledge and skills. Training programs should be conducted in the work environment whenever possible to encourage participation, increase workplace awareness, and provide hands-on experience. Feedback during training sessions should be encouraged.

1.6 Evaluating MSIP programs

The MSIP working group should evaluate the MSIP program to ensure that it is effective. The working group should ensure that:

- deficiencies are identified and dealt with in a timely manner
- successes are celebrated
- the program evaluation is communicated to workers

The program evaluation should measure outcomes in terms of whether or not the program has been implemented as intended during the past year (relative to policies and procedures) and whether the goals and objectives of the program have been achieved. Clearly defined goals and objectives will make program evaluation easier.

1.6.1 How often should programs be evaluated?

MSIP programs should be evaluated:

- annually
- whenever changes are made to the organization of the facility, the MSIP working group, or the joint occupational health and safety committee
- whenever government legislation is modified

In the Regulation

Part 4.52 — Evaluation

(1) The employer must monitor the effectiveness of the measures taken to comply with the Ergonomics (MSI) Requirements and ensure they are reviewed at least annually.

(2) When the monitoring required by subsection (1) identifies deficiencies, they must be corrected without undue delay.

1.6.2 Guidelines for program evaluation

Consider the following guidelines for evaluating an MSIP program:

- Review existing policies and procedures.
- Analyze trends in injury and illness rates.
- Survey workers.
- Review control measures to determine if they have been implemented as planned and if they are effective. (See Section 6.4, "Evaluating implemented control measures," page 63.)
- Review the implementation process itself and evaluate whether or not it has been effective, efficient, and marked by good communication.
- Review the results of workplace evaluations.

- Review program documents such as injury reports, assessment results, action plans, and timelines.
- Review management, union, and worker participation.
- Identify deficiencies in the program.
- If deficiencies are identified, develop and implement an action plan to correct them.
- Review the education and training sessions delivered to workers.

Table 1.1 lists some of the quantitative and qualitative indicators that the working group can use to evaluate the MSIP program.

Table 1.1
Indicators for MSIP program evaluation

Quantitative Indicators	Qualitative indicators
• the incidence of MSI (see Part 10, "Injury tracking," page 107) • average number of days lost per injury (severity of MSI) • claims costs of MSI • worker absenteeism and turnover rates • cost effectiveness of control measures, including a review of direct costs and financial benefits of control measures (see Section 1.6.4,"Measuring the financial benefits of a program,"page 18) • number of requests for assistance by workers • intensity, frequency, and duration of MSI signs or symptoms • number of workers who received training • number of assessments performed • number of control measures implemented	• compliance with MSIP policies and procedures • informal complaints of MSI signs or symptoms • worker morale and job satisfaction • adherence to program components by individuals and departments • acceptance of program components

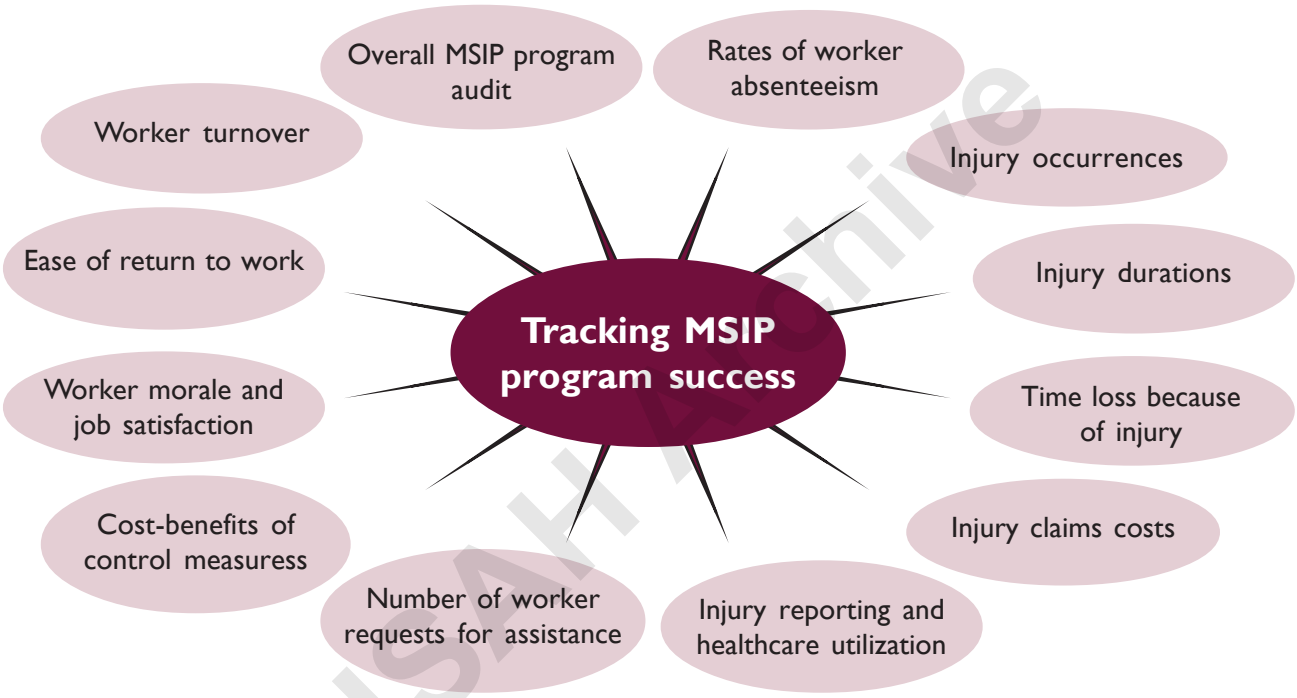
1.6.3 Program tracking

In order to have the necessary data available when it comes time to evaluate an MSIP program, it is important to track the program on an ongoing basis. Tracking involves collecting data systematically and documenting outcomes as they occur — within jobs, departments, and the facility as a whole. Having a program evaluation plan in place will help ensure that the correct information is collected and documented. It is also important in the beginning to establish baseline data or benchmarks against which future data can be compared. The facility may need to collect data for several years to demonstrate change clearly.

Measures for program tracking

Measuring all of the outcomes in one program may be difficult and time consuming. Begin by choosing two or three key outcomes that relate to the objectives of the program. Consider using some of the measures illustrated in figure 1.6 to track the success of the MSIP program.

Figure 1.6
Useful measures for tracking an MSIP program



Methods for collecting data

Consider using one or more of the following methods to gather data on the measures described in Figure 1.6:

- surveys (e.g. signs and symptoms surveys or job satisfaction surveys)
- focus groups
- databases (e.g. WCB, human resources, and purchasing databases)
- data logs to track day-to-day use of equipment
- risk assessments
- interviews
- observations

1.6.4 Measuring the financial benefits of a program

You may also want to consider the success of the MSIP program from a business perspective. A cost-benefit analysis of a successful program will show that the costs associated with implementing control measures are outweighed by the savings that will result from those control measures. There are three factors to consider when performing such a cost-benefit analysis:

- the direct and indirect costs of injuries associated with the tasks
- the cost of implementing control measures
- the cost savings after control measures are implemented

Table 1.2

Potential costs and benefits of implementing control measures

Costs	Benefits
• wages of workers developing control measures • reduced productivity during implementation • equipment and materials • maintenance and administration costs of implementation • education and training of workers	• improved worker productivity • improved quality of service from workers • improved quality of life for workers • retention of highly skilled workers • fewer worker errors • lower redesign costs for retrofit or renovation of the workplace • decreased future claims costs

Resources in this guide

• Appendix 14: MSIP policy review, page 174

1.7 Sustaining MSIP programs

Once an MSIP program is in place, it is important to maintain its long-term effectiveness. It is essential to document progress and reinforce the importance of the program to all management and workers in the organization. The aim should be to build ongoing awareness and commitment to program objectives and to a work culture that values safety. The MSIP program must be integrated into all departments and services, and be practised on a daily basis.

1.7.1 Maintaining a program

Following these guidelines will help maintain an MSIP program:

- Maintain the written policies and procedures.
- Conduct regular meetings.
- Encourage a participatory approach.
- Develop solutions that address identified health and safety issues.
- Design effective communication strategies to ensure that all MSIP information is available to and understood by all stakeholders.
- Document the effectiveness of the program and individual controls.
- Celebrate successes and reward positive performance.

1.7.2 Encountering resistance to change

When an MSIP program is implemented, there may be a period of adaptation and resistance to change. Taking steps to overcome potential barriers is important to ensure successful implementation of the program.

Potential barriers that you may encounter when implementing an MSIP program include:

- low interest from management or supervisors
- lack of understanding of the impact of MSI in the workplace
- lack of understanding of roles and responsibilities for establishing and maintaining a program
- lack of clarity regarding program objectives
- lack of worker understanding and involvement in the MSIP process
- lack of available resources (for example, finances or time) for the program
- existing cultural and organizational structures that resist change
- lack of education and training regarding the program

1.7.3 Celebrating successes and rewarding positive performance

After identifying program successes, communicate them to workers and celebrate them. Recognize the efforts of members of the MSIP working group and workers who have contributed to the program. Consider the following ideas for rewarding positive performance:

- Organize an event to recognize worker contributions to the program.
- Have senior management and union representatives acknowledge individual accomplishment.
- Communicate program success in a newsletter, on a Web site, on posters, or in meetings.

Celebrating successes can highlight to senior management and workers that positive health and safety changes are possible in the workplace. Rewarding positive performance can increase awareness of health and safety issues and motivate workers and management to continue working together to improve health and safety.

Part 2

Written Policies & Procedures

In this Part:

2.1 Purpose of MSIP policies

Written policies and procedures help standardize approaches to maintain consistency and quality in program delivery, and contribute to the sustainability of the MSIP program. A written MSIP policy is a statement of principles and general guidelines that clarifies the facility's health and safety philosophy regarding MSI and governs its actions. A policy will help the facility establish a framework for what should and should not be done to prevent MSI. Policies should be clear and concise and should be written by employers in consultation with workers.

"Policies should be written by employers in consultation with workers."

A written MSIP policy should:

- establish a clear commitment to minimize the risk of MSI to workers
- clarify roles and responsibilities of those involved in the MSIP program
- promote consistency and quality in the processes and methods related to MSIP
- support and promote the objective of reducing the risk of MSI to workers
- be consistent with Sections 4.46 to 4.53, Ergonomics (MSI) Requirements in the Regulation

Resources in this guide

- Appendix 4: Writing an MSIP policy, page 131
- Appendix 5: Example of an MSIP policy, page 133

2.2 Purpose of MSIP procedures

Written MSIP procedures define the specific approaches that the facility will use to prevent MSI. In other words, they describe in concrete terms the details of how MSIP activities are to be conducted. Procedures should be clearly written and include all the information necessary to complete the tasks safely and properly.

A written MSIP procedure should:

- specify the policy clause that requires the procedure to be conducted
- specify to whom the policy and procedure applies
- define the task to be accomplished
- describe what should and should not be done to accomplish the task
- include examples of how the task may be successfully completed
- include checklists or standardized documentation templates to promote consistency
- include contact information and information on available resources

"Written MSIP procedures define the specific approaches that the facility will use to prevent MSI."

2.3 Content of policies and procedures

Every facility is different, so it is important to develop unique written policies and procedures that address the specific issues facing your organization; do not simply use another facility's policies and procedures. This section describes some of the contents that the facility's policies and procedures may include.

"Do not simply use another facility's policies and procedures."

2.3.1 Roles and responsibilities

MSIP policies may describe the roles and responsibilities of:

- directors
- managers
- supervisors
- workers
- occupational health and safety departments
- joint occupational health and safety committees
- MSIP coordinators
- MSIP working groups
- facilities departments (physical plant)
- purchasing departments

For more information, see Section 1.4, "Roles and responsibilities," page 8.

2.3.2 General contents

MSIP policies and procedures may also include:

- definitions of technical terms and concepts related to MSIP
- an outline of MSIP education and training for those involved in the program
- an overview of the MSI risk management process
- instructions for documenting and investigating reported signs and symptoms of MSI, with references to the process for risk identification, assessment, and control
- instructions for documenting the MSIP risk management process
- information on early intervention and return-to-work programs in the facility or region
- standards for the use of equipment
- a process for follow-up and investigation when policies and procedures are not being adhered to

No-lift policies

In 2001 the Health Employers Association of BC and the Association of Unions entered into a memorandum of understanding to work toward "eliminating all unsafe manual lifts of patients." This memorandum is specifically intended to help prevent MSI related to patient handling. For a copy of the memorandum of understanding, see Appendix 9.

Developing a no-lift policy and making it central to the facility's overall patient handling strategy is an effective way to control the risks associated with patient handling.

For a sample no-lift policy, see Appendix 10. For information on patient and resident mechanical lifts, see Appendix 11.

2.3.3 Terms of reference for MSIP working groups

MSIP policies may include terms of reference for an MSIP working group that is responsible for the MSIP program or elements of the program. The terms of reference may include the following:

- purpose and scope of the group
- goals and objectives
- roles and responsibilities
- composition and size of the group
- quorum size
- terms of office
- selection of alternates
- frequency of meetings
- instructions for record keeping
- instructions for communication

For more information, see Section 1.5, "MSIP working groups," page 13.

2.4 Implementing the policy

Once you have developed the contents of the MSIP policy, you are ready to implement it. The six steps outlined in figure 2.1 will help the implementation go smoothly.

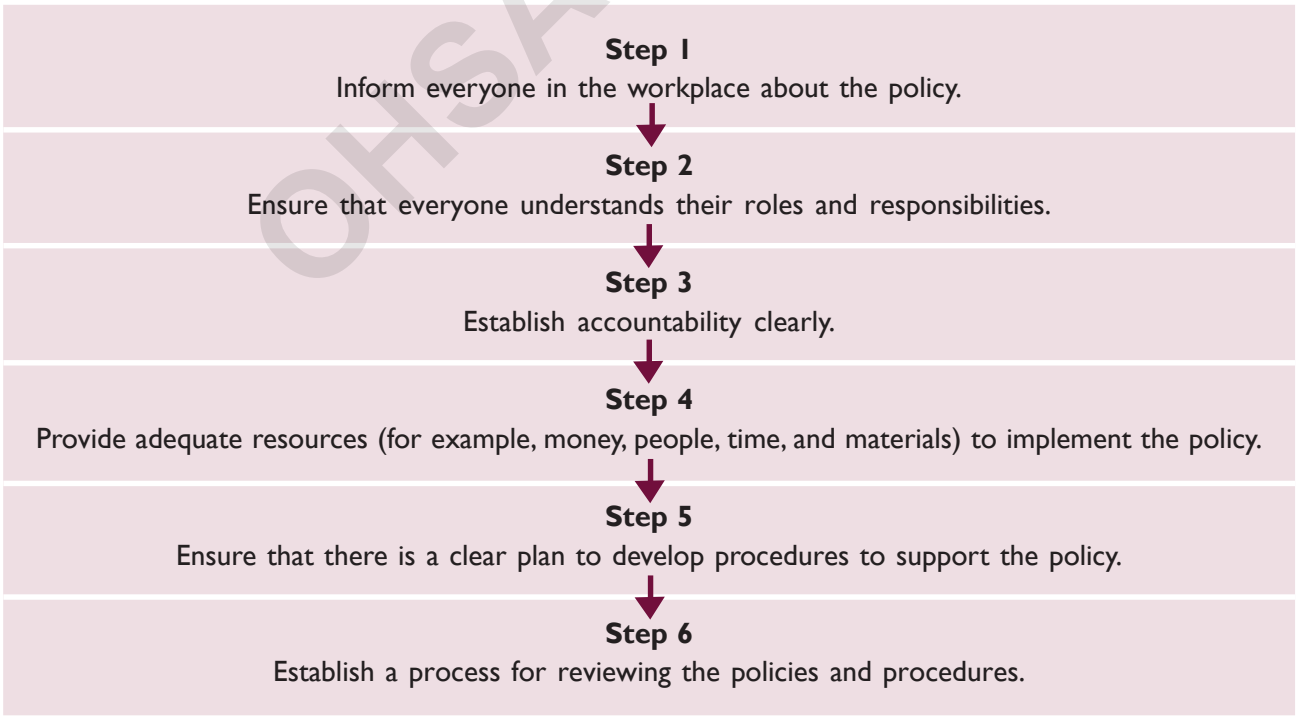
When implementing a policy, it is important to ensure that the main stakeholders are included in the process. This can be accomplished, in part, by establishing an MSIP working group.

2.4.1 Inform and educate others about the policy

Follow these guidelines during policy implementation:

- Inform and educate all workers about the policy and, where appropriate, suppliers, subcontractors, clients, and temporary workers.
- Ensure that workers can accurately describe the contents of the policy and their responsibilities under it.
- Inform and educate new workers about the policy during orientation.
- Remind all workers regularly of the policy content and intent.
- Post the policy in an accessible area of the workplace.
- Consider displaying occupational health and safety policy statements, including MSIP policy statements, in clear view of workers and visitors.

Figure 2.1
Steps for implementing an MSIP policy



2.5 Reviewing policies and procedures

Reviewing the MSIP policy and procedures should be part of the MSIP program evaluation. For more information, see Section 1.6, "Evaluating MSIP programs," page 15. The MSIP policy and procedures should be reviewed annually, or sooner if there are known issues or reasons for modification. The MSIP policy should indicate when and how the MSIP program and related policies and procedures are to be evaluated, and by whom.

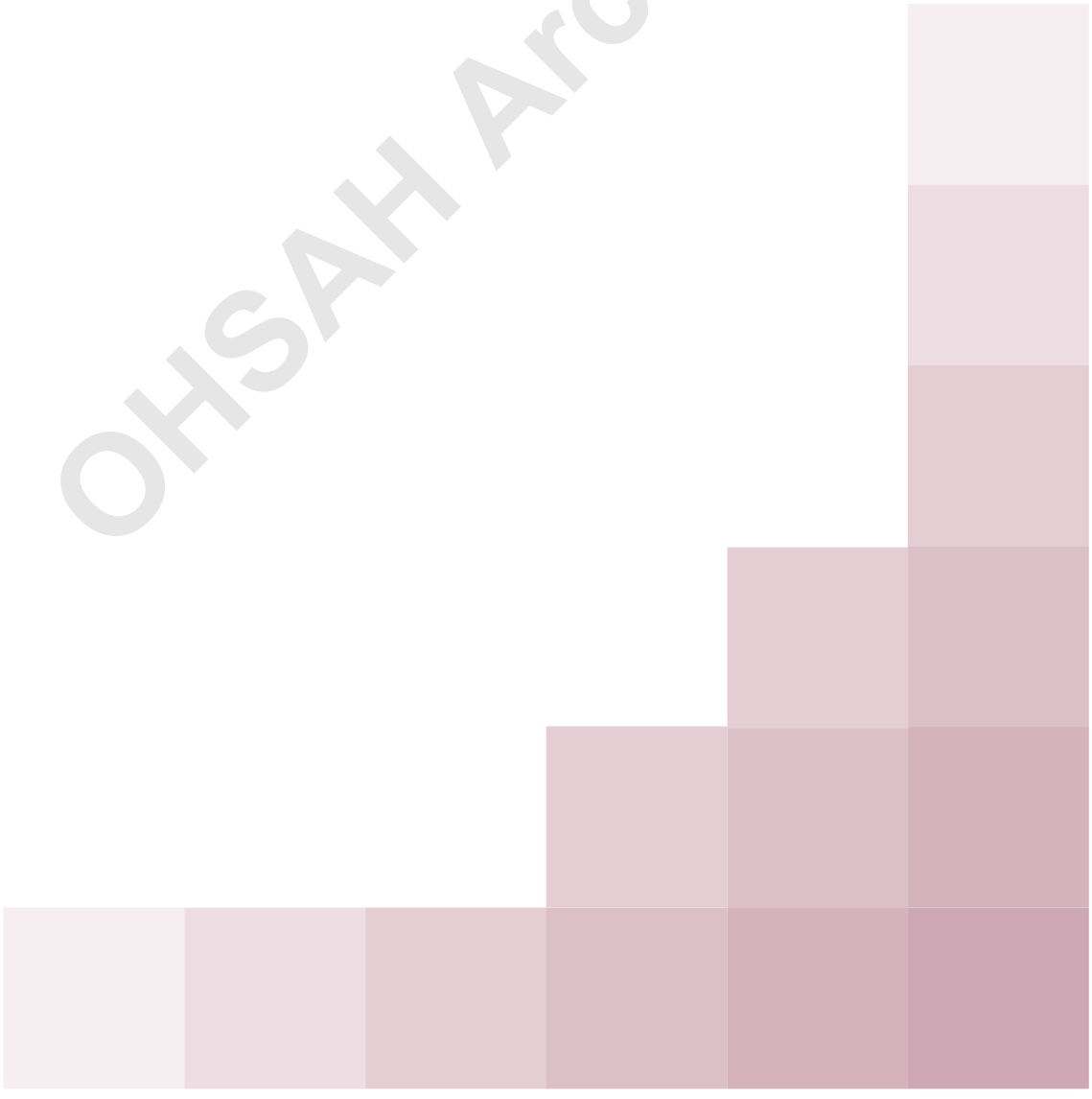
The objectives of policy and procedures reviews include the following:

- Ensure that the stated policy objectives have been met during the past year.
- Identify any discrepancies between stated policies or procedures and actual practices during the past year.
- Determine whether such discrepancies require modifications to policies and procedures or to practices.
- Document what has been accomplished in support of the policy during the past year.
- Identify areas that could be improved in the coming year.
- Ensure that the policy reflects recent changes in the workplace and government legislation.
- Ensure that the policy reflects the current objectives of the MSIP program.
- Ensure that procedures reflect current best practices for MSI risk management.

Part 3

Consultation

In this Part:



3.1 What are the benefits of consultation?

Consultation is an important part of any MSIP program because such programs need the commitment and participation of workers and other stakeholders to be effective. Employers should seek information and advice from workers and committees during the risk management process and involve them in all aspects of the MSIP program.

"MSIP programs need the commitment and participation of workers and other stakeholders to be effective."

Consultation can have many benefits, including the following:

- Worker knowledge of specific jobs and tasks will help improve risk identification and help develop more effective risk controls.
- Workers will have an increased understanding of proposed changes and are more likely to accept them.
- Workers may be more motivated and satisfied with their jobs.
- Joint occupational health and safety committees will help ensure that MSIP initiatives address important issues.

In the Regulation

Section 4.53 — Consultation

(1) The employer must consult with the joint committee or the worker health and safety representative, as applicable, with respect to the following when they are required by the Ergonomics (MSI) Requirements:

- (a) risk identification, assessment and control;
- (b) the content and provision of worker education and training;
- (c) the evaluation of the compliance measures taken.

(2) The employer must, when performing a risk assessment, consult with

- (a) workers with signs or symptoms of MSI, and
- (b) a representative sample of the workers who are required to carry out the work being assessed.

3.2 Who should be consulted?

Consultation may include:

- workers
- joint occupational health and safety committees
- occupational health and safety professionals
- managers
- supervisors
- first aid attendants
- union representatives

3.2.1 Examples of consultation

The following are a few examples of ways in which employers can consult with workers and joint occupational health and safety committees:

- Include workers in the trial and selection process for new equipment and provide feedback during this process.
- Speak directly with the workers who perform the tasks being assessed.
- During regularly scheduled staff meetings, request information from workers regarding MSI concerns or suggestions that may make their jobs safer.
- Survey workers about MSI signs and symptoms related to their work activities.
- Ensure that the MSIP working group liaises with representatives from each department.

3.3 When should consultation occur?

Generally, employers should consult with the facility's joint occupational health and safety committee and MSIP working group throughout the development, implementation, and evaluation of the MSIP program. Workers should be consulted during risk identification and assessment for tasks that those workers perform, during the development of solutions that address the identified issues, and whenever workers report signs and symptoms.

Consultation may be appropriate whenever you need to:

- determine which areas of the facility require risk identification
- establish which risks are more significant and should be prioritized for further assessment
- determine how risk assessments will be conducted
- perform risk assessments for tasks
- develop control measures for identified risks
- purchase or design new workspaces, processes, or equipment
- discuss new information about performing tasks more safely
- evaluate the effectiveness of implemented control measures
- design education and training for workers

"Employers should consult with the facility's joint occupational health and safety committee and MSIP working group throughout the development, implementation, and evaluation of the MSIP program."

3.4 Encouraging worker participation

Employers should encourage workers to participate in all stages of the MSI risk management process. Worker participation will improve if they know that their concerns and suggestions are sincerely valued and they will not face negative consequences for offering suggestions or concerns. Rewarding workers for constructive feedback and ideas may also help improve participation.

"Worker participation will improve if they know that their concerns and suggestions are sincerely valued."

Consider the following guidelines for encouraging worker participation:

- Develop and implement a procedure for workers to provide suggestions or concerns.
- Develop and implement a procedure for workers to report signs and symptoms of MSI.
- Include workers as members of the MSIP working group.
- Allow the MSIP working group to implement recommendations from the analysis process.
- Involve workers in selecting, trialling, and evaluating risk control measures.

3.4.1 Communication between workers and the MSIP working group

Consider the following guidelines to ensure effective communication between workers and the MSIP working group:

- Provide updates on the MSIP program and the program initiatives.
- Post a list of MSIP working group members who can be contacted for further information.
- Conduct a series of presentations for workers about the MSIP program and how they can provide their input.

3.5 Tips for successful consultation

Employers can help ensure that consultation is successful by following these guidelines:

- Provide workers with enough education and training so they will understand the risk management process, understand the questions being asked during consultation, and provide meaningful input.
- Ensure that workers understand why they are being consulted and their role in the consultation process.
- Provide feedback to the people who have been consulted with so they understand how their input has been used. Let them know that their involvement was valued.
- If a concern is raised during consultation, provide a response to workers without delay. If there is a delay, tell the workers why it occurred.
- When implementing control measures, consider comments provided during consultation.
- Ensure that management demonstrates support for the consultation process by encouraging involvement and providing time during work hours for workers to participate.

Part 4

Risk Identification

In this Part:

4.1 What is risk identification?

The purpose of risk identification is to identify the locations and tasks in the facility that pose a risk of MSI to workers. This process involves identifying risk factors that present a possible hazard for injury and prioritizing which of these require further assessment. Further assessment and the development of control measures should focus first on the most significant risks.

In the Regulation

Part 4.47 — Risk identification

The employer must identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MSI).

4.1.1 When should risk identification occur?

Ideally, risk identification should occur proactively (before incidents occur). Proactive risk identification involves reviewing jobs, tasks, and specific activities to determine the presence of risk factors that may indicate a risk of MSI to workers. Proactive risk identification may also include:

- an annual review of jobs within an existing facility
- a review of plans for a new facility or new unit
- a review of risks when introducing new work practices or equipment

Risk identification may also occur reactively (after incidents occur). Reactive risk identification helps establish the risk factors that contributed to an incident so steps can be taken to prevent it from recurring.

What is *significant risk*?

When determining whether or not a risk is significant, consider the likelihood of exposure to the risk factor, the severity of the risk factor, and the severity of a possible resulting injury. Risk factors that are infrequent, small in magnitude, and associated with minor injuries would not be considered significant. Frequently occurring risk factors or risk factors of great magnitude that could result in serious injury would be considered significant.

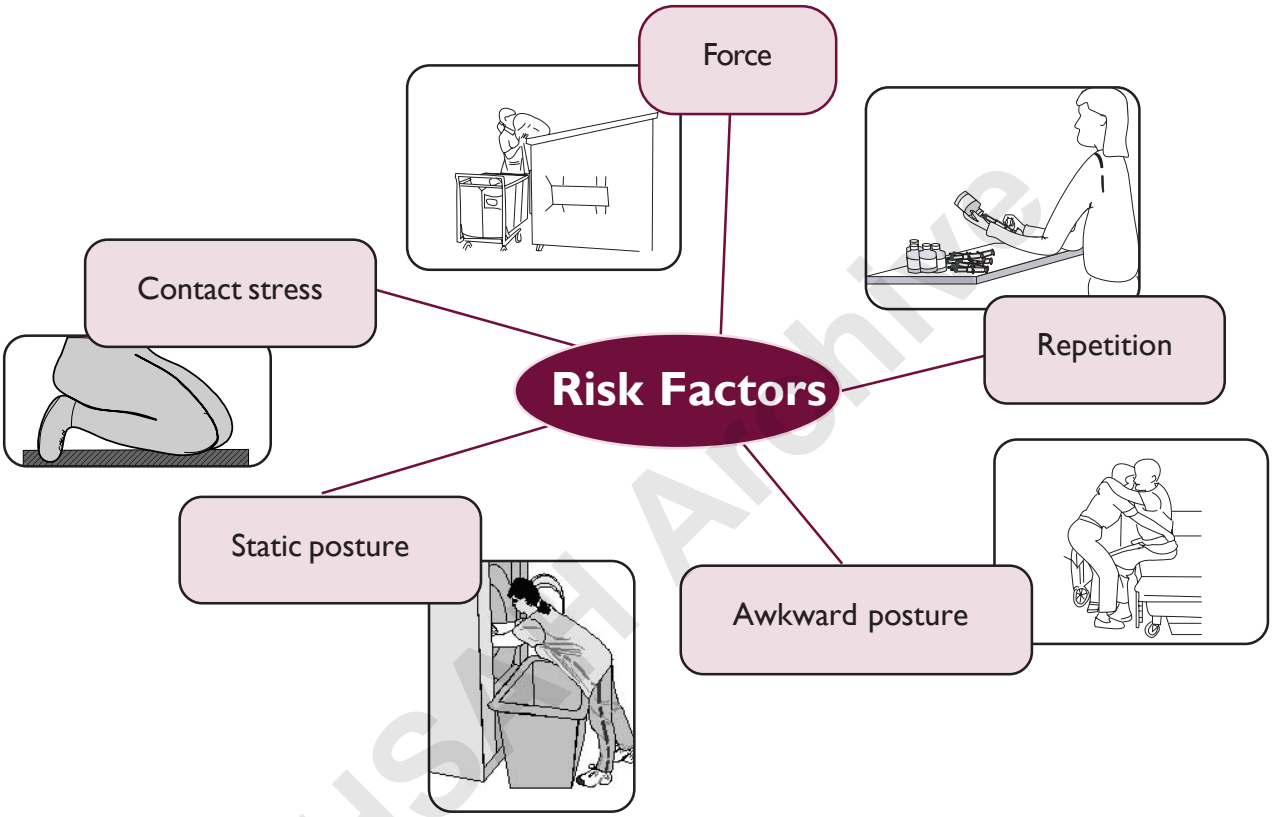
4.1.2 Who should identify risks?

Risk identification should be performed by individuals who are trained to recognize and interpret MSI risk factors, and who are familiar with the jobs, tasks, and activities carried out at the facility. Such individuals usually include occupational health and safety professionals or members of the joint occupational health and safety committee. Those who are not familiar with a specific task should familiarize themselves with the task during the risk identification process.

4.2 Risk factors for MSI

Risk factors are the physical demands of a task that contribute to the overall risk of MSI. The risk factors illustrated in figure 4.1, include force, repetition, awkward posture, static posture, and contact stress. Two or more risk factors can be present at one time, increasing the risk of MSI.

Figure 4.1
The risk factors for MSI



4.2.1 Force

Forceful exertion increases the body's energy demands and physically stresses the muscles, tendons, ligaments, and joints, which increases the risk of injury. For example, lifting a bag of garbage into a dumpster may require forceful exertion of the muscles in the lower back and upper limbs. The level of risk depends on the following variables:

- body parts that are used
- type of grip that is used (for example, a power grip or pinch grip)
- size, shape, and slipperiness of the object being handled
- posture
- type of activity
- temperature
- vibration
- duration of the task
- frequency of the task

4.2.2 Repetition

A repetitive task is a task that uses the same muscles repeatedly. For example, filling syringes with medication may be a repetitive task. The level of risk depends on the following variables:

- frequency of repetition
- time for rest or recovery
- speed of the motion or action
- muscle groups that are involved
- postures required
- amount of force required

4.2.3 Awkward posture

Awkward posture occurs when the body has to work in a position that is not considered neutral. *Neutral postures* are those in which the muscles, tendons, and joints function optimally and require the least amount of effort to maintain. Awkward posture increases the amount of stress on muscles, tendons, ligaments, and joints and is of greatest concern when it is sustained for prolonged periods or combined with other risk factors. For example, transferring a resident between a wheelchair and a bed may result in awkward back and shoulder postures. What is considered awkward may be different for each body part.

4.2.4 Static posture

Static posture is a body position that requires physical effort and is held for a prolonged period. The level of risk that static posture presents depends on the level of muscular exertion and the posture being held. For example, reaching over a laundry bin to pull laundry out of a washer or dryer can place the lower back in a static posture. If muscles do not have enough time to recover from the static posture, they may tire quickly.

4.2.5 Contact stress

Contact stress occurs when body parts come into contact with hard or sharp objects, for example, when kneeling on a hard floor or resting the wrists against a sharp table edge. Contact stress concentrates force on the underlying tissues and interferes with normal blood flow and nerve function. This can result in injury to tissues beneath the skin.

4.3 Other elements that influence risk factors

Various elements can influence risk factors. For example, sometimes workstations, work areas, tools, and equipment are designed without adequate consideration for the people who will use them. Improper work surface heights or poorly designed tools or workstations can result in risk factors for MSI. Table 4.1 lists these elements, describes their influence on the risk factors, and includes examples.

Table 4.1

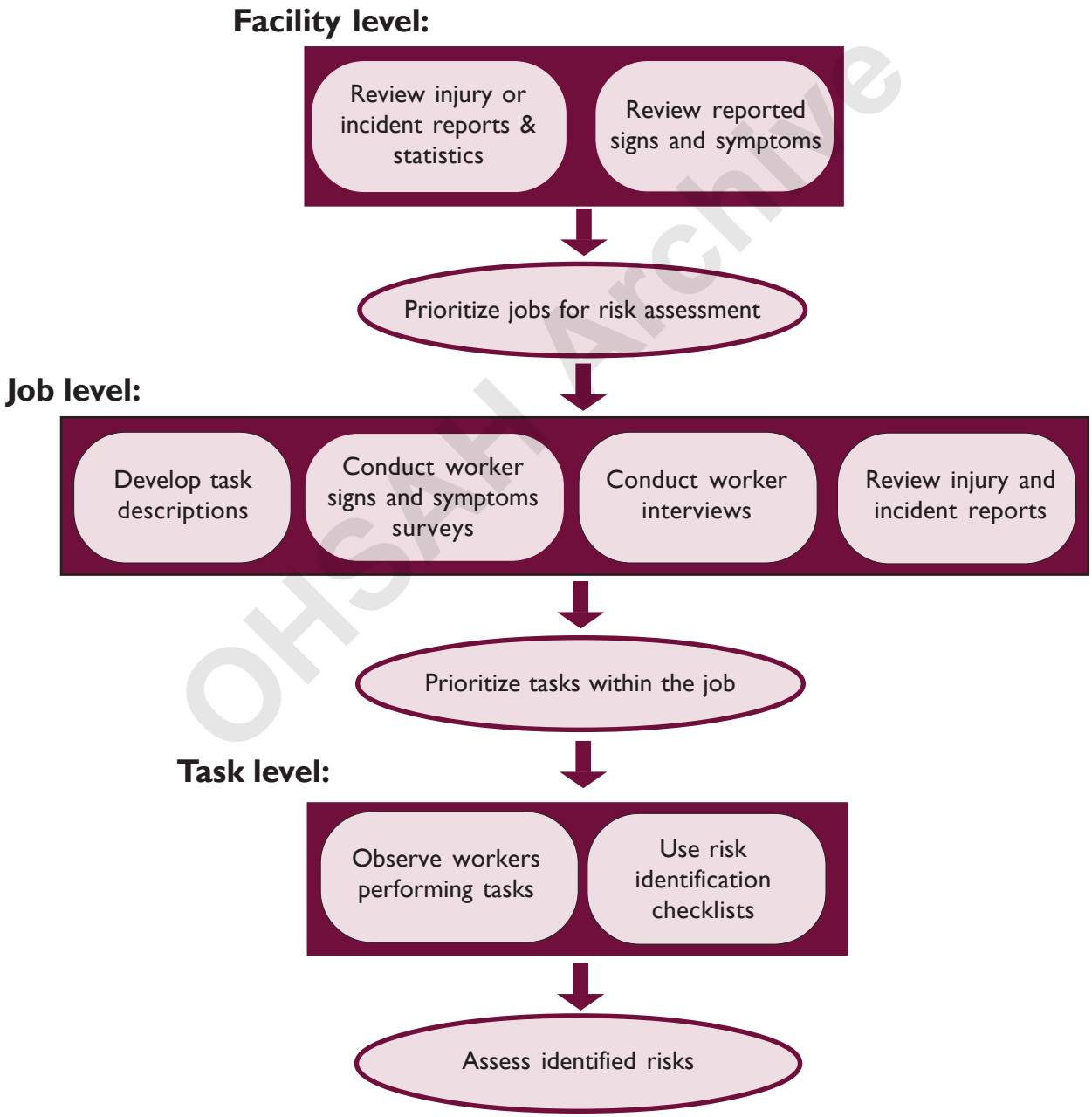
Elements that influence risk factors

Element	Influence	Examples
layout of workplace	• reaching distances • working heights • seating • floor surfaces	• location of patient bed controls • accessibility of heavy objects on storage shelves • use of chairs that are not well suited to the task • uneven transitions from tile to carpet
characteristics of objects handled	• size and shape of loads • load condition and weight distribution • handles on containers, tools, and equipment	• large objects may be awkward to handle • condition of the load or weight distribution may affect the force or degree of posture required • handles may influence the type of grip and force used
environmental conditions of workplace	• temperature • lighting • vibration	• cold temperatures reduce dexterity, which may increase grip force • inadequate lighting may lead to awkward neck posture to improve view of work • hand vibration (for example, when using power tools) may increase grip force
organization of work	• work recovery cycles • task variability • work rate	• pattern of activity and rest may influence repetition • decreased variability increases likelihood of static posture or repetition • task pacing may influence repetition, posture, or force
choices made by workers	• equipment selection • selection of procedures, techniques, and postures • education and training	• condition of equipment (for example, a cart) may influence the force required to use it • safe procedures, techniques, and postures will decrease risks • participation in MSI education and training may influence health and safety choices

4.4 Three levels of risk identification

Considering risks at three different levels can help save time during the risk identification process by establishing the areas at each level that pose significant risks and require further analysis and assessment. This process starts at the facility level, then moves to the job level, and finally focuses in on the task level. Figure 4.2 illustrates these three levels and the steps that can be taken at each level to identify significant risks.

Figure 4.2
Identifying significant risks at three levels



4.5 Risk identification at the facility level

At the facility level, risk identification is concerned with determining which departments have the greatest incidence of MSI. Two methods for identifying risks at this level are reviewing injury or incident reports and statistics; and reviewing signs and symptoms of MSI that have been reported by workers. Figure 4.3 illustrates the possible sources of information that will help prioritize departments for further analysis and risk management efforts. Conclusions will be stronger if the data used for prioritization represent several years.

Figure 4.3

Information sources that can help prioritize departments for further analysis

4.5.1 Reviewing injury or incident reports and statistics

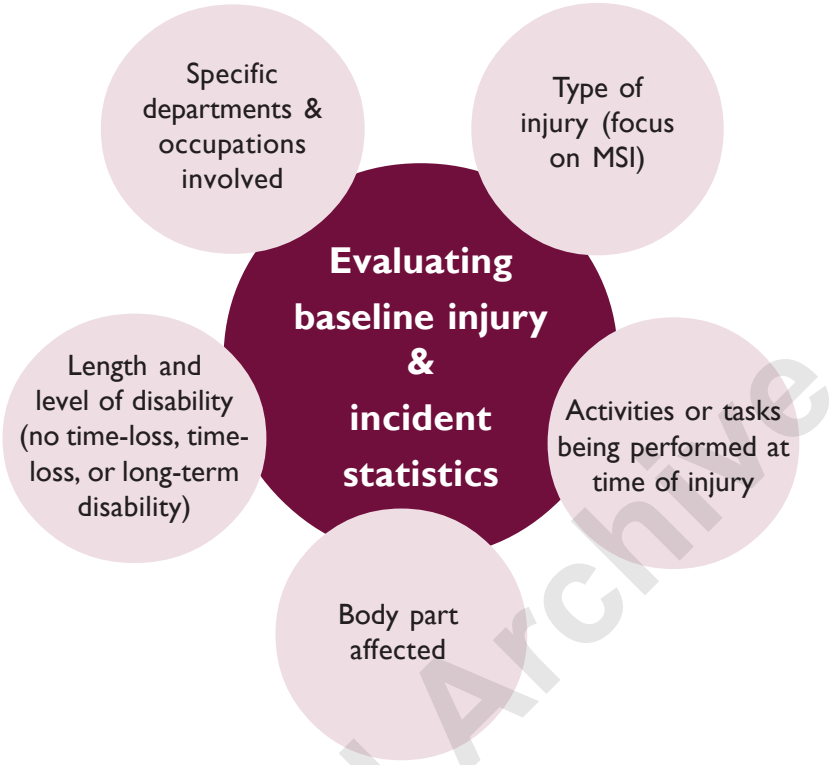
Departments where workers have previously reported signs and symptoms of MSI may present significant risks. Review injury or incident reports and statistics to determine which departments have higher risks. The level of risk is usually expressed as a rate of injury or incident per 100 full-time equivalent (FTE) workers.

Evaluate baseline injury and incident statistics

Baseline injury and incident statistics help determine the type and frequency of MSI in the workplace. Collect detailed information from incident reports, WCB claims cost databases, first aid reports, and payroll reports to determine what specific departments within a facility need to be assessed in greater detail.

Figure 4.4

Categories for evaluating baseline injury and incident statistics



Calculating injury and incident rates

Calculating injury and incident rates is a useful way to compare the level of risk between departments and to track performance from year to year. It is common to express injury and incident rates relative to 100 full-time worker years (200,000 work hours) — or 100 FTE workers — using one of the following two equations.

Equation 1

$$\frac{\text{number of injuries in past year} \times 100}{\text{number of FTE} + (\text{[number of overtime hours worked in past year} \div 200{,}000] \times 100)} = \text{number of injuries per 100 FTE}$$

Equation 2

$$\frac{\text{number of injuries in past year} \times 200{,}000}{\text{number of hours worked in past year} + \text{number of overtime hours worked in past year}} = \text{number of injuries per 100 FTE}$$

Both equations will give the number of injuries per 100 FTE. The inclusion of overtime hours provides a more accurate representation of the injury rate per 100 FTE. Which equation is best for a facility depends on how the facility maintains human resources data.

Examples of injury and incident rate calculation

A healthcare facility has recorded 23 injuries during the past year. During that year there were 175 workers, or 350,000 hours worked (175 workers x 2,000 hours = 350,000 hours). There were also 50,000 hours of overtime worked.

Using equation 1

$$\frac{23 \times 100}{175 + ([50{,}000 \div 200{,}000] \times 100)} = 11.5 \text{ injuries per 100 FTE}$$

Using equation 2

$$\frac{23 \times 200{,}000}{(350{,}000 + 50{,}000)} = 11.5 \text{ injuries per 100 FTE}$$

4.5.2 Reviewing reported signs and symptoms

Reviewing reported signs and symptoms of MSI can help determine which departments have the greatest incidence of MSI. In some cases, workers may self-report signs and symptoms to their supervisors or managers. The facility can also collect this information from workers using signs and symptoms surveys or interviews. For more information on surveys and interviews, see Section 4.6.2, "Conducting worker signs and symptoms surveys," page 44, and Section 4.6.3, "Conducting worker interviews," page 45. Reported signs and symptoms can be expressed the same way that injury or incident rates are, using a rate of signs and symptoms per 100 FTE.

4.6 Risk identification at the job level

Once you have determined which departments have significant risks, look at specific jobs to determine which ones pose the greatest risks of MSI. Consider the following methods for identifying jobs that pose significant risks:

- Develop a task description for each job.
- Conduct worker signs and symptoms surveys.
- Conduct worker interviews.
- Review injury and incident records.

4.6.1 Developing task descriptions

The first step in identifying risks at the job level is to compile a descriptive list of all the tasks that are required to perform the job. Ask the question: What does the worker do in this job? A task list will help ensure that all tasks are considered and that risk identification for individual tasks is viewed within the context of the entire job.

A task description should include, at a minimum, a list of tasks performed in the job and the typical frequency and duration of the tasks. Try checking formal job descriptions for lists of specific job duties. A formal job description, however, may not provide an accurate representation of the actual duties and tasks for a given job, so it is important to consult with supervisors and workers to ensure that the task list is complete.

4.6.2 Conducting worker signs and symptoms surveys

Surveys can be useful for collecting information about the signs or symptoms of MSI that workers may have experienced and the factors that they attribute to causing the signs or symptoms. Signs and symptoms surveys can help elicit information from workers who may not otherwise report signs or symptoms that they have experienced.

Consider the following guidelines for administering signs and symptoms surveys:

- Inform workers that completion of the surveys is voluntary.
- Give workers the choice to comment openly or anonymously, but encourage them to identify themselves to allow for follow-up regarding their particular situations.
- Ask workers to indicate their job titles and the tasks or areas that they believe contributed to the signs or symptoms. This will help you prioritize further actions.
- Administer surveys in group settings to reach a larger number of workers and to make it easier to respond to questions that may arise.
- Allow workers work time to fill out surveys.
- Ensure that workers complete and return surveys even if they are not experiencing any signs or symptoms.

Resources in this guide

- Appendix 6: Signs and symptoms survey, page 136

Table 4.2

Advantages and disadvantages of a signs and symptoms survey

Advantages	Disadvantages
• easy and inexpensive to administer • quick way to characterize workers' perceptions • provides information on the organization's health status • identifies problems that may otherwise go unreported • uncovers significant issues related to storage, staffing levels, lack of proper equipment, and equipment maintenance and repair • provides an opportunity to educate workers about risk factors and signs and symptoms of MSI	• depends on the respondent to be thorough and honest • depends on the respondent to complete and return the survey • takes expertise to design, analyze, and interpret surveys

4.6.3 Conducting worker interviews

Informal or formal interviews with workers can be a useful way to gather information about jobs and specific tasks that may require assessment. You may conduct interviews with individual workers or small groups. It is advantageous to approach worker interviews or discussions with questions that are simple, clear, and possibly the same as those asked in a signs and symptoms survey.

Table 4.3

Advantages and disadvantages of a worker interview

Advantages	Disadvantages
• interviewer can respond quickly to questions or concerns • interviewer can explore specific issues in depth • interviewer can ensure that workers understand the questions • interviewer can offer immediate feedback • one-on-one contact with workers may result in a high response rate	• requires skill, time, and involvement from interviewer • requires effort to record and document findings

4.6.4 Reviewing injury and incident reports

If a job was prioritized during risk identification at the facility level, a further examination of injury and incident reports should be conducted for that particular job. This review should provide the following information:

- the body parts affected
- the nature of the injury
- the task or specific activity that was associated with the injury
- MSI risk factors that may have been present at the time of injury
- other contributing factors that may have been associated with the injury

Reviewing injury and incident reports for specific jobs will help you prioritize the tasks that will require a more in-depth analysis.

4.7 Risk identification at the task level

After identifying risks at the facility and job levels, you will be ready to identify risk factors at the task level. Consider the following methods for identifying risk factors within specific tasks:

- Observe workers performing tasks.
- Use risk identification checklists.

4.7.1 Observing workers performing tasks

Observe workers performing specific tasks to better understand job and task descriptions, as well as to document risk factors associated with each task. Observation often provides an opportunity to consult with workers and gather information regarding their experience and perception of risk. It may be helpful to use risk identification checklists while observing workers.

4.7.2 Using risk identification checklists

Risk identification checklists provide an orderly procedure for determining the risk factors that may be present in a task. It is important to observe a representative number of workers to determine whether or not workers perform the task in the same manner and experience the same risk factors. The way that a task is performed may be influenced by:

- the worker's size or stature
- the worker's level of experience or skill
- situational variation in the work environment

Observing a single worker may not provide an accurate idea of how other workers perform the task and all the possible risk factors associated with the task.

There are numerous risk identification checklists available. Choosing the most appropriate one may be difficult. In fact, a generic checklist may not be appropriate for all the tasks at the facility. You may need to customize a checklist to suit a particular task. Make sure that the checklist covers the risk factors described in Section 4.2.

Checklists should generally be used for risk identification. Persons who are familiar with the task involved in the identification are usually able to provide more accurate information and should be consulted during the process of identifying risk factors.

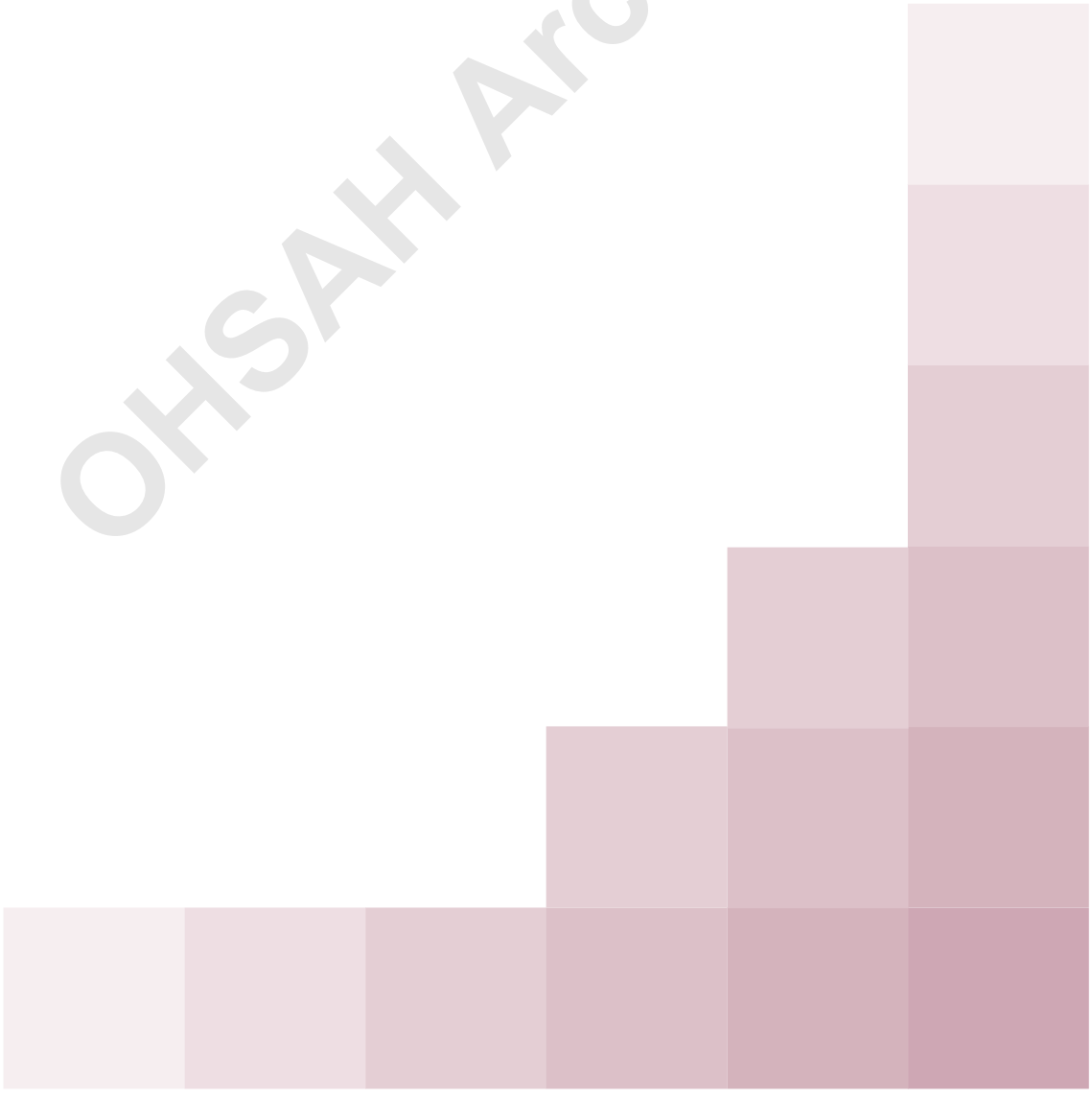
Resources in this guide

- Appendix 7: Risk factor identification and assessment checklists, page 138

Part 5

Risk Assessment

In this Part:



5.1 What is risk assessment?

Once risks have been identified for a specific task, they need to be assessed to determine the degree of risk present and what types of control measures should be implemented. Risk assessments are usually performed only for those tasks that have been identified as presenting significant risks of MSI.

The specific methods used to perform a risk assessment will depend on the issues of interest, the skill and training of the assessor, and the resources that are available. MSI risk assessment involves quantifying the significant risk factors associated with higher-risk tasks to understand why those risk factors exist and how they can be eliminated or minimized.

A thorough risk assessment may include the following steps:

- Conduct detailed job observations to thoroughly understand work processes, work-rest cycles, and variability in work patterns.
- Measure risk factors (e.g. force, repetition, and awkward posture) and elements that influence risk factors (e.g. vibration levels and temperature).
- Compare measurements with ergonomics guidelines and standards.
- Review existing control measures or historical attempts to control risks.
- Hold brainstorming sessions to discuss identified issues.

In the Regulation

Part 4.48 — Risk assessment

When factors that may expose workers to a risk of MSI have been identified, the employer must ensure that the risk to workers is assessed.

5.1.2 Who should assess risks?

Risk assessment should be performed by individuals who:

- are trained to recognize and quantify the MSI risk factors of a task
- understand how risk factors correspond to MSI
- recognize viable options for eliminating or minimizing risks

Previous knowledge of the job, tasks, and equipment is helpful but not required. Individuals who are not familiar with a specific job or task should familiarize themselves with it during the assessment. The facility may need to seek external assistance if there are limited MSIP resources and the tasks being assessed are complex.

5.2 Focussing on significant risks

Risk factors need to be assessed for risks that were identified as significant during the risk identification process. During risk identification, a task list should have been generated for each job. This task list and the risks identified for each task on the list are important for guiding the risk assessment process.

"A task list and the risks identified for each task on the list are important for guiding the risk assessment process."

Risk assessments should focus on tasks that:

- have a high incidence of injury
- have a high rate or severity of reported signs or symptoms of MSI
- present extreme levels of any individual risk factor
- present multiple risk factors

Tasks that pose significant risks should be made higher priority if they:

- influence a large number of workers
- occur frequently or last a long time
- are in areas where changes are planned (e.g. new work processes or renovations)

5.3 Assessing exposure to risk factors

There are four elements to consider when assessing significant risks:

- magnitude of each risk factor (how much?)
- frequency of exposure to each risk factor (how often?)
- duration of exposure to each risk factor (how long?)
- presence of multiple risk factors

5.3.1 Magnitude

Magnitude quantifies how much of a particular risk factor such as force is present. For example, lifting a 25-kg box requires more force than lifting a 10-kg box. The specific method of quantifying magnitude will depend on the risk factor and the circumstances in which the assessment is being performed.

5.3.2 Frequency

Frequency quantifies how often a worker is exposed to a particular risk factor. For example, a worker who is exposed to a risk factor once per week has a lower risk of injury than a worker who is exposed to the same risk factor once per hour.

5.3.3 Duration

Duration quantifies how long a worker is exposed to a risk factor in a given period. Increasing the length of time that a worker is exposed to a risk factor may increase the risk of injury. For example, a worker exposed to a risk factor for two hours may have more risk of injury than a worker exposed to the same risk factor for ten minutes.

5.3.4 Presence of multiple risk factors

Evidence suggests that exposure of the same body segment to multiple risk factors within a task significantly increases the risk of MSI compared to exposure to a single risk factor. An example of the presence of multiple risk factors is a task that requires a forceful hand grip with the wrist in an awkward posture that must be sustained for several minutes. A risk assessment should consider the combined effect the risk factors have on a worker.

5.4 Risk assessment aids

Various equipment and tools exist for collecting information during a risk assessment. There are also a number of procedures and techniques you can use to ensure an effective assessment. The specific approach you use will depend on the objectives of the assessment, the variables that need quantifying (e.g. risk factor magnitude), the availability of measurement equipment, and the skills and knowledge of the assessor.

5.4.1 Equipment and tools

Equipment and tools that may be useful during a risk assessment include the following:

- video camera
- tape measure
- timer or stopwatch
- scale
- force gauge or spring scale
- light meter
- thermometer

5.4.2 Procedures and techniques

Consider using the following procedures and techniques to collect information:

- Use questionnaires to survey or interview workers.
- Observe workers performing the tasks.
- Videotape workers to document observations and analyze posture or timing in more detail.
- Photograph elements such as workstation layout, work environment, or postures to illustrate the task.
- Measure workstation variables such as weights, heights, distances, forces, and postures.
- Measure environmental conditions such as heat, cold, or lighting.
- Compare current job demands with ergonomics guidelines and standards.

Resources in this guide

- Appendix 7: Risk factor identification and assessment checklists, page 138
- Appendix 8: Techniques for videotaping, page 164

5.5 Writing a risk assessment summary

A risk assessment should include a detailed written summary that describes and quantifies the risks associated with the task.

5.5.1 What should a summary include?

Follow these basic guidelines when compiling information for a risk assessment summary:

- Describe significant risk factors (see Section 4.2, "Risk factors for MSI," page 37).
- Indicate whether or not there are extreme levels of any single risk factor.
- Indicate whether or not there are multiple risk factors.
- Provide a description of the other elements that contribute to the risk factors (see Section 4.3, "Other elements that affect risk factors," page 39).

It is important to write down risk assessments. This will ensure that you have a historical record that can be referred to during:

- future risk assessments
- evaluation of the effectiveness of control measures
- review of the MSIP program

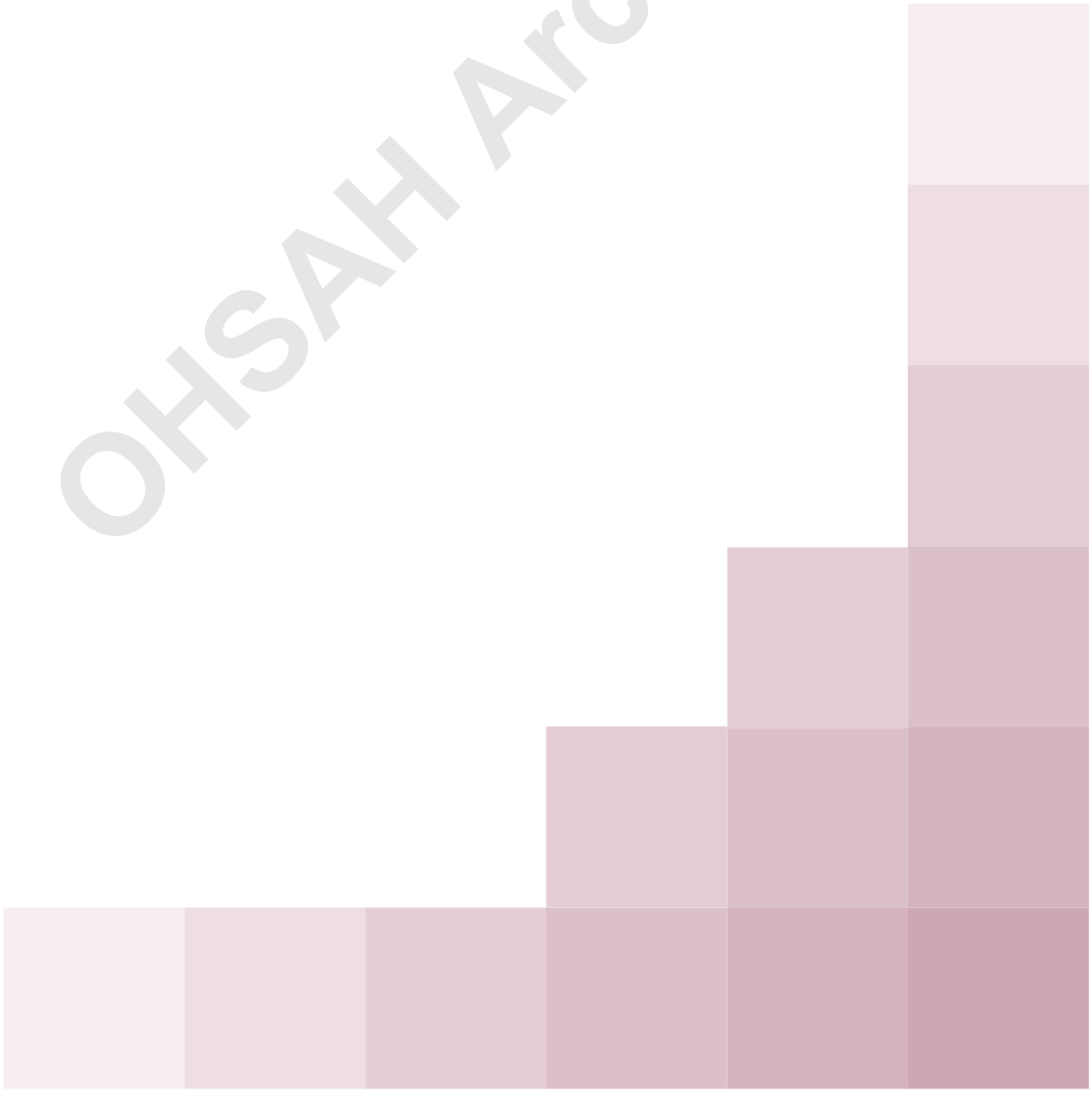
5.5.2 How detailed should a summary be?

The detail required depends on the complexity of the assessment. Documentation of the risk assessment process should provide enough detail for someone who is external to the MSIP program to understand why and how the risk assessment was performed and what the outcomes were.

Part 6

Risk Control

In this Part:



6.1 What is risk control?

The purpose of risk control is to eliminate or, if that is not feasible, minimize significant risks by developing and implementing control measures. Control measures may require the allocation of personnel and financial resources. The organization will also need to document and communicate decisions about which controls should be implemented, the order of implementation, and who is responsible for overseeing each implementation.

In the Regulation

Part 4.50 — Risk control

(1) The employer must eliminate or, if that is not practicable, minimize the risk of MSI to workers.

(2) Personal protective equipment may only be used as a substitute for engineering or administrative controls if it is used in circumstances in which those controls are not practicable.

(3) The employer must, without delay, implement interim control measures when the introduction of permanent control measures will be delayed.

6.1.1 Who should develop and implement control measures?

The MSIP working group and the joint occupational health and safety committee should be involved in the development and implementation of control strategies. It can also be extremely valuable during the process to involve the purchasing, facility maintenance, and operations or human resources departments. This will encourage the use of their expertise in the development of controls and help ensure that proposed changes are consistent with the practices of those departments.

Workers who will be affected by the controls should also be a part of the development process to ensure that proposed changes will result in work practices that are likely to succeed. Including workers will also help gain their acceptance of workplace or process modifications. For more information, see Part 3, "Consultation," page 29.

6.2 Types of control measures

Risk control measures generally fall into one of the three categories illustrated in Figure 6.1. Whenever possible, engineering controls or administrative controls should be used first to eliminate or minimize risks. If those types of controls are not feasible, personal protective equipment (PPE) can be considered as a control measure.

There are usually a variety of control measures that may be considered to address a specific problem. In some cases, one control measure may address multiple risk factors; in other cases several control measures will be needed to control one risk factor.

MSI risk control measures may include:

- new tools or equipment
- maintenance or repair of existing tools or equipment
- redesign or reconfiguration of workstations
- rearrangement of work area layout
- redesign of the work process
- development of revised procedures for performing tasks
- education and training

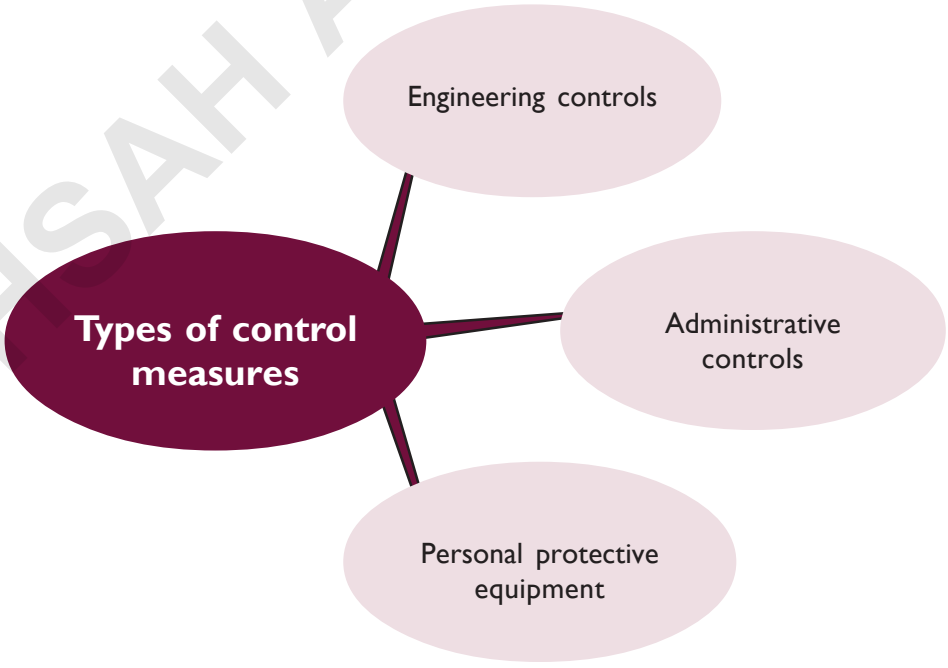


Figure 6.1
Three types of control measures

6.2.1 Engineering controls

Engineering controls are physical changes to the work environment. Engineering controls may include alterations to:

- equipment or tools
- workstations
- workspaces
- materials
- environmental conditions

Well-designed engineering controls are effective because they provide permanent solutions that address risk factors at the source. This minimizes reliance on workers to select safe behaviours over unsafe ones. Engineering controls need not be costly. They are usually more effective than other control strategies and are therefore likely to have the greatest impact on injury cost reduction.

The following are examples of engineering controls:

- Provide height-adjustable workstations and chairs.
- Insert false bottoms in deep kitchen sinks to raise working heights and minimize the need to bend forward.
- Insert spring-loaded bottoms into laundry bins so that laundry is forced upward as the amount in the bin decreases, which will reduce bending at the waist.
- Remove all shelves above shoulder height in storage areas to minimize reaches for items.
- Use ceiling lifts rather than manually lifting patients.
- Use automixers rather than syringes to prepare medications.

Engineering controls may take time to implement and may need to be supported by administrative controls to be fully effective. If there is any delay in implementing engineering controls, interim controls must be implemented without delay.

"Well-designed engineering controls are effective because they provide permanent solutions that address risk factors at the source."

6.2.2 Administrative controls

Administrative controls are changes in the way work is performed or the organizational factors that support the way work is performed. Administrative controls eliminate or minimize risks by reducing workers' exposure to risk factors without making physical changes to the work environment.

Administrative controls may initially cost less than engineering controls. However, they often rely on changes in worker behaviour or technique and may require ongoing supervision and reinforcement to eliminate or minimize risk factors. Administrative controls may be necessary when engineering controls are delayed or cannot be implemented.

"Administrative controls may be necessary when engineering controls are delayed or cannot be implemented."

The following are examples of administrative controls:

- Match staffing levels to workloads.
- Changes in procedure or protocols.
- Modify housekeeping or maintenance practices. For example, implement a preventative maintenance program for laundry carts.
- Ensure adequate rest during shifts and between shifts.
- Develop and communicate safe work practices.
- Educate and train workers.

Job rotation and job enlargement

Administrative controls may include using job rotation or job enlargement to change how work is organized. Job rotation provides variety by scheduling rotation between tasks with different physical or cognitive demands. For example, alternate filing and paperwork with typing.

Job enlargement may involve adding new tasks to worker duties to increase the worker's level of responsibility (for example, adding to a server's responsibilities in the kitchen by having them ensure that the products on the food tray match the order). Job enlargement may also involve increasing job variety (for example, adding inventory of cleaning supplies to housekeeping duties).

Sample safe work practice

The following safe work practice for patient handling is adapted from the Vancouver Island Health Authority MSIP Program (August 2003).

Resident pre-handling assessment

Suitable for: Every handling situation

Performed by: The caregiver

When a transfer or reposition is necessary, the caregiver should conduct a pre-handling assessment because the functional capabilities of a resident may vary throughout the day or depending on the activity. A pre-handling assessment will help ensure the safety of the resident and caregiver. Residents should always be transferred or repositioned according to the care plan.

The caregiver should evaluate the basic physical capacity of the resident to confirm that the handling recommendations in the care plan are still safe to perform. If there is any doubt, the caregiver should have the skills and authority to use the safest appropriate handling method to minimize the risk of injury to the caregiver and the resident (for example, use a mechanical lift). Ultimately, the caregiver is responsible for performing the safest method of handling. The supervisor should be informed if the resident's behavior is continually unpredictable and appropriate actions should be taken to eliminate or minimize the risk to workers and residents.

The pre-handling assessment considers four elements:

6.2.3 Personal protective equipment (PPE)

Note: Splints and braces (for example, back belts and wrist braces) are not considered PPE. They should only be used by workers under the advice and supervision of a medical professional.

Personal protective equipment (PPE) is any physical device that a worker wears to protect against risk factors. PPE generally should not be considered a long-term control. It should only be used as a last resort to reduce exposure to risks until engineering or administrative controls can be implemented or as a control measure where engineering or administrative controls are not feasible or ineffective.

PPE may include:

- knee and elbow pads
- gloves
- laboratory coats or coveralls

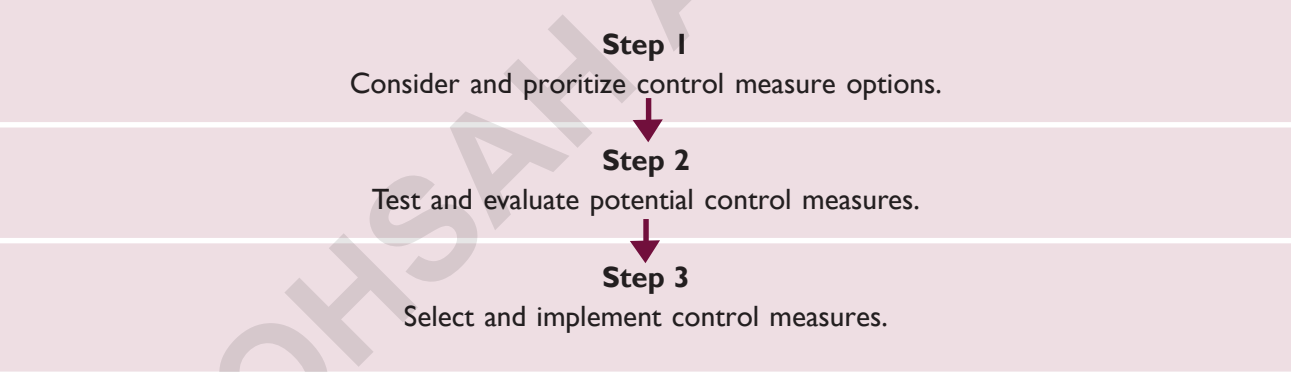
6.3 Developing and implementing control measures

It is important to make informed choices during the development and implementation of control measures. You can do so in the early stages of the process by involving:

- workers
- engineers
- purchasers
- managers
- maintenance workers

Scheduled design changes (e.g. renovation or construction) and planned purchases of equipment, workstations, or tools provide opportunities to implement controls at little or no additional cost. It is usually more costly and time consuming to make changes to workspaces or equipment after they have been constructed or purchased. For more information, see Section 8.6, "Designing and renovating facilities," page 87. Figure 6.2 illustrates the basic steps involved in developing and implementing control measures.

Figure 6.2
The development and implementation process



6.3.1 Considering and prioritizing options

Before deciding which control measures to implement, consider a range of options. The best solutions are not necessarily the first ones that come to mind. Consult everyone involved and ensure that they participate in the development and selection of control measure options. Ensure that possible control measures will address the identified risk factors and the underlying causes of those risk factors.

Guidelines for developing options

Consider the following guidelines for developing options for control measures:

- Discuss control options with potential product vendors.
- Look through equipment and product catalogues.
- Contact facilities that are a similar size or that have a similar process in place to see how they have controlled risk factors.
- Consult with a health authority expert or an external expert.

Guidelines for reviewing and prioritizing options

Ask the following questions when reviewing and prioritizing options:

- Will this control measure eliminate or minimize the identified risk factor?
- Will this control measure create any new risk factors?
- Will this control measure affect productivity or efficiency?
- Is this control measure achievable and obtainable?
- Is this control measure appropriate for the work being performed?
- Is this control measure reasonable from a financial perspective?
- How will this control measure affect the pace or volume of work?
- Will workers accept this control measure?
- Will this control measure positively affect worker morale?
- Will this control measure be fully implemented in a reasonable amount of time?
- What type of education and training will this control measure require?
- Can the control measure be tested before full implementation?
- Is this control measure a short-term solution or a long-term solution?

Evaluating costs and potential benefits

Try slotting control measure options into Table 6.1, based on anticipated costs (either money or resources) and potential benefits. This will help identify which controls should be priorities for short-term and long-term implementation. For example, a high-cost control measure that will provide low benefits is a low priority. On the other hand, a low-cost control measure that will provide high benefits may be appropriate.

Table 6.1

Evaluating control measures based on costs and potential benefits

	Low benefits	High benefits
Low costs	possible appropriate control measure	high-priority control measure
High costs	low-priority control measure	possible appropriate control measure

6.3.2 Testing and evaluating potential control measures

"Involving workers is vital to gauge the potential success of control measures."

Once you have picked a potential control measure, conduct a trial and evaluate the results. Testing and evaluating control measures should occur before they have been fully implemented to ensure that they will address risk factors adequately. This is an opportunity to fine-tune controls and identify further modifications that may be needed to ensure the success of the control.

Involving workers is vital to gauge the potential success of control measures. Obtain worker input and feedback throughout the testing and evaluation process. This will help determine whether control measures are likely to work and will provide an opportunity to gauge worker acceptance. Workers may also have ideas on how to improve control measures.

Methods for testing and evaluation

Consider the following methods for testing and evaluating potential control measures:

- Create mock-ups of the proposed control measures and obtain worker feedback.
- Work with vendors and the purchasing department to trial products such as equipment or workstations before committing to purchases.
- Test and implement control measures in a single job or task before applying them throughout the department or facility.
- Introduce control measures parallel to the existing process so workers can trial the control measures at intervals during the workday while still performing most of their work within the existing system.
- Observe and consult with other facilities or departments that have implemented the same controls.

Modifying control measures

After the initial testing and evaluation, the control measures may need to be modified. Modified control measures should be tested and evaluated again to determine whether or not the modifications addressed the identified issues. It is important to ensure that the workers affected by the control measures are satisfied with the changes.

6.3.3 Implementing control measures

Once the final control measure has been decided upon, implement it in a timely manner. Delays may result in preventable injuries. If there will be a delay in implementing a long-term control measure, an interim control measure is required to ensure that the risk to workers is minimized in the short term.

"Delays in implementing control measures may result in preventable injuries."

Consider the following guidelines for implementation:

- Assign individuals to oversee the implementation process.
- Assign individuals to implement the control measures.
- Create a timeline for implementation.
- Consider the logistics of implementing the control measures.
- Educate workers on the risks that are being addressed and the anticipated benefits of the control measures.
- Educate and train workers on how to use the control measures competently.

The MSIP working group and joint occupational health and safety committee should stay involved during implementation and follow-up evaluation to ensure that controls:

- are implemented as planned
- address the identified risk factors
- do not create new risks
- are accepted by workers as intended

6.4 Evaluating implemented control measures

Evaluating control measures after implementation is necessary to ensure that the identified risk factors have been eliminated or minimized and that no new risk factors have been created. These follow-up evaluations may also identify ways to further improve the effectiveness of control measures. Evaluations should be documented and compiled for future reference.

For the evaluation of the control measures, use the same procedures and assessment tools that were used during identification and assessment of the risk factors. For example, use the same risk identification checklists, signs and symptoms surveys, worker interviews, and incident report reviews. It may also be prudent to consider both short-term and long-term indicators of success when evaluating controls.

"Evaluating control measures is necessary to ensure that the identified risk factors have been eliminated or minimized and that no new risk factors have been created."

6.4.1 Short-term indicators of effectiveness

Short-term indicators of the effectiveness of control measures may include:

- a reduction in the magnitude of risk factors
- a reduction in the duration or frequency of exposure to risk factors
- a reduction in signs and symptoms of MSI
- positive worker opinion regarding the changes
- use of the control measures by workers
- an increase in worker morale and satisfaction

6.4.2 Long-term indicators of effectiveness

Long-term indicators of the effectiveness of control measures may include:

- a reduction in the incidence of MSI
- a reduction in the number of time-loss days
- an increase in productivity or quality of work
- a reduction in job turnover or absenteeism
- continued use of the control measures by workers
- an increase in worker morale and satisfaction

6.4.3 Allowing for adaptation by workers

It may take some time after implementation for workers to fully adapt to administrative or engineering controls. Some modifications may require workers to use different muscle groups or body parts and they may experience some temporary muscle fatigue or soreness for a short period after implementation.

Evaluations during the first few weeks should focus on whether or not the controls have been implemented as planned. Assessment of worker signs or symptoms may have to wait until several weeks to several months after implementation to allow workers to physically adapt to the changes. A comprehensive follow-up evaluation that includes incident reporting may require many months or years to obtain enough data for meaningful comparisons. However, it is a good idea to check in with workers periodically regarding control measures and any related issues.

6.4.4 Guidelines for evaluating control measures

Consider the following questions when evaluating control measures:

- Has enough time elapsed for the worker to adjust to the control measure?
- Has the worker been provided with adequate education and training?
- Has the control measure eliminated or reduced the risk factors?
- Have any new risk factors resulted from the control measure?
- Has the control measure been cost effective?
- Was the control measure incorporated within a reasonable amount of time?
- Are there other workers or jobs that could benefit from this control measure?

If the risk factors have not been adequately addressed by the implemented control measure, alternative control strategies should be developed and implemented.

Part 7

Education & Training

In this Part:

7.1 What is MSIP education and training?

The aim of MSIP education and training is to ensure that workers, supervisors, members of MSIP working groups, purchasing departments, and facilities departments know about MSI and MSIP programs, including their roles and responsibilities. Those responsible for implementing the program must have appropriate education and training to provide them with the knowledge and skills they need to make the program a success. This includes the ability to perform or facilitate the risk management process (consultation, identification, assessment, control, and evaluation). Educating and training workers is also critical to the success of a program as well as for building a culture of safety in the workplace.

In the Regulation

Part 4.51 — Education and training

(1) The employer must ensure that a worker who may be exposed to a risk of MSI is educated in risk identification related to the work, including the recognition of early signs and symptoms of MSIs and their potential health effects.

(2) The employer must ensure that a worker to be assigned to work which requires specific measures to control the risk of MSI is trained in the use of those measures, including, where applicable, work procedures, mechanical aids and personal protective equipment.

7.1.1 Education

MSIP education is the development of general MSIP knowledge that often takes place in a classroom setting. It builds the learner's comprehension about MSIP and may be followed by a written test to determine retention. At a minimum, MSIP education should include:

- early signs and symptoms of MSI
- potential health effects of MSI
- risk factors associated with the tasks being performed
- basic control measures to eliminate or minimize risk

Education has more influence on behaviours when supported by training. MSIP is most effective when education and training accompany engineering or administrative control measures.

7.1.2 Training

MSIP training develops skills that build on the knowledge gained during education. It uses a hands-on approach, typically in the field or in a simulated setting. Trainees have an opportunity to practise techniques and demonstrate that they are able to perform them skillfully. Training helps make the transfer of knowledge from educational sessions to everyday activities easier.

7.2 Who should receive education and training?

Education and training requirements will vary for workers, supervisors, managers, MSIP working groups, and purchasing and facilities departments.

7.2.1 Workers

Workers require specific knowledge and skills to perform their work safely and to minimize the risk of injury to themselves and their co-workers. Existing workers should receive education and training updates at least annually to provide them with new knowledge and refresh their skills. New workers and newly transferred workers should receive MSIP education and training as part of their orientations. Further education and training is warranted whenever there is a change in equipment or procedures. Education and training may also be warranted if injury or incident rates increase, or if a worker has been off work for more than 30 days.

7.2.2 Supervisors

Supervisors should receive education and training similar to that of their workers so they can recognize risks and signs and symptoms of MSI. Supervisors are responsible for controlling risks in their departments and promoting safe work practices. It is important that they receive specific training on how to recognize and correct unsafe work practices as well as how to respond to workers who report signs or symptoms of MSI. Supervisors should also ensure that workers maintain current levels of education and training and that they continue to demonstrate safe work practices.

7.2.3 Managers

Managers require a general understanding of MSIP and related procedures. They should understand the value of consultation and ensure that workers have input into the MSIP process.

7.2.4 MSIP working groups

Members of MSIP working groups require specialized education and training to ensure that the MSIP program is effective. For more information, see Section 1.5.2, "What do working group members need to know?" on page 14, and Section 1.5.3, "Education and training for the working group," page 14.

7.2.5 Purchasing and facilities departments

Workers in purchasing and facilities departments should receive specific MSIP education and training that is related to the work they perform as well as to their role in MSIP for other workers. This includes an understanding of design and maintenance principles for workstations and work environments. Purchasing personnel should also be familiar with ergonomics design concepts for tools, equipment, and furniture to help make informed purchasing decisions that are consistent with MSIP efforts.

7.3 Designing an education and training program

When designing an education and training program, consider the following four components:

- goals and objectives (Section 7.4)
- content of courses (Section 7.5)
- methods of delivery (Section 7.6)
- evaluation of the education and training program (Section 7.7)

7.3.1 Challenges of education and training

Table 7.1 describes some typical challenges that you may encounter when developing an education and training program as well as potential solutions for those challenges.

Table 7.1

Education and training challenges and potential solutions

Challenge	Potential Solutions
• There is often more than one correct way of completing a task.	• Encourage workers to apply the principles of their education and training instead of blindly following rules.
• The terminology used within a facility or department may not be consistent with another facility or department.	• Try to standardize terms or point out discrepancies where they are known to exist.
• Each area of the facility has unique risks and demands that are hard to address in facility-wide education and training.	• Allow external educators time to familiarize themselves with the facility and its procedures.
• Trainees may not retain knowledge and skills.	• Conduct refresher training annually.
• Trainees may consider refresher training boring.	• Include interesting activities to keep trainees involved and alert.
• Different trainers may use different teaching styles and teach slightly different concepts.	• Use a train-the-trainer approach (see Section 7.6.3, "Train-the-trainer," page 73). • Try to use the same trainer for all related courses. • Provide opportunities for different trainers to sit in on each other's sessions.

7.4 Goals and objectives

The MSIP program should clearly define the goals and objectives of education and training and outline them in a context that is relevant to the participants or trainees. Goals and objectives should include specific outcomes that can be tracked or measured to determine the program's level of success. To provide context, consider using statistics (for example, the rate of MSI in the facility or department) to show participants or trainees the personal impact that MSI may have on them.

"Goals and objectives should include specific outcomes that can be tracked or measured."

The goals of MSIP education and training for workers may include the following:

- Identify signs and symptoms of MSI and their potential health effects.
- Recognize risk factors for MSI and understand who can help address them.
- Describe the facility's procedures for dealing with reported signs and symptoms of MSI or reported risks for MSI, including the names of people to whom signs, symptoms, or risks should be reported.
- Understand the procedures that the employer will use to evaluate and control risk factors and the ways in which workers can actively participate.

7.5 Content of courses

Follow these guidelines when developing content for MSIP education and training courses:

- Use current scientific evidence.
- Incorporate existing knowledge of what has been effective in the facility.
- Use terms that are easy to understand.
- If necessary, translate course materials into languages other than English.

"Specific content will depend on the goals and objectives of the course, the intended participants, their jobs, and the facility."

Specific content will depend on the goals and objectives of the course, the intended participants, their jobs, and the facility. See Sections 7.5.1 and 7.5.2 for examples of course content.

7.5.1 MSI awareness for workers

MSI awareness should be one of the first courses that workers attend in a facility; it is often a component of orientation. Before workers can actively participate in the MSIP program they require basic knowledge of MSIP, the risk factors associated with their tasks, and the potential control measures for those risk factors.

Education and training for MSI awareness may include the following content:

- a definition of MSI
- how to recognize and report signs and symptoms of MSI
- potential health effects of MSI
- how to identify risk factors
- basic control measures to reduce risks
- worker responsibilities
- relevant policies and procedures
- pertinent regulations
- how to complete and submit reporting forms
- how to use applicable equipment
- demonstrations of relevant safe work practices (e.g. patient handling techniques or computer workstation configurations)

Training times may vary, depending on the level of training that workers have received previously and how much change is being introduced.

7.5.2 Departmental education and training

In addition to education and training for general MSI awareness, many departments will require task-specific education and training. Departments that may require tailored education and training include:

- patient care units
- laundry departments
- laboratory departments
- maintenance departments

Topics for departmental education and training may include:

- care and use of tools and equipment
- hands-on training on lifting techniques and mechanical aids
- identification of specific MSI risks (e.g. locations of heavy items or areas that may lead to awkward posture or contact stress)
- use of personal protective equipment

Example: Education and training for patient handling

Education and training programs for patient handling should include an overview of:

- patient handling policies and procedures
- roles and responsibilities
- the principles of MSIP and good body mechanics
- recognition and reporting of early signs and symptoms of MSI
- determining levels of mobility during patient assessments
- risk factor identification
- patient handling techniques and the use of mechanical aids
- emergency patient handling
- reporting injuries and incidents

Resources in this guide

- Appendix 10: Sample no-lift policy, page 166
- Appendix 11: Patient and resident mechanical lifts, page 168

7.6 Methods of delivery

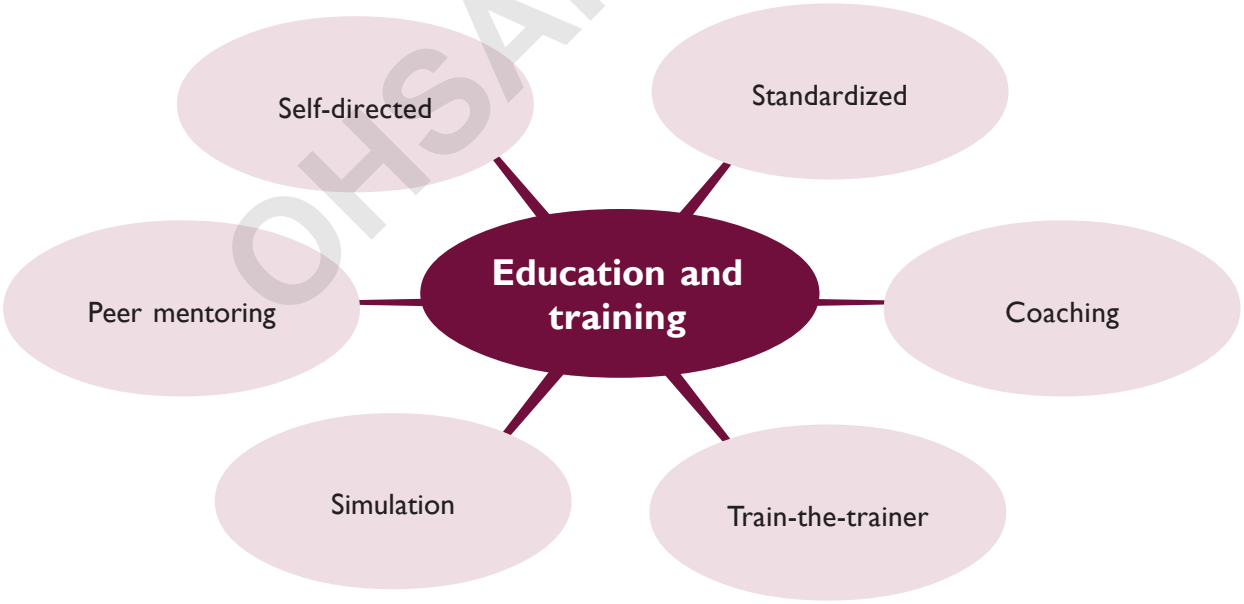
The methods used to deliver education and training can have a significant impact on its effectiveness. Figure 7.1 illustrates the basic methods of delivery. Education and training methods should account for adult learning styles and abilities. Adults learn in a variety of ways, so it is preferable to use a variety of teaching tools and methods to engage adult learners. Some people may be visual learners and will have success with pictures or videos; others may be auditory learners and will have success with lectures; and others may have success with hands-on examples.

Typical learning aids that may be used during education and training include:

- pictures, charts, and graphs
- videos
- hands-on exercises
- case studies
- group discussions, brainstorming, and problem-solving sessions

Education and training should occur in the work environment whenever possible. This encourages worker participation and allows for hands-on experience. Conducting sessions during work time also increases worker participation.

Figure 7.1
Methods of delivering education and training



7.6.1 Standardized

Standardized methods of education and training are often the easiest to design and administer. The most common method of educating workers is a lecture or presentation. People have been shown to retain more information when they are actively involved in the learning process; including case studies, discussions, or question-and-answer periods can greatly increase worker involvement, which may increase interest and knowledge retention.

The most effective standardized methods use the "demonstration and return demonstration" technique. This involves the educator demonstrating a technique such as a patient transfer, followed by the worker performing the same technique.

7.6.2 Coaching

Coaching is often one of the most effective methods of training. It should be used in combination with other methods. An example of coaching is a supervisor or manager observing a worker completing tasks and coaching them in techniques for minimizing the risk of MSI. Constructive criticism can help the worker if it is delivered properly. Positive feedback regarding what has been done well and suggestions regarding what could be improved may help the worker develop preferred techniques. Coaching helps workers develop low-risk behaviours and reinforces the need for and value of MSIP.

7.6.3 Train-the-trainer

Resources in this guide

- Appendix 12: Implementation guidelines for train-the-trainer programs, page 169

The goal of train-the-trainer programs is to develop self-sufficient trainers who can train workers. Trainers chosen by the facility receive basic knowledge and skills in the technical content (in this case, MSIP), resources, and training materials, as well as an opportunity to practise and demonstrate training skills. One of the responsibilities of management towards a train-the-trainer program is to recommend a number of trainers from the facility that is proportional to the number of workers in the facility. The trainers should be comprised of both union and management representatives.

7.6.4 Simulation

Simulation training is used to develop skills in a controlled environment where the configuration of equipment and the specific scenario can be carefully planned and repeated. Hands-on training in the actual working environment is usually the best way to develop skills; however, there may be situations where simulated training is more effective (for example, patient handling techniques).

Simulation training offers the following benefits:

- eliminates the costs or consequences associated with potential errors in the actual working environment
- provides an opportunity for more intense feedback, encouragement, and guidance
- reduces or eliminates distractions associated with the actual working environment, allowing workers to focus on the necessary skills
- allows training time for tasks that may occur infrequently
- isolates difficult subtasks so training can focus on them

7.6.5 Peer mentoring

Peer mentoring allows workers to become resources for safe work practices within a department or facility. Peer mentors can coach other workers in basic tasks and assist with more complex tasks such as patient handling. Mentors should be proficient in MSI education and training, and they should have the authority to act as a contact for workers who want to communicate MSI concerns.

7.6.6 Self-directed

Self-directed education and training is a process in which individuals determine their learning needs, identify resources, and develop solutions to problems — with or without the help of others. Many adults learn well using this method.

One effective approach is to have the employer determine standardized learning objectives and provide reference resources, but allow workers to control the means of learning and set their own pace. This method requires a way of testing the worker's knowledge retention to ensure that they have met the learning objectives.

Computer-based education

Computer-based education is an interactive, multimedia approach to self-directed education and training that can be an easy and effective way of educating workers. Computer-based methods are useful for teaching knowledge (education) but are less effective at developing non-computer skills (training).

Make computers available to workers at the facility and allow them to complete learning modules at their own pace, on their own time or during specified times. Computer-based education that includes a knowledge evaluation component and is linked to a database can be useful for tracking who has completed the education and whether or not they understood the content.

7.7 Evaluation of the education and training program

Education and training programs should be evaluated at least once a year to answer the following questions:

- Have education and training sessions achieved the desired goals and objectives of the overall program?
- Have sessions achieved their learning objectives?
- Have the intended participants received the education and training?
- Have workers retained information and transferred knowledge and skills to work practices?

7.7.1 Soliciting feedback

Written evaluations are commonly provided at the end of an education or training session to gather comments from participants. This is an efficient way of gathering information on participants' perceptions of the education or training, the relevance of the material to their work, and the effectiveness of the instructor.

7.7.2 Documenting performance

Documenting the number of workers who have received education and training can indicate if you have been successful in providing the education and training. Worker performance on quizzes or demonstrations can be useful for assessing whether or not the workers have understood the education and training and whether or not they have retained knowledge or skills. For more information, see Section 7.8, "Documenting education and training," page 77.

7.7.3 Evaluating knowledge retention and transfer

Evaluating how well workers are retaining knowledge and transferring it to their work activities will help determine the effectiveness of education and training. Materials used to evaluate retention and transfer should take into consideration the educational levels, literacy, and language skills of participants.

Written or oral quizzes

Resources in this guide

- Appendix 13: MSI education review - Laundry, page 171

Knowledge retention can be determined by using written or oral quizzes that test worker knowledge in at least the following areas:

- recognition and reporting of signs and symptoms of MSI
- potential health effects of MSI
- risk factor identification
- basic control measures

Videotaped case scenarios

Another evaluation tool for measuring knowledge retention and transfer is showing videotaped case scenarios and having participants identify the risk factors. Task-specific scenarios can focus on the tasks most relevant to the workers. For example, show patient handling scenarios to caregivers and food preparation scenarios to kitchen workers.

Observing workers

Knowledge transfer can be assessed by observing workers at work after they have been trained to ensure that they are following safe work practices (for example, selecting appropriate equipment and techniques as well as using proper body mechanics). Consider using a checklist for this assessment.

7.7.4 Reassessing education and training

If the goals and objectives of the education and training are not being met, you may need to reassess the following:

- content
- method of delivery
- level of commitment demonstrated by everyone involved in the education and training
- appropriateness of the education and training
- ability of the trainers

Resources in this guide

- Appendix 7: Risk factor identification and assessment checklists, page 138

7.8 Documenting education and training

Maintaining records of all education and training sessions helps ensure that orientation and refresher education and training occur when necessary and is also useful for evaluating the effectiveness of the education and training.

Education and training records should include the following information:

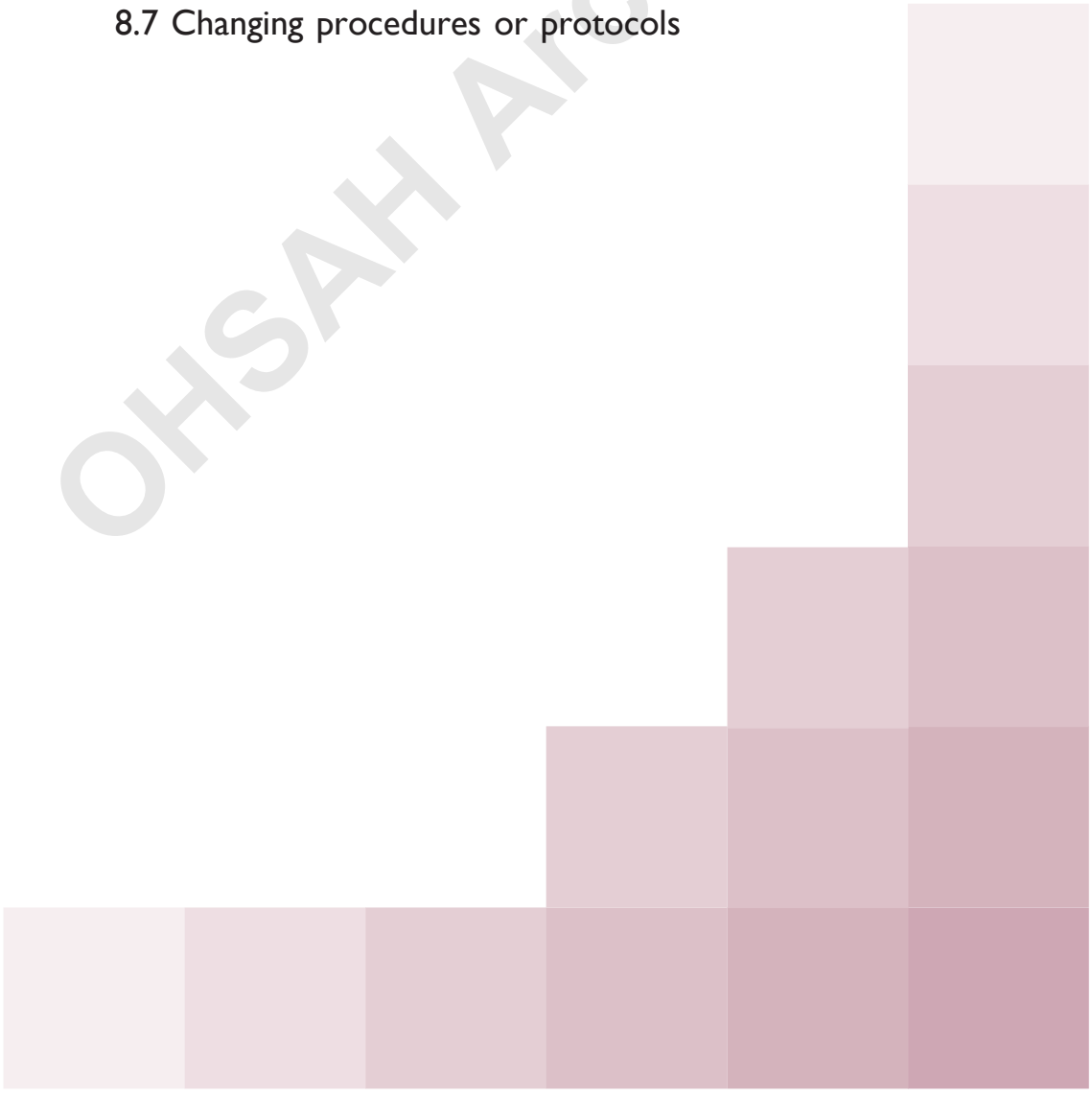
- date
- location
- duration of the session
- outline and contents of the session, including:
  - details of the written materials circulated
  - policies reviewed
  - equipment demonstrated
  - procedures and techniques demonstrated
  - procedures and techniques practised
- names of instructors
- names of participants, including job titles and departments or facilities
- evaluation of the session

Maintain education and training records for at least three years.

Part 8

Proactive Risk Management

In this Part:



8.1 What is proactive risk management?

Proactive risk management is the anticipation of future problems, needs, or changes, followed by the development and implementation of control measures to deal with potential or existing risks before incidents can occur. Proactive risk management is prevention in the truest sense. It can occur at two levels:

- Identify and control existing risks before incidents occur.
- Identify and eliminate potential risks before they can develop.

Eliminating risks before they exist is more effective than controlling existing risks or using reactive risk management and is associated with lower costs for the following reasons:

- Controls avoid direct and indirect costs associated with injuries.
- Controls cost less to implement if integrated with purchasing and design activities.
- Engineered controls are more likely if considered during purchasing and design activities.
- Changes to practices and procedures are minimized.
- Training and retraining costs are minimized

Combining proactive and reactive approaches to risk management

Although proactive risk management is preferable, the reactive approach also has its place. A comprehensive MSIP program should be proactive and reactive, both anticipating and responding to incidents. For more information, see Part 9, "Secondary prevention," page 95.

8.1.1 Opportunities for proactive risk management

Proactive risk management requires a commitment to recognize opportunities and respond to them as they arise. The key opportunities to influence potential or existing risks include:

- developing partners
- orienting and training new workers
- evaluating purchasing options
- maintaining tools and equipment
- designing and renovating facilities
- changing procedures or protocols

Seizing these opportunities may be challenging at first. It may require patience, tenacity, and the education of others within the organization. One strategy is to involve individuals who are responsible for the opportunities listed above in the risk management process.

8.2 Developing partners

Proactive risk management requires a commitment to work with stakeholders involved in purchasing, facility design, facility maintenance, and equipment maintenance. The MSIP working group should strive to develop working relationships with stakeholders that will encourage them to bring opportunities to the attention of the working group; such relationships are useful to both the MSIP program and stakeholders.

Figure 8.1

Stakeholders who should be partners in the risk management process

The best way to develop partners is to educate and involve stakeholders, while developing a professional relationship that is mutually beneficial. Educate stakeholders about MSIP and the MSIP working group. Involve stakeholders in the risk management process by requesting their input and encouraging their active roles in the identification of risks and development of controls.

8.3 Orienting and training new workers

Whenever new workers are hired, they may be at risk of MSI because:

- they are unaccustomed to the new work or equipment
- they are unaware of the risks that are present in the new work environment
- they are unaware of controls for risks to which they may be exposed

8.3.1 Guidelines for orientation and training

Orientation and training can be a form of proactive risk management because it helps new workers integrate into the workplace and ensures their health and safety. Consider the following guidelines:

- Match new workers with senior workers who have a history of safe behaviours and good knowledge of safe work practices.
- Include MSIP education and training in orientations.
- Work with new workers to ensure that the work and the work environment do not hinder them from performing their job duties safely.
- Make efforts to respond to the unique characteristics of each worker.

8.3.2 Getting ideas from new workers

Although orientation and training for new workers is primarily meant to ensure their health and safety, it may also uncover opportunities for the employer to control the risk of MSI. Sometimes new workers notice risks that existing workers have become accustomed to and do not notice any more. New workers may also bring good ideas from their training or previous work experiences, so their input should be encouraged.

8.4 Evaluating purchasing options

The objective of evaluating purchasing options is to ensure that purchases include consideration of how the product will fit into the existing system and whether or not the product will promote safe work practices to the greatest extent possible. Such considerations require the involvement of the product's end-users and people with knowledge of MSIP.

Before making a commitment to purchase any product, consider the implications for the work or work area involved and the people who will use the product. Also consider whether or not the product is the best choice from a risk management perspective.

8.4.1 Considering purchasing practices

Purchasing practices vary considerably among facilities; your approach to proactive risk management should be sensitive to the facility's practices. Understand how purchasing decisions are made and who influences those decisions. Educate those individuals about the risk management process and the fact that purchasing presents an opportunity to minimize risk.

8.4.2 Consulting with purchasers and end-users

Work with the facility's purchasers and involve end-users of the product to make sure that risk factors are identified and compared for different product options, and that the product is the most appropriate choice for the job. End-users may include:

- workers who will use the product
- maintenance workers who will service and repair the product
- cleaning workers who will clean the product or the area around it
- patients who may interact with the product

8.4.3 Considering product characteristics and risks

Before purchasing a product, consider the following guidelines for evaluating its characteristics, identifying potential risks, and determining whether or not it is appropriate for the facility:

- Identify the end-users (patients and workers) and their needs. Involve representative end-users in a focus group to evaluate needs and options.
- Review current inventory and identify any issues regarding product use.
- Communicate with other facilities that use the product. Ask the vendor for a client list.
- Observe the product in use at another facility.
- Evaluate comparable products using manufacturers' detailed specifications.
- Request product samples from the vendor.
- Allow end-users to trial product samples in the intended environment, if possible, or in a simulated environment.

Table 8.1

Considerations when evaluating products

Consideration	Examples
maintenance requirements	• frequency of required maintenance • adequacy of maintenance instructions • ease of access to parts or maintenance points • availability of maintenance support
environmental requirements	• space (clearances) • engineering requirements (e.g. electrical, plumbing, or structural) • noise • storage
physical effort required to operate	• ease of use (intuitive or simple operation) • ease of adjustment • requirements for forceful exertion (e.g. gripping, pushing, pulling, or lifting) • requirements for sustained or repeated physical effort
physical effort required to operate	• reaches and clearances • controls and displays • handles and grips • adjustability for various sizes of people and uses
postures required to operate	• potential for omitting operation steps or performing steps out of sequence • guards or failsafe mechanisms to prevent errors • status feedback (e.g. warnings) • ability to recover from errors
appropriateness for intended use	• meets the needs of end-users • accomplishes objectives effectively and efficiently • can be used within existing space • does not interfere with other equipment or activities
training or education requirements	• changes to current work protocols • possible risks • ease of use or intuitiveness • potential for errors • extent of training required
costs	• purchase • maintenance and service • productivity and efficiency • potential losses (e.g. injury, theft, or downtime)

Example of purchasing opportunities — Purchasing equipment and aids

Purchasing equipment and aids for patient handling is one example of an opportunity to evaluate purchase opportunities. Replacing manual patient handling with mechanically assisted options and non-mechanical transferring and repositioning aids can help reduce MSI in healthcare workers who handle patients.

Table 8.2

Examples of mechanical assist options and non-mechanical transferring and repositioning aids

Mechanical assist options	Non-mechanical transferring and repositioning aids
• ceiling lifts • shower chairs • floor lifts • electric beds	• low-friction sliding sheets • wheelchairs • transfer boards • grab bars • raised toilet seats or commodes • transfer belts • transfer discs • transfer poles

8.4.4 Conducting post-purchase evaluations

After purchasing a product, complete a post-purchase evaluation to ensure that it is installed and implemented as intended, and to ensure that there were no unforeseen MSI implications. The post-purchase evaluation may include the following questions:

- Is the product installed correctly?
- Does the product meet the need for which it was intended?
- Does the product suit the work environment?
- Are workers using the product as intended?
- Are workers satisfied with the product?
- Has the product presented any new risks?

8.5 Maintaining tools and equipment

Most tools and equipment require preventive maintenance or repair to keep them operating as their designers intended. Well-maintained tools and equipment operate with the least amount of effort and with minimal likelihood of failure during normal operation. The risk of injury tends to increase when equipment becomes worn or broken and ceases to function effectively; for example, when casters seize on heavy laundry carts.

Educate workers, particularly maintenance workers, about the importance of regular maintenance for controlling the risk of injury as well as for preventing more costly repairs when equipment becomes damaged or worn. Promoting preventive maintenance demonstrates that the organization takes pride in its tools and equipment and its people, which will help establish a working culture in which workers are diligent about the correct use and care of equipment.

8.5.1 Common maintenance activities

Common preventive maintenance activities include the following:

- Clean joints and surfaces.
- Sharpen blades.
- Maintain wheels and casters in smooth operating condition.
- Lubricate bearings and moving parts.
- Tighten screws, nuts, and bolts.
- Maintain guards and safety devices.
- Replace broken or damaged parts promptly.
- Run manufacturer's diagnostic programs.

8.5.2 Maintenance guidelines

To ensure that equipment is adequately maintained, follow these guidelines:

- Follow manufacturers' maintenance guidelines.
- Establish maintenance schedules to avoid breakdowns or inefficient use of equipment.
- Clearly mark on equipment when the last maintenance was performed and when the next maintenance is scheduled.
- Provide and designate storage space for equipment.
- Educate workers regarding protocol if equipment needs repair or maintenance.
- Respond promptly to requests for service or maintenance to encourage worker reporting of maintenance issues.

8.6 Designing and renovating facilities

The design of a new facility or renovation of an existing one both provide excellent opportunities to improve occupational health and safety by influencing the physical layout of the facility, the configurations of workstations, the selection of equipment, and the design of work processes. Proactive facility design is an imprtant element of the risk managment process.

Design teams should include a member of the MSIP working group and an ergonomics expert, and should consult with workers — this demonstrates a commitment to MSIP and fulfills requirements for consultation within the risk management process.

8.6.1 Reviewing safe work practices

Safe work practices and facility design are interdependent. Safe work practices should define aspects of the facility design. Once designed and built, the physical workplace will define aspects of safe work practices. The initiation of a design process should trigger a complete review of safe work practices to ensure that they are optimized in the new environment.

The carpenter's refrain "measure twice, cut once" holds true for MSIP. Careful consideration of safe work practices and MSIP during the design of new facilities or renovation of existing facilities can prevent the need to make costly changes later. Involving the MSIP working group and a representative sample of workers throughout the process is one way of "measuring twice." Healthcare workers have detailed knowledge of work processes and workplace layout that will help establish design requirements and refine detailed designs.

8.6.2 Integrating MSIP into the design process

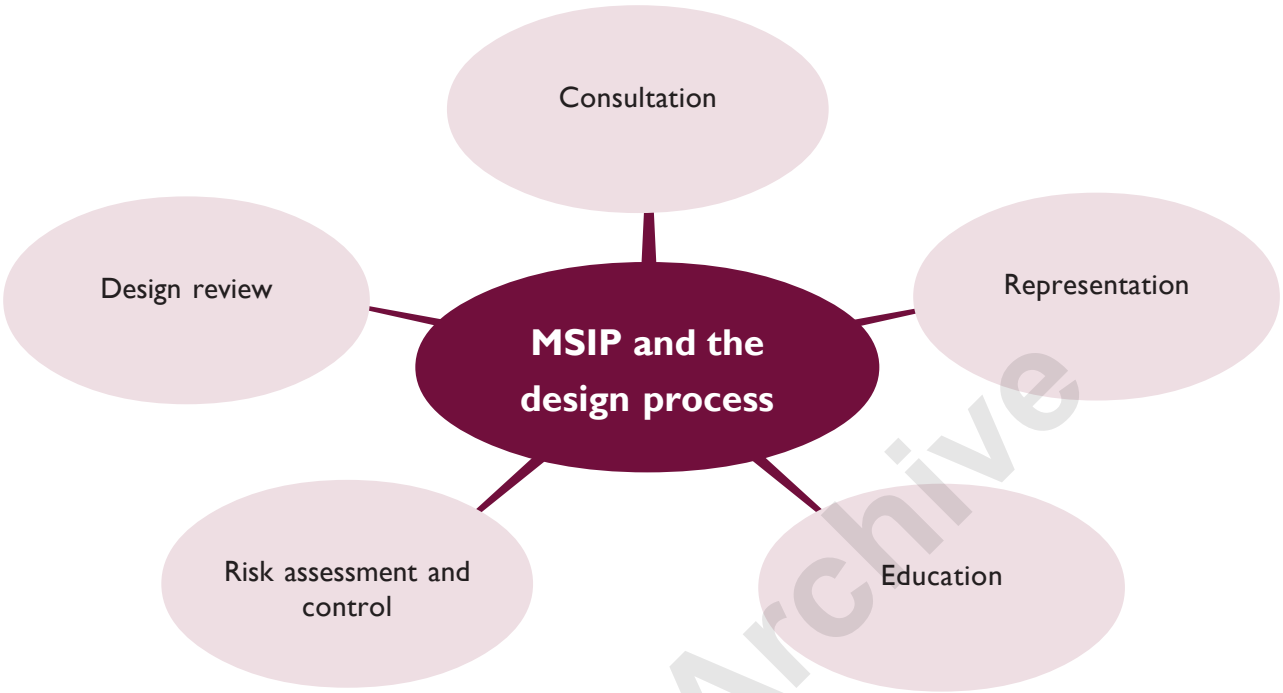
Consider the issues illustrated in Figure 8.2 to integrate MSIP into the design process effectively.

Consultation

Consider the following guidelines for consultation:

- Make MSIP a priority and establish a consultation process when requesting proposals for architectural and design services.
- Establish and clearly document the need for consultation between the design team, facility workers, the MSIP working group, and ergonomics experts.
- Circulate the plan to all participants.
- Document consultations and provide specific responses to issues or concerns that are identified.
- Budget for worker involvement and ergonomics expertise in the design process.

Figure 8.2
Issues to consider when integrating MSIP into the design process



Representation

Consider the following guidelines for representation:

- Identify individuals responsible for MSIP within the design process.
- Identify individuals who will represent the end-users from each department (e.g. direct care workers, maintenance workers, and janitors).
- Identify individuals (possibly consultants) who will provide MSIP expertise. They should be professionally certified as ergonomists and have experience in the healthcare sector.
- Inform all participants of the design team composition.
- When requesting tenders for design, inform architects and designers of the intended roles of the MSIP working group and worker representatives in the design process, and specify that this involvement is required.

Education

Consider the following guidelines for education:

- Educate members of the design team regarding MSIP policy and procedures as well as the facility's commitment to proactive risk management through design.
- Assign an ergonomics expert to observe work and interact with workers to help understand the current and proposed work practices.
- Educate the architect and other members of the design team about identified risks or concerns for the work processes within the work areas being designed or renovated.
- Educate the architect and other members of the design team about potential controls that have been identified by the MSIP working group and workers.

Risk assessment and control

The MSIP working group should be aware of recent risk assessments for the areas being designed or renovated, and should complete a risk assessment for any area that does not have a current risk assessment.

The MSIP working group and worker representatives should help:

- recommend changes to work processes and the physical environment to reduce the risk of MSI and refine work efficiency
- provide guidance and feedback to the architect and other members of the design team regarding design features, materials, and equipment

Design review

Involve the MSIP working group and worker representatives in the review of design concepts, detailed designs, and the review of the final outcomes of the construction. Consider the following guidelines for design review:

- Inspect design concepts in other facilities and speak to workers there about the effectiveness of the concepts and possible improvements.
- Evaluate and refine design concepts by mocking up proposed changes.
- Involve the MSIP working group and worker representatives in the review of detailed design drawings, models, and sample materials.
- Perform a walk-through evaluation during construction to confirm that spaces, equipment, furniture, and fittings are appropriate for the intended tasks.
- Perform a pre-occupancy evaluation of newly built facilities to ensure that concepts have translated into their intended forms and to identify any unforeseen hazards.
- Perform a post-occupancy evaluation to ensure that the intended functional and safety performance outcomes have been achieved.

8.6.3 Design considerations for MSIP

The specific design considerations for MSIP in a facility will depend on many factors. This section describes some of the many design considerations that may be implemented during the design or renovation of a facility. These considerations fall into four basic categories, illustrated in Figure 8.3.

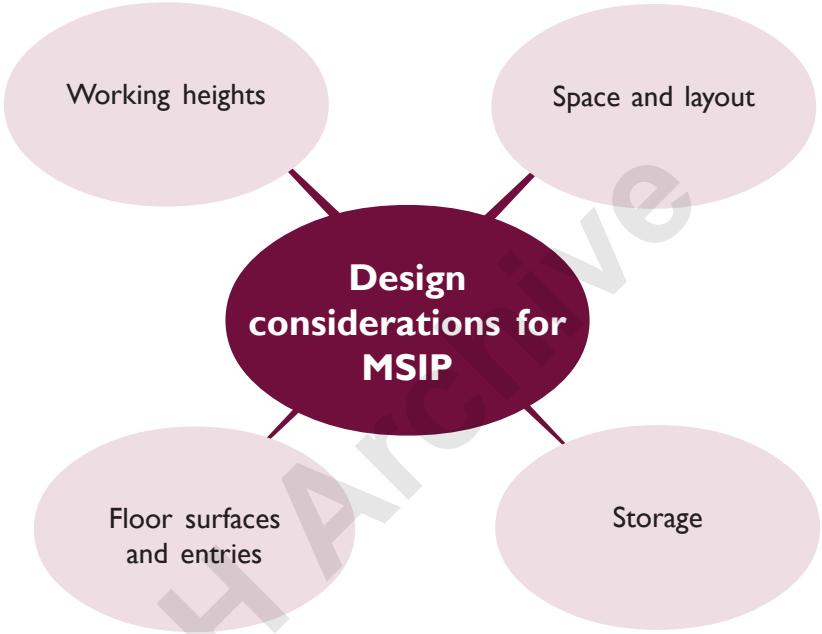


Figure 8.3
General design considerations for new or renovated facilities

Space and layout

Consider the following guidelines for space and layout:

- Arrange spaces to minimize transportation distances for materials and people.
- Allow sufficient space in patient rooms, washrooms, communal eating areas, and corridors to accommodate patients who require assistance and the use of assistive devices.
- Allow sufficient space for easy storage of materials and equipment.
- Consider distributed storage in patient units for materials such as floor lifts, ceiling lifts, and linens.
- Designate space for medication cart storage.
- Allow sufficient space for moving stretch beds in and out of rooms as well as for mobile equipment such as X-ray machines.
- Allow sufficient space so caregivers do not need to move furniture to do other tasks.

Note: Assisted mobility requires greater clearances than independent wheelchair access does.

Storage

Consider the following guidelines for storage:

- Provide adequate storage space between mid-thigh and shoulder height for frequently used or heavy items. Avoid allocating high shelving space for frequently used items.
- Provide floor-level storage for carts, dollies, and other wheeled equipment.
- Locate storage at or near the area where stored materials will be used to minimize transport.
- Provide adequate clearance in storage areas for the use of stepladders, carts, and other devices that may assist materials handling.
- Consider tilting wall-mounted storage bins to enable easier view and reach into the bins.

Floor surfaces and entries

Consider the following guidelines for floor surfaces and entries:

- Select flooring material that minimizes friction for rolling carts or wheelchairs.
- Provide a cushioning underlay for flooring material at workstations that require prolonged standing or walking.
- Provide smooth and level floor transitions between rooms and different flooring materials.
- Avoid the need for ramps by constructing all surfaces at a common level.
- Avoid raised door jams at building entries. Instead, use gradually sloping covered entryways to provide adequate weatherproofing.
- Consider using automatic doors with motion sensors where materials or patients are frequently transported.
- Select lever handles rather than knobs to minimize the effort required to unlatch doors.

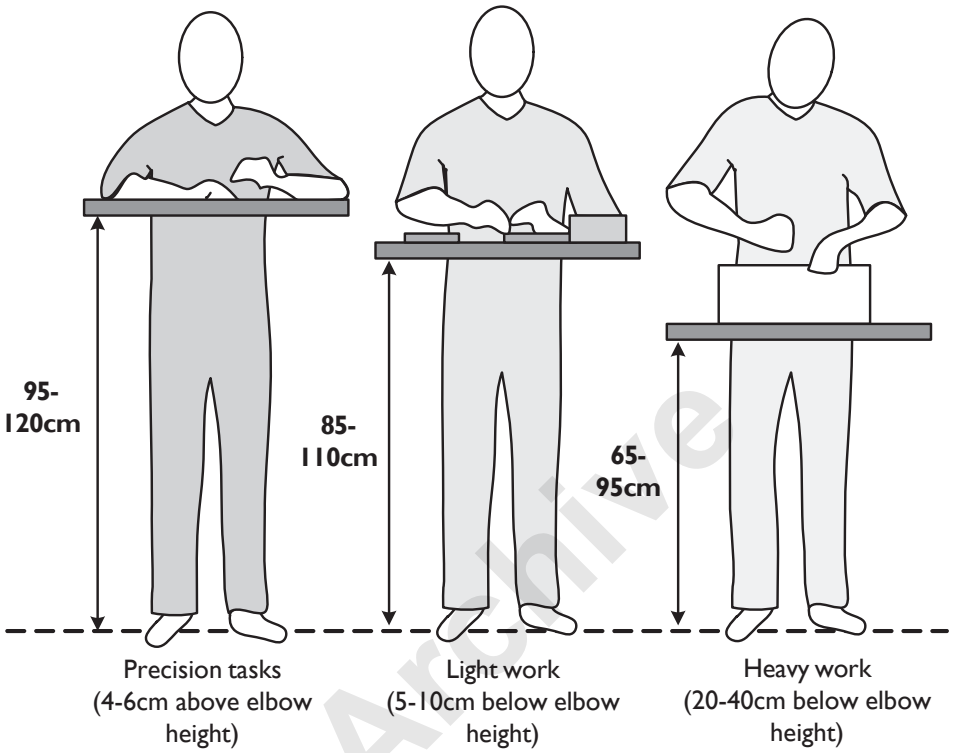


Figure 8.4
Working heights for specific kinds of tasks

Adapted from CSA Z412-00 Guideline on Office Ergonomics, Page 96, December 2000.

Working heights

Consider the following guidelines for working heights:

- Provide adjustable working heights wherever possible to accommodate people of different sizes.
- Match the range of available working heights to the type of task that will be performed at a workstation:
  - Precision tasks should be slightly above elbow height.
  - Light work should be at or slightly below elbow height.
  - Heavier work that requires forceful exertion should be slightly below elbow height.
- Provide knee and foot clearance at workstations to allow workers to sit or stand close to the work surface.
- Provide rounded edges on work surfaces to minimize contact stress.

8.7 Changing procedures or protocols

Changes to procedures or protocols may be implemented periodically to:

- improve clinical patient care
- enhance productivity
- conform to quality standards
- respond to new equipment
- improve other aspects of occupational health and safety

Whenever there is a planned change to the way that a task is performed, there is an opportunity for proactive risk management.

8.7.1 Reviewing changes before implementation

Proposed changes to procedures or protocols should be reviewed before implementation by the MSIP working group and a representative sample of workers affected by the changes. The review will help ensure that MSI risks are identified and controlled in a proactive manner and that the proposed control measures are likely to be effective.

Consider using the current procedures as a baseline to evaluate proposed changes to procedures. Consider the following questions for evaluating proposed changes:

- Will new risk factors develop?
- Will the magnitude of an existing risk factor increase?
- Will the duration of exposure to an existing risk factor increase?
- Will the frequency of exposure to an existing risk factor increase?
- Will the control measures increase the overall workload?

If the answer to any of these questions is "Yes," look for ways to control the potential increase in the risk of MSI. If the changes in protocol are anticipated to increase the level of risk relative to existing procedures, it is prudent to evaluate whether those changes are warranted or whether there may be alternatives that will achieve a similar objective without increasing risk.

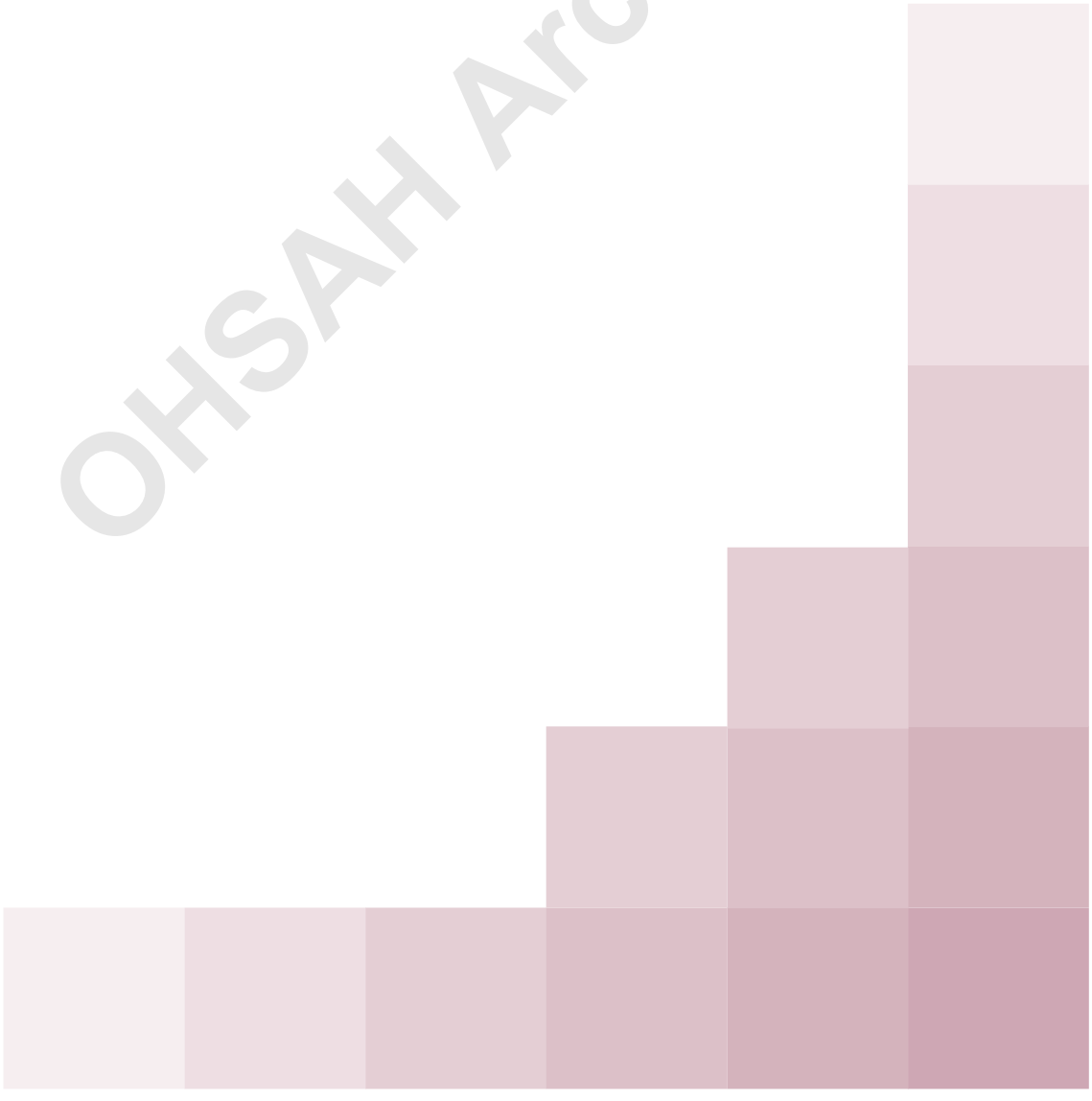
Other questions to consider when implementing new procedures or protocols include the following:

- Will there be any requirements for education or training?
- Will there be an increase in workload while the new procedures or protocols are being implemented?

Part 9

Secondary Prevention

In this Part:



9.1 What is secondary prevention?

A well-implemented MSIP program can help prevent MSI in the workplace, but even the most successful programs are not likely to prevent MSI completely. In addition to primary prevention (the risk management process described in Parts 3–7), the facility should incorporate secondary prevention into the MSIP program to respond to MSI that do occur.

Secondary prevention is the process of developing and implementing control measures after an individual has reported an injury or incident, in order to minimize the impact of the injury and prevent it from recurring for that worker and other workers.

The secondary prevention process can help:

- ease transitions for workers as they move through the phases of injury
- provide a convenient in-house resource to assist workers
- reduce the human and financial costs of MSI

For more information on injury tracking and reporting, see Part 10, "Injury tracking," page 107

Having a clear method for deciding which injuries are considered MSI will make this process considerably easier. The easiest way to ensure that every case of reported MSI is addressed is to have workers who are experiencing signs and symptoms of MSI fill out an injury or incident report form.

9.1.1 Why is secondary prevention important?

Injured workers who remain off work longer than six months only have a 50% chance of ever returning to their jobs. If time off work exceeds one year, their chances decrease to less than 10%.

"Injured workers who remain off work longer than 6 months only have a 50% chance of ever returning to their jobs."

For this reason, it is important to develop a secondary prevention strategy to respond to injuries and work diligently to return injured workers to work as soon as safely possible. Such a strategy helps injured workers stay connected to the workplace and supports them during the return-to-work process. This can help minimize the impact that MSI has on the worker, co-workers, managers, departments, the organization, and the healthcare industry as a whole.

9.1.2 Benefits of secondary prevention

Secondary prevention provides far-reaching benefits by reducing the human and financial costs of injuries. Secondary prevention may help:

- foster the physical and psychological recovery process for an injured worker
- enhance an injured worker's sense of confidence and well being
- improve the health and welfare of the worker
- minimize the chance of reinjury
- reduce rates of worker absenteeism
- reduce worker turnover
- reduce medical, disability, and time-loss costs
- reduce the costs of finding additional workers, overtime, retraining, loss of production, and related costs
- encourage cooperation between workers and management
- improve workplace morale
- reduce the potential for a worker to become permanently disabled

9.2 Early intervention and return to work

There are two basic stages of secondary prevention: early intervention (early secondary prevention) and return to work (late secondary prevention). The stage of secondary prevention that a worker enters into depends on whether or not the worker is able to remain at the workplace, as well as factors such as the type of injury, severity of injury, and the physical demands of the job.

9.2.1 Early intervention (early secondary prevention)

Early intervention is useful when a worker sustains an injury that does not completely prevent them from working. The goal is to find ways to help the worker remain productive at the workplace until the worker is able to resume regular duties full time.

Note: *Functional capacity* is the level or amount of activity that workers perceive they are capable of performing with a very low risk of reinjury or further complications of the existing injury.

As soon as possible after an injury occurs, use the following three early intervention steps to help the worker remain at work and control symptoms of MSI:

1. Identify the functional capacity of the worker using a physical assessment and a functional assessment.
2. Identify the physical demands of the job using a work site assessment.
3. Ensure that the demands placed on the worker do not exceed the capacity of the worker. If necessary and where appropriate, modify the workplace to accommodate the worker's physical capacity.

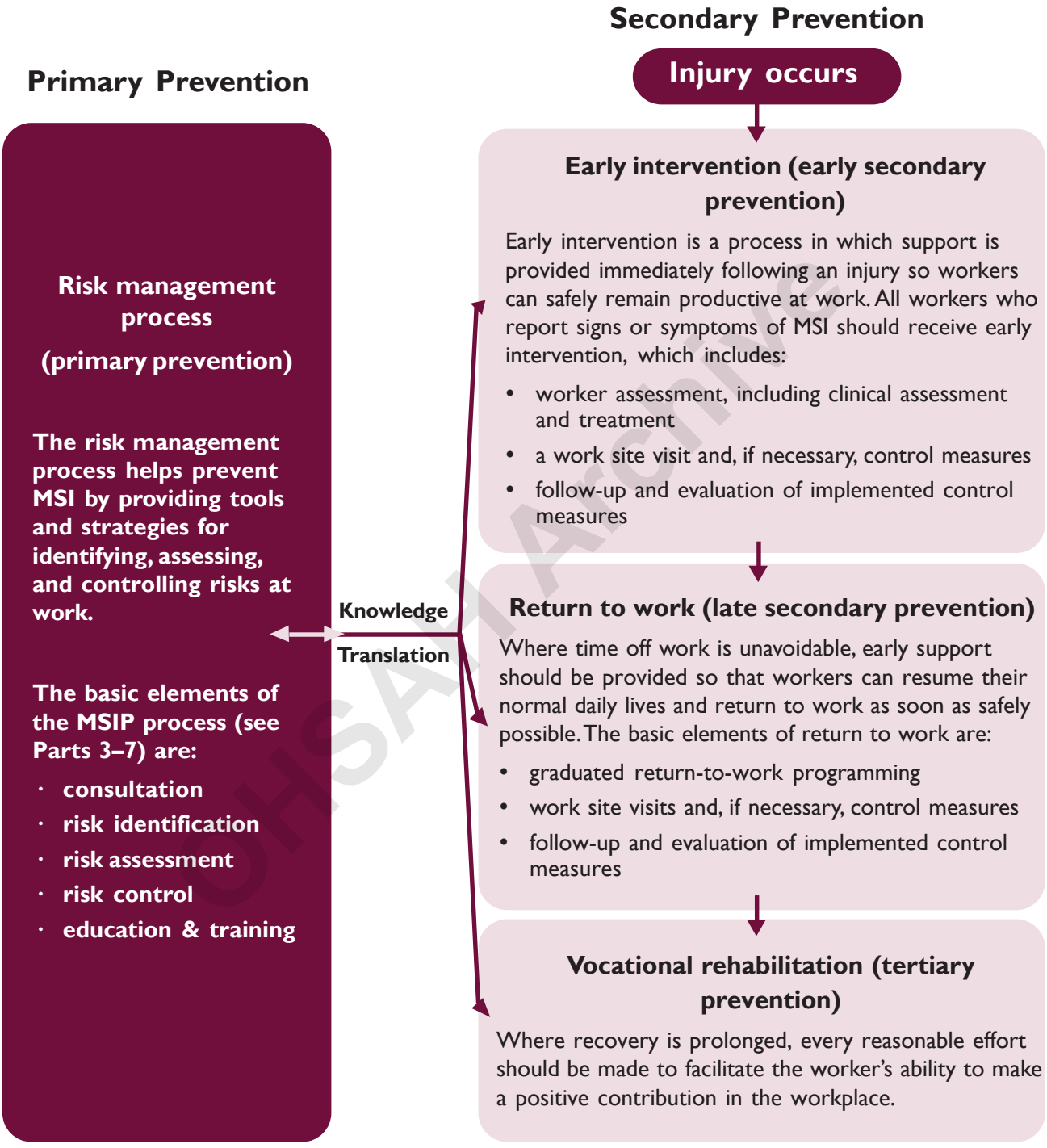
9.2.2 Return to work (late secondary prevention)

Some injuries may be severe enough that the worker has to stop working for some time. When a worker has missed time from work and is deemed capable of returning to some form of work, consider return-to-work strategies that will accommodate the worker's abilities and promote rehabilitation. Make it clear to the worker at the outset that any modified tasks are temporary. Strategies should consider how modified tasks will help prepare the worker to return to full-time regular duties. Discuss with the worker all components of the return-to-work plan, including a timeline for progressively moving towards regular duties.

Use the following protocol when deciding on a worker's return-to-work duties:

1. Make every effort to return the worker to their pre-injury job with some modification to hours or duties.
2. If step 1 is not possible, consider a different job in the same department.
3. If step 2 is not possible, consider a job in a different department.

Figure 9.1
Integration of primary and secondary prevention



9.3 A framework for secondary prevention programs

This section provides a framework that can be used to develop a secondary prevention program specific to the facility.

9.3.1 Mission

The program should be dedicated to minimizing the human and financial costs of MSI and disability by developing an individualized, safe, and timely process for early intervention as well as return-to-work strategies to help workers resume meaningful and productive work.

9.3.2 Objectives

The objectives of a secondary prevention program are as follows:

- Provide a consistent, safe, voluntary, and timely process for assisting workers who have been limited by MSI (on or off the job) to return to productive, meaningful work, regardless of whether those limitations are short-term, long-term, or permanent.
- Formalize policies and procedures that outline strategies to assist workers in safely returning to work.
- Maintain a case-by-case approach that is based on worker needs.
- Always consider the welfare of the worker first and foremost; do not adversely affect a worker's recovery.
- Decrease total lost days.
- Decrease the frequency of time-loss MSI.
- Decrease the duration of time-loss MSI.
- Decrease disability resulting from time-loss MSI.
- Identify and evaluate the critical success factors of early intervention and return-to-work strategies.

9.3.3 Principles

The twelve principles for implementing a secondary prevention program are as follows:

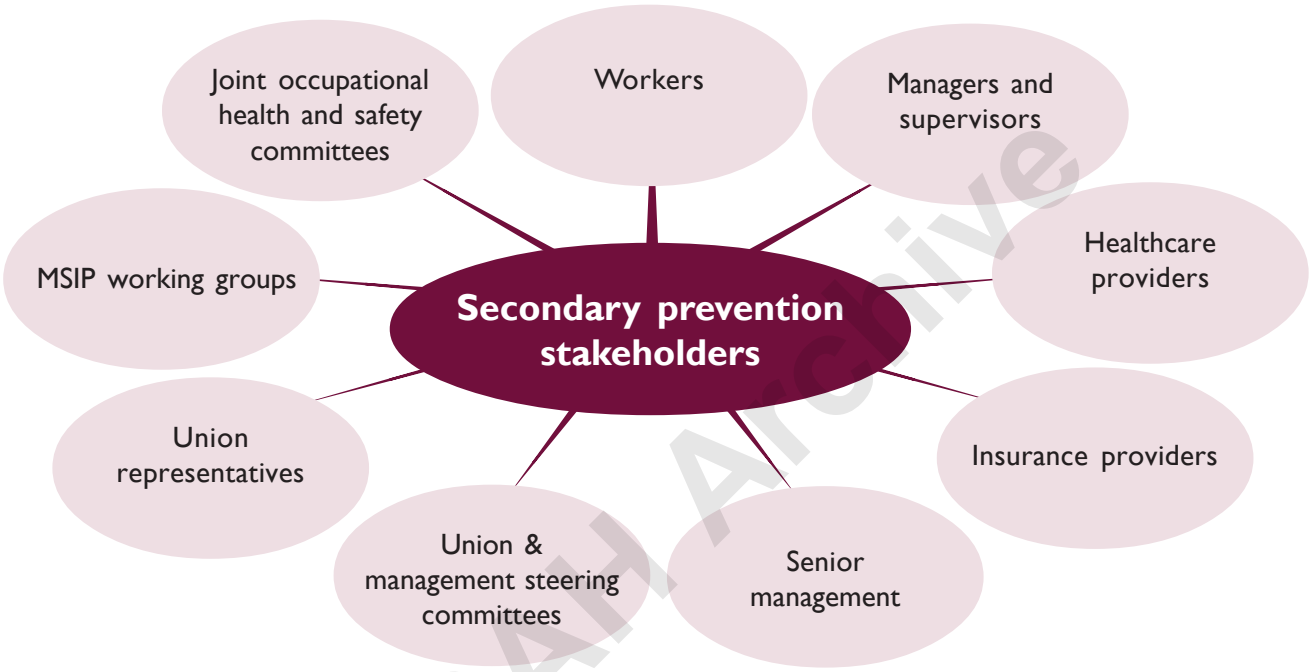
1. The focus of post-injury intervention should be on modifying the workplace to accommodate the injured worker. This helps avoid injury aggravation and prevent reinjury. It also enhances the quality of the work environment for other workers.
2. All modified work assignments must be meaningful. Collaboration between workers and employers is essential when determining work assignments.
3. The principles of secondary prevention should be fully integrated into the existing occupational health and safety process.
4. The program should promote elements that have proven effective.
5. Existing patient-doctor relationships must be recognized and respected. Such relationships are proven to be vital in the prevention of disability.
6. The program must be entirely voluntary.
7. The program should allow for rapid intervention.
8. The program should operate on its own merits rather than being driven by the injury claims process.
9. The program should make provisions for in-house or on-site rehabilitation wherever possible, so workers can retain a sense of belonging to the workplace.
10. Labour and management representatives should collaborate to ensure the well being of workers in the workplace.
11. Work-related MSI should be a priority. Where resources allow, however, workers with health problems other than MSI or health problems that are not work-related should also have access to program resources and expertise.
12. All injuries, treatments and control measures must be carefully tracked and outcomes clearly identified — this will target resources to help prevent injuries to others.

For an example of a secondary prevention tracking form, see Appendix 17, page 179.

9.4 Roles and responsibilities

Effective implementation of secondary prevention typically requires collaboration among a number of parties (illustrated in Figure 9.2). This section outlines the basic roles and responsibilities for the various stakeholders who may be involved in the secondary prevention process.

Figure 9.2
Possible collaborators in the secondary prevention process



9.4.1 Workers

Injured workers should fulfill the following roles and responsibilities:

- Participate in the development of early intervention and return-to-work plans that include both short-term and long-term goals for timely, safe recovery and return to regular duties.
- Report to manager or supervisors any concerns or problems arising in the return-to-work plan.
- Cooperate with family physician and rehabilitation professionals by adhering to a rehabilitation or workplace modification plan that has been developed.
- Inform manager or supervisor on a regular basis about status and time frames for return to regular duties.
- Inform manager or supervisor of specific recommendations made by healthcare providers so that the secondary prevention process proceeds without false expectations.
- Make maximum effort to succeed by being personally responsible for and involved in every step of the secondary prevention process.

9.4.2 Managers and supervisors

Managers and supervisors should fulfill the following roles and responsibilities:

- Support MSIP activities and secondary prevention objectives.
- Notify the MSIP working group (or secondary prevention team) of workers who may be developing signs and symptoms of MSI that could be minimized or eliminated by early intervention.
- Notify the MSIP working group (or secondary prevention team) whenever a worker is unable to perform the requested duties safely because of a physical limitation.
- Before implementing a return-to-work plan, discuss with the secondary prevention team and injured worker all expectations related to the return-to-work process (e.g. job performance, absenteeism, and safety issues).
- Answer any worker questions or concerns about return to work, job modifications, and task restructuring.
- Monitor work practices and activities to ensure that they adhere to the return-to-work plan.

9.4.3 Healthcare providers

The worker's family physician and other primary care providers should fulfill the following roles and responsibilities:

- Consider the workplace an integral component of the rehabilitation process.
- Initiate early intervention or return-to-work processes when appropriate.
- Participate with the worker's organization according to professional guidelines such as the Canadian Medical Association Guidelines.
- Review return-to-work plans with the injured worker.
- Request information as necessary and make recommendations and suggestions.

9.4.4 Insurance providers

Insurance providers (e.g. the WCB, ICBC, or the Healthcare Benefit Trust) should fulfill the following roles and responsibilities:

- Support secondary prevention objectives actively.
- Supply benefits and arrange for necessary services in a timely manner.
- Explore return-to-work strategies openly with workplace return-to-work personnel.
- Participate in a collaborative effort to create a comfortable environment for the worker's participation in a safe and timely return-to-work process.

9.4.5 Senior management

Senior management should fulfill the following roles and responsibilities:

- Provide visible support for and commitment to program objectives.
- Support and promote internal and external awareness of secondary prevention.
- Ensure accountability by revising the management or cost-accounting structure and procedures, if necessary to align with program objectives.
- Mobilize resources necessary to help workers successfully return to their original core duties or those duties that their seniority will allow.

9.4.6 Union and management steering committees

Union and management steering committees should fulfill the following roles and responsibilities:

- Adhere to policies and procedures to ensure a consistent yet individualized secondary prevention process.
- Provide visible support for and commitment to program objectives.
- Maintain an atmosphere of trust; ensure that individual rights are respected and confidentiality is assured by not having medical details discussed during meetings.
- Maintain a consistent understanding of current injury prevention strategies (for example, follow the current literature) and educate and assist workers in understanding the principles of effective early intervention and return to work.
- Participate in other duties that may require a cooperative effort (for example, newsletter article writing) to ensure that the secondary prevention process is well promoted and viable.
- Review the secondary prevention objectives and general activities annually.

9.4.7 Union representatives

Union representatives should fulfill the following roles and responsibilities:

- Provide visible support for and commitment to program objectives.
- Support and promote internal and external awareness of secondary prevention processes.
- Strive to provide for and protect the development and maintenance of MSIP and secondary prevention within collective agreements.

9.4.8 MSIP working groups and joint occupational health and safety committees

MSIP working groups and joint occupational health and safety committees should fulfill the following roles and responsibilities:

- Evaluate the risk factors that contributed to an initial injury.
- Establish controls to minimize the risk to other workers.
- Examine early intervention or return-to-work strategies used to accommodate the injured worker to help identify globally applicable strategies that may help prevent injury to others.

Through the collaboration of OHSAH, Vancouver General Hospital, and Royal Columbia Hospital, an integrated injury prevention program has been established. For more information about Prevention and Early Active Return to Work Safely (PEARS), contact OHSAH.

Part 10

Injury Tracking

In this Part:

10.1 What are injury tracking systems?

Injury tracking systems are generally a combination of procedures and software that provide a means to identify and track workplace health indicators such as:

- MSI rates
- incident rates
- worker absenteeism rates
- worker reports of signs and symptoms of MSI

Facility administrators, joint occupational health and safety committees, MSIP working groups and occupational health and safety workers use this information to begin addressing health and safety concerns. This information is extremely valuable in identifying risks and evaluating the effectiveness of interventions, control measures, and the overall MSIP program.

In the Act

Part 1, Division 5, Section 54(1)

Subject to subsection (6), an employer must report to the Board within 3 days of its occurrence every injury to a worker that is or is claimed to be one arising out of and in the course of employment.

10.1.1 Benefits of injury tracking

Effective injury tracking provides the following benefits:

- Helps improve early reporting of injuries, which allows for prompt investigation and action.
- Timely processing and reporting of time-loss incidents to the WCB helps avoid delays in adjudication and promotes income continuity for workers.
- Relevant data on workplace injury determinants and trends (e.g. types of injuries, departments, occupations, times, places, and causative factors) help the facility make evidence-based decisions for prioritizing control measures.
- Up-to-date injury and claims information helps facility administrators and occupational health and safety professionals provide injured workers with support and rehabilitation in a timely manner to facilitate their return to work promptly and safely.
- Injury tracking data help in the evaluation of the effectiveness and cost benefit of health and safety initiatives.

10.2 Gathering data

Sophisticated injury tracking systems help occupational health and safety professionals gather injury data that can be analyzed to help improve the MSIP program.

10.2.1 Software and Internet applications

Advances in technology have provided healthcare stakeholders with a number of injury tracking tools, ranging from basic spreadsheets to Internet applications. Paper-based documentation processes may address injury reporting requirements, but they severely limit the ability to access and identify key data. The size of the workforce and the location of the workforce should dictate the type of injury tracking system to adopt. In most cases the use of a software application has become the mainstay for maintaining injury data.

Internet applications are particularly useful because they offer the ability to maintain a central source of injury data. This is especially beneficial for accessing information from the many remote and satellite locations in the healthcare industry. Occupational health and safety workers benefit from the ability to enter information securely via the Internet. This allows organizations to report and act upon the data in a much faster manner, reducing administration time and costs.

10.2.2 Human resources data

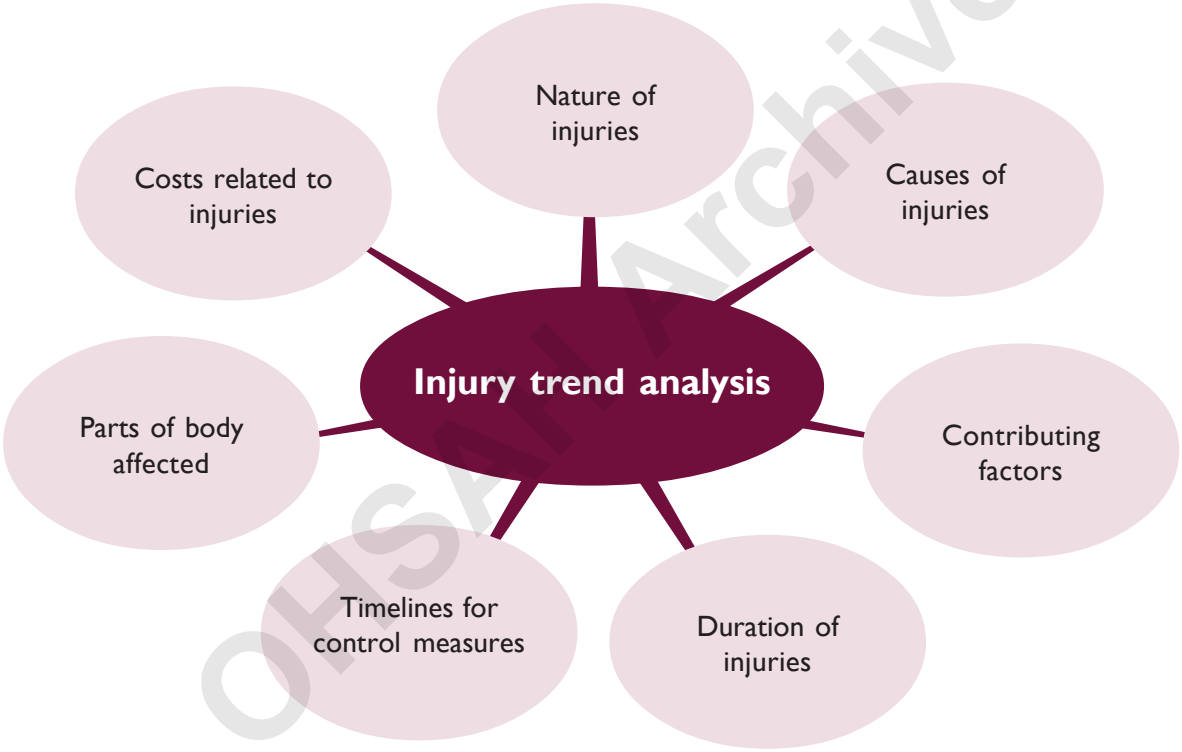
Injury tracking systems should make use of existing data sources, specifically human resources, to ensure healthcare demographic, contact and payroll details are maintained at a central source, avoiding the need to maintain multiple databases with the same information. This increases efficiency and the ability to rely on the data.

10.3 Analyzing data (trend analysis)

Analyzing injury data helps occupational health and safety professionals identify trends and determine the best approaches for injury prevention. Figure 10.1 illustrates some of the areas in which injury trend analysis can provide useful information.

Trend analysis should look not only at present statistics, but also at the data over time to show how the statistics vary from month to month or year to year. Once a trend is recognized, the facility can begin research to investigate and identify the root causes of the trend.

Figure 10.1
Categories for trend analysis of injury data



10.4 Process and requirements for injury reporting

For an example of an injury or incident report form, see Appendix 16

Healthcare workers should immediately report to their supervisors any injuries that occur at work, including injuries that do not require medical attention.

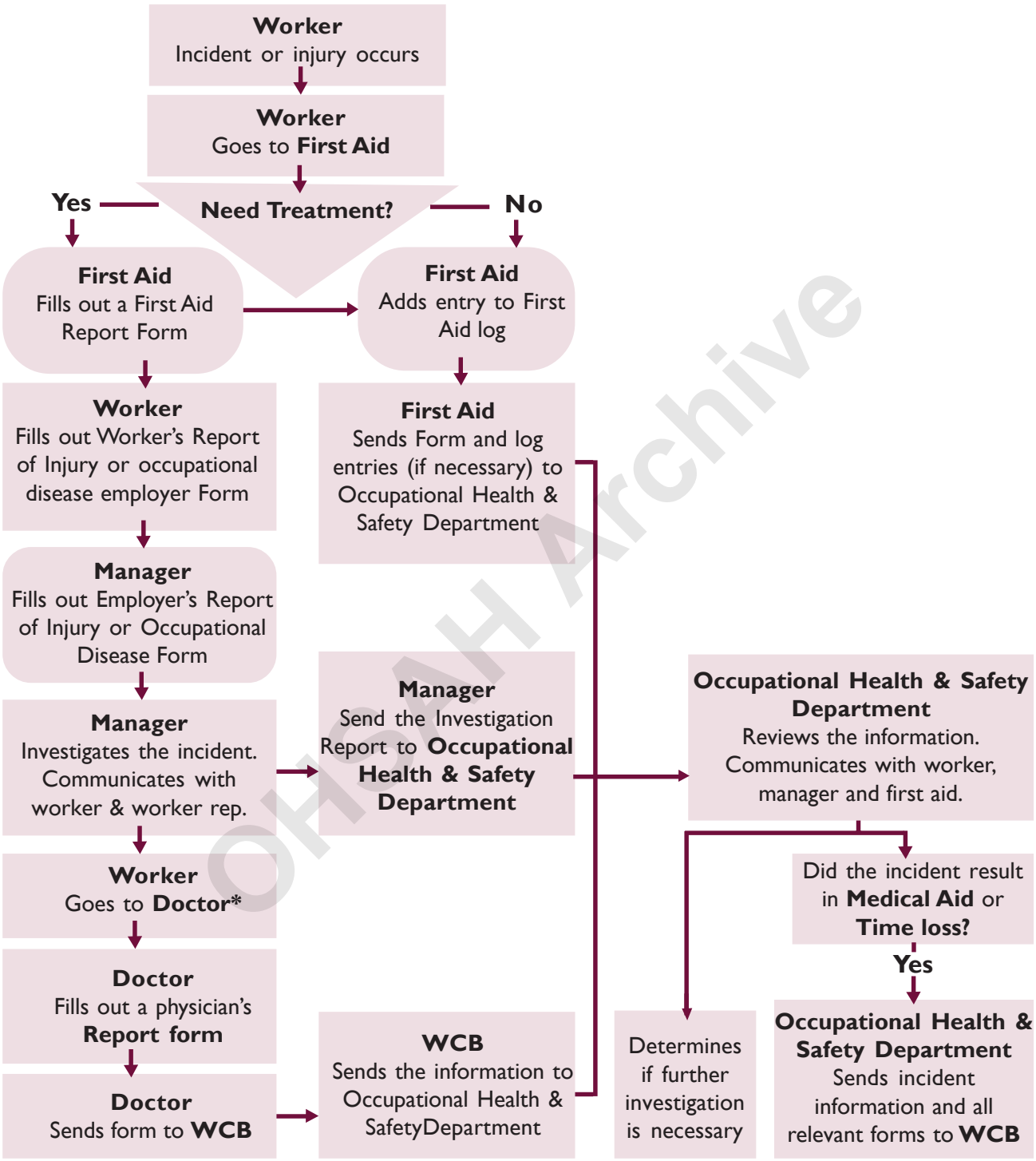
Management or supervisors are generally responsible for completing an injury or incident report as soon as possible after an injured worker has received medical attention. Incidents that do not result in an injury should also be recorded. Such incidents include near misses and incidents that cause property or equipment damage.

Figure 10.2 (see next page) illustrates an injury tracking process that can be used when a worker reports an injury or other incident.

"Healthcare workers should immediately report to their supervisors any injuries that occur at work, including injuries that do not require medical attention."

Figure 10.2

Example of an injury tracking process



*The worker may visit a doctor earlier in the process or may not visit a doctor at all.

Appendices

Appendix 1: Glossary of terms

activity

A piece of work done to accomplish a specific purpose. An activity may include one or more individual elements. Several activities comprise a *task*. Several tasks comprise a *job*.

administrative control

A risk control measure that involves modifying the task by changing the way the work is performed or the organizational factors that support the way the work is performed. This may include changes in workflow, procedures, or the frequency of rest breaks.

consultation

Seeking information, advice, or feedback from a worker, joint occupational health and safety committee, or MSIP working group.

control measure

A solution implemented to minimize or eliminate the risk of MSI. Control measures include engineering controls, administrative controls, and personal protective equipment (PPE).

cost effective

Description for a control measure or program that has created improvements worth the cost of implementation.

engineering control

A risk control measure that involves a physical change to the work environment; for example, changes to tools, equipment, or workstations.

ergonomics

The application of knowledge about human capabilities and limitations to the design of work, equipment, tools, work environments, and work organizations.

exposure

The condition of being subject to risks for MSI.

full-time equivalent (FTE)

A full-time work position within a department or facility, which may consist of one full-time worker or a combination of several part-time workers.

hazard

According to the Regulation, "a thing or condition that may expose a person to a risk of injury or occupational disease."

health authority

The health governance structure of British Columbia consists of the Provincial Health Services Authority and five geographic health authorities, including the following:

- Northern Health
- Interior Health
- Vancouver Island Health Authority
- Vancouver Coastal Health
- Fraser Health

The Provincial Health Services Authority is responsible for:

- working with the five health authorities to plan and coordinate the delivery of provincial programs and highly specialized services
- ensuring that access and other service-related issues are equitably addressed
- governing and managing the organizations that provide health services on a province-wide basis (for example, the BC Cancer Agency)

incident

According to the Regulation, "an accident or other occurrence which resulted in or had the potential for causing an injury or occupational disease."

incident rate

A measurement that can be expressed as the number of incidents per worker, per worker-years worked, or per total work hours.

intervention

See *control measure*

job

An occupation or position held by a worker. A job can be broken down into various tasks. See *tasks*.

joint occupational health and safety committee

A committee composed of management and worker representatives, whose function is to oversee the health and safety of all individuals in the workplace. Joint health and safety committees are a requirement for organizations that regularly employ 20 or more workers. (*Regularly employed* means employed for at least one month, whether full-time or part-time.)

The committee must have at least four members, including management and worker representation. Worker representatives must comprise at least half of the committee. The committee must also have two co-chairs: one selected by the employer representatives and one by the worker representatives.

Organizations that regularly employ fewer than 20 workers are usually only required to have a worker health and safety representative rather than a joint health and safety committee. For the purposes of this guide, when the term *joint occupational health and safety committee* is used it also refers to worker health and safety representatives.

participatory

Providing an opportunity for workers to be involved in decisions that influence how their work is performed.

patient

An individual who is receiving care. Some organizations refer to patients as *residents* or *clients*.

patient handling

Any physical handling (e.g. lifting, repositioning, or transferring) of the individual receiving care.

personal protective equipment (PPE)

A risk control measure that involves the use of protective clothing or equipment such as steel-toed boots, gloves, or face shields to protect against risk factors.

policy

A statement of principles and general guidelines that govern a facility's actions. A policy establishes the framework for what should or should not be done at the facility.

primary prevention

Any control measure or effort intended to prevent an injury from occurring.

proactive

Taking initiative by anticipating possible outcomes and acting before they occur. See *reactive*.

procedure

A set of instructions or guidelines describing specific actions or duties that should be performed at the facility (e.g. resident handling procedures or incident investigation procedures).

qualitative indicator

A subjective piece of information that cannot be expressed as a quantity. For example, a worker expressing appreciation for an injury prevention program is a qualitative indicator.

quantitative indicator

An objective piece of information that is measurable by quantity. For example, the total number of MSI incidents at a facility is a quantitative indicator.

quorum

The minimum number of members that must be present for a committee to vote and act on policies, procedures, or other actions. Most committees must have a minimum number of union and management representatives to establish a quorum.

reactive

Reacting to a situation that has already occurred rather than taking initiative beforehand. See *proactive*.

reposition

To change the position of a patient on the same surface.

representative sample of workers

A subgroup of workers who collectively represent the range of the larger group in size, shape, experience, age, skill, or other characteristics of the worker population.

return to work

The process of an injured worker returning to the workplace to engage in regular duties, modified duties, or alternate duties. This process usually involves a return-to-work plan, developed by a health professional in coordination with the worker and manager.

risk

According to the Regulation, "a chance of injury or occupational disease."

risk management

A continuous process that involves identification, assessment, and control of risk factors, as well as consultation with and education and training of stakeholders. Risk management also includes the evaluation of control measures that have been implemented to deal with risks.

secondary prevention

Any control measure or effort intended to prevent:

- further complications, damage, or disability associated with an existing injury or signs and symptoms
- injury recurrence for a worker with an existing injury
- future injuries for workers other than the worker who was originally injured

signs and symptoms survey

A survey or questionnaire used to collect information about pain and discomfort that may be related to MSI that workers have developed at work.

task

A component of a job. A task is comprised of a set of activities that are performed in a set order. See *activity*.

task list

An analysis in which a job is broken down into its task components, including the physical and psychological demands or risks associated with each task.

terms of office

The duties and responsibilities of each member of a committee. For example, the committee chair and secretary will have separate terms of office outlining their respective roles.

transfer

To help move a patient from one surface to another. An activity in which a patient or resident is able to reliably bear his or her own weight through at least one upper or lower limb (for example, using an upper arm during a chair-to-chair transfer), thereby allowing the caregiver to direct and guide the patient's movements rather than lifting all of their weight.

worker health and safety representative

See *joint occupational health and safety committee*.

Workers Compensation Act (the *Act*)

The legislation in British Columbia that mandates the Workers' Compensation Board.

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Appendix 3: MSIP resources

Association of Canadian Ergonomists

www.ace.ergonomist.ca
On-line resources:

- find a certified professional ergonomist (CCPE)
- events listings for ergonomics conferences and forums
- ergonomics news

BC Injury Research and Prevention Unit

www.injuryresearch.bc.ca
Publications and on-line resources:

- best practices for injury prevention strategies
- best practices for fall prevention programs
- examples of fall prevention programs throughout Canada
- manual for evaluation of an injury prevention program
- injury prevention literature reviews
- injury prevention fact sheet
- injury prevention cycle poster

British Columbia Institute of Technology

www.safetyandsecurity.bcit.ca
Publications and on-line resources:

- MSI prevention program guidelines
- occupational health and safety policies
- general guidelines for occupational health and safety programs

Canadian Centre for Occupational Health and Safety (CCOHS)

www.ccohs.ca
On-line resources:

- basic occupational health and safety program elements
- patient handling guidelines
- implementing a successful joint occupational health and safety committee
- MSI information — definitions and risk factors
- various health and safety and MSIP resources
- ergonomics guidelines for office work

Canadian Standards Association (CSA)

www.csa.ca
Canadian standards publications and resources.

Fraser Health Authority of British Columbia

www.fraserhealth.ca
Publications and on-line resources.

Health Care Health and Safety Association (HCHSA) of Ontario

www.hchsa.on.ca
Publications and on-line resources:

- developing occupational health and safety programs
- making joint occupational health and safety committees effective
- roles and responsibilities for occupational health and safety
- ergonomics resource guide, including MSI education and program implementation
- ergonomics guidelines for office work

Industrial Musculoskeletal Injury Reduction Program

www.imirp.org/index.asp
Publications and on-line resources:

- body manual — workers guide to preventing MSI
- MSI prevention implementation guide
- general risk factor solution manual

Interior Health Authority of British Columbia

www.interiorhealth.ca
Publications and on-line resources:

- understanding MSI
- practical guide for resident handling

Manitoba Labour: Workplace Safety and Health Division

www.gov.mb.ca/labour/safety
Publications and on-line resources:

- guideline for MSIP program development and implementation
- guide for setting up a workplace health and safety program
- elements of a health and safety program

National Institute for Occupational Safety and Health (NIOSH)

www.cdc.gov/niosh/homepage.html
Publications and on-line resources:

- elements of an MSIP program
- effective MSIP programs
- MSI prevention resources
- evaluating risk factors — NIOSH lifting equation <www.cdc.gov/niosh/pdfs/94-110.pdf>
- searchable bibliographic database of various health and safety topics
- ergonomics guidelines for office work

New Zealand Department of Labour

www.osh.dol.govt.nz
Publications and on-line resources:

- preventing back injuries in healthcare
- guidelines for prevention and management of overuse injuries
- workplace risk evaluation checklists
- treatment of overuse injuries
- ergonomics guidelines for office work

New Zealand Injury Prevention Strategy

www.nzips.govt.nz
Publication and on-line resource:

- outline for an injury prevention strategy

Northern Health Authority of British Columbia

www.northernhealth.ca
Publications and on-line resources

Occupational Health and Safety Agency for Healthcare (OHSAH) in BC

www.ohsah.bc.ca
Publications and on-line resources:

- implementing ergonomics and MSI prevention programs
- MSI prevention resources
- patient handling guide books and resources
- department specific ergonomics resources
- interactive and searchable OSHTips website

Occupational Safety and Health Administration (OSHA)

www.osha.gov
Publications and on-line resources:

- ergonomics guidelines and tips
- web-based ergonomics training tools
- examples of MSIP programs
- framework for comprehensive occupational health and safety program for nursing homes
- ergonomics guidelines for office work

Premier, Inc.

www.premierinc.com
On-line resources:

- preventing back injury in patient care
- developing an injury prevention program
- various checklists and resources

Providence Healthcare

www.providencehealthcare.ca
Publications and on-line resources.

Royal College of Nursing

www.rcn.org.uk
Publications and on-line resources:

- code of practice for patient handling
- patient handling assessment for wards and residences

Saskatchewan Labour

www.labour.gov.sk.ca
Publications:

- elements of an occupational health and safety program, including descriptions of main components and development guidelines

The Safety Groups Program (Ontario)

www.safetygroups.ca
Publication and on-line resource:

- handbook for an ergonomics risk control program

United States Army

www.apgea.army.mil/ergopgm/ergohome.htm
On-line resources:

- implementing an MSIP program
- MSIP program evaluation checklists
- MSI prevention guide
- "Work smart" and "Computer workstation" posters
- ergonomics guidelines for office work

University of British Columbia Department of Health, Safety, and Environment

www.hse.ubc.ca/v.2/index.php
On-line resources:

- MSI risk factors
- MSI prevention principles
- various checklists and posters
- ergonomics guidelines for office work

Vancouver Coastal Health Authority of British Columbia

www.vancoastalhealth.ca
Publications and on-line resources.

Vancouver Island Health Authority of British Columbia

www.viha.ca
Publications and on-line resources.

Victorian WorkCover Authority

www.workcover.vic.gov.au
On-line resources:

- manual handling code of practice
- transferring people safely

Washington State Department of Labor

www.1ni.wa.gov/wisha/ergo/Default.htm
Publications, videos, and on-line resources:

- MSIP awareness educational resources
- searchable database of ergonomics solutions and ideas
- MSI risk factor definitions and illustrations
- criteria for analyzing and reducing MSI
- cost-benefit analysis of an ergonomics health and safety regulation
- various health and safety posters

Workers' Compensation Board (WCB) of BC

www.worksafebc.com
Publications, videos, and on-line resources:

- MSI and ergonomics requirements
- implementing occupational health and safety programs
- implementing ergonomics and MSI prevention programs
- MSI prevention resources
- patient handling resources
- joint occupational health and safety committee resources
- various health and safety checklists
- ergonomics guidelines for office work

Workers' Compensation Board (WCB) of New Brunswick

www.whscc.nb.ca
Publications, videos, and on-line resources:

- health and safety policies and plans
- hazard and risk management
- health and safety education
- health and safety resource kit, including occupational health and safety fundamentals, posters, and various tools and checklists
- ergonomics guidelines for manual handling and office work

Appendix 4: Writing an MSIP policy

- A policy should be written that specifically addresses the prevention of MSI.
- The employer or most senior manager at the facility should endorse the policy in writing, recognizing their responsibilities and their intent to ensure the policy is upheld.
- The policy could also be endorsed by the joint occupational health and safety committee, worker health and safety representative, or union representatives, representing their support for the policy and intent to ensure the policy is upheld.
- The policy should include a title block that documents the original date of acceptance, date of revisions, title of the policy, and number of the policy.
- The policy should include each of the following:
    - A statement of the facility's health and safety philosophy
    - A clear commitment from the employer to provide a healthy and safe work environment for workers by integrating MSI risk reduction into everyday work activities
    - A statement of management and labour commitment to eliminate or reduce the risk of MSI to workers through an MSIP program
    - A statement of the objectives of the MSIP program
    - The employer's commitment to cooperate and consult with all levels of the organization to effectively implement the MSIP program
    - A statement identifying the groups or individuals responsible for implementing the MSIP program and keeping the program current
    - A summary of the groups or individuals responsible and accountable for elements of the program (directors, managers, supervisors, workers, occupational health and safety department, joint occupational health and safety committee or worker health and safety representative, MSIP coordinator, MSIP working group, facilities, and purchasing)
    - A statement regarding the need for everyone to take responsibility to maintain a healthy and safe workplace
    - The requirement that all workers will be held accountable for their health and safety responsibilities
    - A statement indicating who should receive suggestions for policy/program improvements
    - A statement indicating when the policy will be reviewed and by whom
    - Reference to applicable clauses in the provincial or federal legislation that are relevant to the policy

References:

Saskatchewan Labour. (2002) *Occupational Health and Safety: Reviewing an Occupational Health and Safety Program.*

The Occupational Health and Safety Agency for Healthcare (OHSAH) in BC. (2000) *Reference Guidelines for Safe Patient Handling.*

University of California Irvine. (2003) Department of Environmental Health and Safety: Writing Policies. <www.eci.edu>

Nova Scotia Department of Labour and Environment. (2003) Occupational Health and Safety Division Policy and Program. *A How-To Guide for an Occupational Health and Safety Policy and Program.* <www.gov.ns.ca>

Appendix 5: Example of an MSIP policy

5.0 Human resources

5.8 Health and safety

5.8.10 Musculoskeletal injury prevention (MSIP)

5.8.10.1 Musculoskeletal injury prevention program

VANCOUVER ISLAND health authority

1.0 Introduction and purpose

In accordance with the Vision, Mission and Values of the Vancouver Island Health Authority (VIHA) is committed to providing a safe and healthy work environment for all workers and volunteer staff. A primary goal of this program is to comply with the Occupational Health and Safety Regulation and a "no manual patient lift" work environment.

Vancouver Island Health Authority believes that prevention is the fundamental principle in reducing the frequency and severity of work-related injuries and is committed to the development, implementation, ongoing maintenance and evaluation of a region-wide musculoskeletal injury prevention program.

2.0 Policy

Participation in the musculoskeletal injury prevention program is mandatory for all VIHA employees.

Participation in the program shall be mandatory for all VIHA employees. The application of patient, resident and materials handling techniques, and the application of musculoskeletal injury prevention strategies shall be performance standards, incorporated into performance evaluations and subject to progressive discipline.

Managers are responsible to ensure that new workers attend the General Orientation and MSIP Program (STABLE) within their first month of employment.

3.0 Process

The program will focus on: (a) the identification, assessment and control of risk factors associated with the handling, lifting, transferring and transporting of patients, residents; and, (b) the use of assistive devices.

4.0 Implementation

The (MSIP) program is a component of the region-wide occupational health and safety program and encompasses:

- A statement of commitment and the application of resources to ensure a safe and healthy work environment
- Mandatory staff education and training, both general and department specific
- Ongoing education and training requirements
- Risk, hazard and ergonomics assessments
- Safe work procedural requirements
- Incident investigations
- Early intervention and return-to-work programs
- Establishing and maintaining standardization of lifts and transfers
- Establishing and maintaining standards for mechanical lifts
- Preventative maintenance
- Mandatory worker participation requirements

5.0 Responsibilities

Regional directors, managers, supervisors

It is the responsibility of the regional directors, managers, supervisors, clinical resource nurses, occupational therapists, physical therapists, and any other staff with direct worker responsibility to:

- Ensure all aspects of the MSIP program are carried out
- Promote healthy worker attitudes towards musculoskeletal injury prevention and safety in general;
- Identify ergonomic, repetitive and/or strenuous lifting and transferring hazards in their department/unit and participate with the Occupational Health and Safety Services Department in developing and implementing steps to prevent or eliminate the hazards;
- Ensure all staff are adequately trained in safe and effective methods of ambulation, transfers and lifts;
- Monitor, document and evaluate worker performance and enforce MSIP safe work practices and procedures;
- Coordinate and conduct departmental orientation regarding specific lifting policies and procedures;
- Conduct risk assessments, as required;
- Assess the requirements for, and promote the acquisition of, lifting and transferring devices and ensure these devices are available and are used;
- Ensure that incident investigations are conducted for all work-related incidents and that appropriate recommendations and corrective actions are taken to reduce the risk of reoccurrence.

Employee

It is the responsibility of all VIHA employees to:

- Utilize appropriate musculoskeletal injury prevention principles;
- Participate in creating and maintaining a safe work environment by following the safe work practices, policies and procedures;
- Report unsafe acts and conditions to his/her supervisor;
- Establish, maintain and demonstrate competency in the application of musculoskeletal injury prevention strategies, materials and patient/resident handling techniques**;**
- Attend required training sessions.

Occupational health and safety services

It is the responsibility of the occupational health and safety services to:

- Develop the MSIP program, as part of the region-wide occupational health and safety program;
- Develop general region-wide policies and procedures that support the MSIP program;
- Provide program reviews and perform audits of the MSIP program implementation. Provide technical support and assistance to departments in conducting risk assessments; conducting ergonomics evaluations of equipment, workstations and work practices and make recommendations for improvements including the acquisition of equipment, as necessary;
- Communicate and collaborate with individual departments to assess activities or processes identified as hazardous;
- Provide coaching and problem solving services with individual managers, workers and/or departments as required; and,
- Establish contact with injured workers and provide a communication link between worker, employer, internal support systems and external agencies.

Joint occupational health and safety committee

The joint occupational health and safety committee is responsible for the following:

- Monitor the implementation of the musculoskeletal injury prevention program by reviewing relevant area/site statistical information and incident investigation reports.
- Through consultation, participate in the annual review of the musculoskeletal injury prevention program and provide recommendations to management.

Reprinted from *VIHA Musculoskeletal Injury Prevention Program* with permission from Vancouver Island Health Authority (2003)

Appendix 6: Signs and symptoms survey

Symptom survey: Ergonomics program

Date _____/ _____/ _____/

Facility:	Department #	Job Name		
Shift	Hours worked/week:	Time on THIS job:	years	months

Other jobs you have done in the last year (for more than 2 weeks)

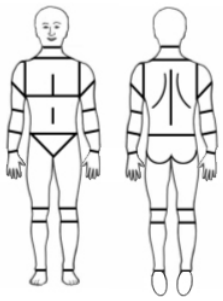
Facility:	Department #	Job Name	Time on THIS job:	years	months
Facility	Department #	Job Name	Time on THIS job:	years	months

(If more than 2 jobs, include those you worked on the most)

Have you had any pain or discomfort during the last year? Yes No (If NO, stop here)

If YES, carefully shade in area of the drawing which bothers you the MOST.
(Complete a separate page for each area that bothers you)

Body Maps



Circle Area:

Neck	**Shoulder**	**Elbow/Forearm**	**Hand/Wrist**
Fingers	**Upper Back**	**Low Back**	**Thigh/Knee**
Low Leg	**Ankle/Foot**		

1. Circle the word(s) that best describe your problem.

Aching	**Numbness (asleep)**	**Tingling**
Burning	**Pain**	**Weakness**
Ramping	**Swelling**	**Other**
Loss of Colour	**Stiffness**	

2. When did you first notice the problem? (month) (year)

3. How long does each episode last? (Mark an X along the line)

1 hour — 1 day — 1 week — 1 month — 6 months

4. How many separate episodes have you had in the last year?

5. What do you think caused the problem?

6. Have you had this problem in the last 7 days? **Yes** **No**

7. How would you rate this problem? (Mark and X on the line)

NOW

None _____ Unbearable

When it is the WORST

None _____ Unbearable

(Continued on next page)

8. Have you had medical treatment for this problem? **Yes** **No**

8a. If No, why not? _____

8b. If Yes, where did you receive treatment?

1. Company Medical Times in past year _____

2. Personal doctor Times in past year _____

3. Other Times in past year _____

8c. Did treatment help? **Yes** **No**

9. How much time have you lost in the last year because of this problem?

10. How many days in the last year were you on restricted or light duty because of this problem? days

11. Please comment on what you think would improve your symptoms

Unless the company is prepared to act on the results of a symptom survey, it should not be conducted. Analysis of the information from a symptom survey is complex. One of the major difficulties is deciding what responses on the questionnaire indicate a problem that may need further evaluation. One approach for scoring results from a survey of this type is to rank-order the number and severity of complaints by body part from the highest to the lowest in frequency and severity. Those jobs linked with the body part showing the most complaints or the highest severity ratings would become the primary candidates for follow-up efforts at analyzing job risk factors and determining needs for risk reduction measures. A second survey, using the same form, completed after ergonomics changes have been made to correct problem jobs, can indicate whether the intended benefits have been achieved. Comparisons of the worker survey data gathered before and after ergonomics changes can furnish this information. One caution here is to allow sufficient time after the intervention to permit the workers to become accustomed to the job change and allow other novelty effects to subside. The second survey should be made no less than two weeks (and preferably one month) after the changes and should be made at the same time and day of the week as the initial survey. Comparisons of Monday morning results with those obtained on Friday afternoon may give faulty results because of differences in worker motivation.

References:

US Department of Health and Human Services — National Institute for Occupational Safety and Health (NIOSH). (1997). Elements of Ergonomics Programs

Appendix 7:
Risk factor identification and assessment checklists

Appendix 7 Includes:

Appendix 7.1

WORKSHEET "A"
MSI Risk Factor Identification

INTRODUCTION

Section 4.47 of the Ergonomics (MSI) Requirements requires an employer to identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MSI). This document can assist in identifying factors that pose a risk of MSI. If a risk is identified, a "moderate" or "high" risk of MSI exists and requires assessment and control. For a complete guide, refer to the WCB documents "*MSI Prevention in the Workplace: A Guide for Employers & Joint Committees*" and "*Understanding the Risks of MSI: An Educational Guide for Workers on Sprains, Strains, and other MSIs.*"

INSTRUCTIONS

1. **Document** the job title or task, date and name of person(s) completing the worksheet.
2. **Observe** a representative sample of workers performing regular work activities.
3. **Read** the minimum criteria listed under each risk factor.
   - If the magnitude is significantly greater than criteria referenced (e.g. pinch grips objects significantly greater than 1 kg), the duration component must be reduced.
   - Duration (for example, 2 hours total per day) refers to the total time per day the worker is exposed to the risk factors, not the duration of the work activity that includes the risk factor. However, when duration is associated with repetition (using the same motion every few seconds) or frequency (for example, more than once per minute), it refers to duration per day of the repetitious task
   - If exposure to risk factor (e.g. 2 hours total per day) is continuous, the risk to workers will be significantly greater than intermittent exposure distributed over a shift.
4. **Check** the box √ for that risk factor if any criteria listed are present
5. **Write** notes for any identified risk factor to clarify the task or duty where it occurs.
   - *Risk factors marked in the box pose at least moderate risk to workers and require further assessment and control.*
6. **Go** to "Worksheet B - Risk Factor Assessment" if any risk factors are identified. Fill out the "Risk Factors Summary – Moderate Risk" to summarize the risk factors identified on Worksheet A.

Note: Some aspects of contact stress (e.g. hand tools digging into skin) and force (e.g. pushing/pulling/carrying loads) are not included. Also, some risk factors (e.g. cold temperature, characteristics of objects handled) are not addressed. Persons using these worksheets need to address them separately and minimize the risk to workers.

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WORKSHEET "A"
MSI RISK FACTOR IDENTIFICATION

Job Title or Task: _____ **Date (mm/dd/yr):** _____

Completed By: _____

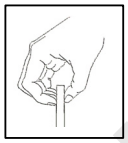
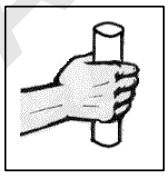
Notes:

_____ _____

Employer Representative **Worker Representative**

CONTACT STRESS	IF ANY OF THE FOLLOWING CRITERIA ARE PRESENT, MARK THE ASSESSMENT BOX → ☐	PERFORM CONTACT STRESS ASSESSMENT
1	• Worker uses the one of the following as a hammer more than 10 times per hour and for more than 2 hours total per day** – Hand (heel/base of palm), or – Knee (An extremely severe contact stress usually results in a traumatic injury such as bruising and therefore is not considered an MSI risk factor.)	Notes

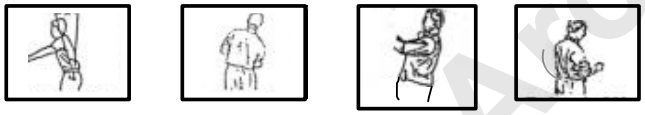
REPETITION	IF ANY OF THE FOLLOWING CRITERIA ARE PRESENT MARK THE ASSESSMENT BOX → ☐	PERFORM REPETITION ASSESSMENT
1	• Worker repeats the same motion with the neck, shoulders, elbows, wrists, or hands every few seconds with little or no variation for more than 2 hours total per day (excluding keying activities)	Notes
2	• Worker performs intensive keying more than 4 hours total per day	

FORCE	For the purposes of MSI risk identification, force can be classified as grip force, or lift/lower force	
GRIP FORCE	**IF ANY OF THE FOLLOWING CRITERIA ARE PRESENT MARK THE ASSESSMENT BOX →**	☐ **PERFORM GRIP FORCE ASSESSMENT**
Pinch Grip**	• Pinch gripping an unsupported object(s) weighing 1 kg (2 lbs.) or more per hand for more than 2 hours total per day OR • Pinch gripping with a force of 2 kg (4 lbs.) or more per hand for more than 2 hours total per day Pinch Grip 	Notes
Power Grip**	• Power gripping an unsupported object(s) weighing 5 kg (10 lbs.) or more per hand for more than 2 hours total per day OR • Power gripping with a force of 5 kg (10 lbs.) or more for more than 2 hours total per day Power Grip 	

**

Note: A pinch grip occurs when the force application is primarily between the fingers and thumb. A power grip occurs when the force is primarily between the fingers and the palm.

LIFT/LOWER FORCE	IF ANY OF THE FOLLOWING CRITERIA ARE PRESENT MARK THE ASSESSMENT BOX →	☐ PERFORM LIFT/LOWER ASSESSMENT
1	• Lifting objects weighing more than 75 lbs. once per day	Notes
2	• Lifting objects weighing more than 25 kg (55 lbs.) more than 10 times per day.	
3	• Lifting objects weighing > 5 kg (10 lbs.) if done more than twice per minute, more than 2 hours total per day	
4	• Lifting objects weighing more than 11 kg (25 lbs.) more than 25 times per day and – Above the shoulders, or – Below the knees, or – At arms length from the body	

AWKWARD POSTURE:	IF ANY OF THE FOLLOWING CRITERIA ARE PRESENT MARK THE ASSESSMENT BOX → ☐	PERFORM POSTURE ASSESSMENT
Neck	Worker performs <u>any</u> minimum joint deviations: • Working with the neck bent more than 30° in any direction for more than 2 hours total per day  Side Backward Forward (circle the appropriate movements)	Notes
Shoulder Back	• Working with the hand(s) above the head more than 2 hours total per day • Working with the elbow(s) above the shoulder more than 2 hours total per day • Working with the back bent more than 30° in any direction for more than 2 hours total per day  Forward Side Backward Twisted (circle the appropriate movements)	
Knees	• Worker squats/ kneels more than 2 hours total per day  (circle the appropriate movements)	

VIBRATION	IF ANY OF THE FOLLOWING CRITERIA ARE PRESENT MARK THE ASSESSMENT BOX → ☐	PERFORM VIBRATION ASSESSMENT
1	• Use high vibration tools (impact wrenches, carpet strippers, chain saws, jack hammers, scalers, riveting hammers) for more than 30 minutes total per day	Notes
2	• Use moderate vibration hand tools (grinders, sanders, jig saws) that typically have moderate vibration levels more than 2 hours total per day	

Appendix 7.2

WORKSHEET "B"
MSI RISK FACTOR ASSESSMENT

- TO DETERMINE HIGH RISK FROM RISK IDENTIFICATION: PHYSICAL DEMANDS OF WORK -

Job Title or Task: _____

Date: _____ (mm/dd/yr) Completed By: _____

Section 4.48 in the Ergonomics (MSI) Requirements requires an employer to assess those factors that expose workers to a risk of MSI. This document can be used to determine if the risk(s) identified in the document titled "Worksheet A - MSI Risk Factor Identification" pose a "high" or "moderate" risk.

INSTRUCTIONS:

1. Document the job title or task, date and name of person(s) completing the worksheet. Risk assessment should be performed by someone who understands the work process, the MSI risk factors, and the principles of risk assessment and control.
2. Complete the "Risk Factor Summary-Moderate Risk" from "Worksheet A – Risk Factor Identification." These risk factors are considered to pose at least a "moderate" risk of MSI.
3. Perform "Risk Factor Assessment" only on those factors identified from "Worksheet A."
4. Observe and consult with a representative sample of workers and those workers with signs & symptoms of MSI.
5. Read across the page under each risk factor and determine if all of the conditions in that row are present in the work activities.
   - *Explanatory notes regarding **magnitude, duration** and **exposure pattern** under "Instructions" in Worksheet A also apply to Worksheet B.*
6. Check the box to indicate that a "high" risk of MSI exists if all conditions are present.
   - *Make any appropriate notes to clarify specific details.*
7. Complete the "High Risk" column of the Risk Factor Summary Table.

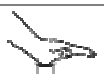
INTERPRETATION OF RESULTS

The risk factors in the "high risk" column require that controls must be implemented without undue delay. Controls should eliminate, or if that is not practicable, minimize the risk of MSI to workers. If the risk remains "moderate," controls will be required to minimize the risk of MSI. For assistance in developing controls, refer to the WCB document, "*Common Risk Control Options.*"

RISK FACTOR SUMMARY TABLE

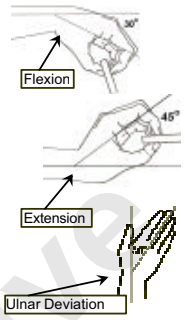
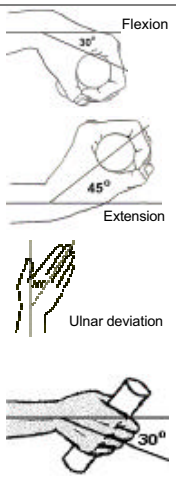
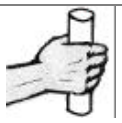
RISK FACTOR	"MODERATE RISK" Risk Factors Identified from Worksheet "A"	"HIGH RISK" Risk factors Indicated from Assessment Worksheet "B"
CONTACT STRESS	❑	❑
REPETITION	❑	❑
GRIP FORCE	❑	❑
LIFT/LOWER FORCE	❑	❑
AWKWARD POSTURE	❑	❑
VIBRATION	❑	❑

Workers' Compensation Board of B.C.

CONTACT STRESS:				Mark ✓ here to indicate a High Risk of MSI
BODY PART	**PHYSICAL RISK FACTOR**	**DURATION**	**VISUAL AID**	
HANDS	Using the hand (heel/base of palm) as a hammer more than once per minute	More than 2 hours total per day **		❑
KNEES	Using the knee as a hammer more than once per minute	More than 2 hours total per day		❑

REPETITION:				Mark ✓ here to indicate a High Risk of MSI
BODY PART	**PHYSICAL RISK FACTOR**	**COMBINED WITH**	**DURATION**	
NECK SHOULDERS ELBOWS WRISTS HANDS	Using the same motion with little or no variation every few seconds (exclude keying activities)	No other risk factors	More than 6 hours total per day	❑ Neck ❑ Shoulders ❑ Elbows ❑ Wrists ❑ Fingers
WRISTS HANDS	Using the same motion with little or no variation every few seconds (exclude keying activities)	Wrists bent in; = 30° flexion, or = 45° extension, or = 30° ulnar deviation, AND High forceful hand(s) exertions	More than 2 hours total per day	❑
	Intensive keying *Keying with the hands or fingers in a rapid, steady motion with few opportunities for temporary work pauses.*	Awkward wrist posture, = 30° flexion, or = 45° extension, or = 30° ulnar deviation	More than 4 hours total per day	❑
		No other risk factors	More than 7 hours total per day	❑

Workers' Compensation Board of B.C. Worksheet "B" – MSI Risk Factor Assessment

GRIP FORCE					
BODY PART	**PHYSICAL RISK FACTOR**	**COMBINED WITH**	**DURATION**	**VISUAL AID**	**Mark ✓ here to indicate a High Risk of MSI**
ARMS WRISTS HANDS	Pinch gripping** an unsupported object(s) • Weighing 1 kg (2 lbs) or more per hand, OR • Pinch gripping with a force of 2 kg (4 lbs) or more per hand (comparable to pinch gripping half a stack of photo-copy paper)	Highly repetitive motion	> 3 hours total per day		❑
		Wrists bent in = 30° flexion, or = 45° extension, or = 30° ulnar deviation circle the appropriate movements	More than 3 hours total per day		❑
		No other risk factors	More than 4 hours total per day		❑
ARMS WRISTS HANDS	Power gripping** an unsupported object(s) • Weighing 5 kg (10 lbs) or more per hand OR • Power gripping with a force of 5 kg (10 lbs) or more per hand (comparable to clamping light duty automotive jumper cables onto a battery)	Highly repetitive motion	> 3 hours total per day		❑
		Wrists bent in = 30° flexion, or = 45° extension, or = 30° ulnar deviation circle the appropriate movements	More than 3 hours total per day		❑
		No other risk factors	More than 4 hours total per day		❑

**Note: A pinch grip occurs when the force application is primarily between the fingers and thumb. A power grip occurs when the force a primarily between the fingers and the palm.

LIFT/ LOWER FORCE RISK ASSESSMENT - TO DETERMINE HIGH RISK

This document can be used to assess forceful exertion due to lifting/ lowering force. Weight limits in this document represent "high" risk that require controls without undue delay.

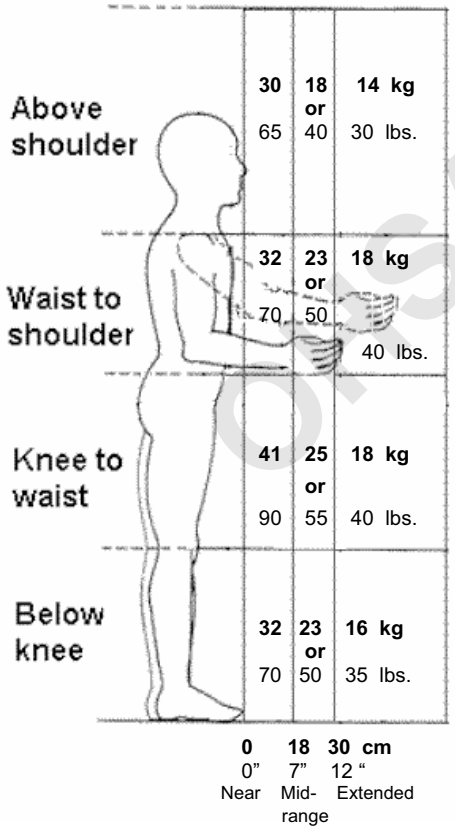
Mark one of the two boxes ( ) to indicate which assessment situation applies. _____

- ❑ With one specific lift or when repeating the same lift, use Steps 1-5 below.
- ❑ When there is a number of lifts with different weights and/or different postures, use Steps 1-5 to:
  1. Assess the two worst case lifts - the heaviest object lifted and the lift in the most awkward posture, AND
  2. The most commonly performed lift. In Step 3, use the frequency and duration for all of the lifting done in a typical workday.

Step 1 Find the actual weight of the object that the employee lifts.

Actual Weight = _____

Step 2 **Determine the Unadjusted Weight Limit.** Determine the most awkward hand position during the lift/ lower task. Mark that spot on the diagram below. The number in that box is the **Unadjusted Weight Limit.**



Unadjusted Weight Limit: _____

Step 3 **Find the Limit Reduction Modifier.** Find out how many times the employee lifts per minute and the total number of hours per day spent lifting. Use this information to look up the **Limit Reduction Modifier** in the table below.

How Many Lift per Minute?	For How Many Hours per Day?		
	1 hr or less	1 hr to 2 hrs	2 hrs or more
1 lift every 2-5 min.	1.0	0.95	0.85
1 lift every minute	0.95	0.9	0.75
2-3 lifts every minute	0.9	0.85	0.65
4-5 lifts every minute	0.85	0.7	0.45
6-7 lifts every minute	0.75	0.5	0.25
8-9 lifts every minute	0.6	0.35	0.15
10+ lifts every minute	0.3	0.2	0.0

Note: For lifting performed less than once every five minutes, use 1.0

Limit Reduction Modifier: _____

Step 4 **Calculate the Weight Limit.** Start by copying the Unadjusted Weight Limit from Step 2.

Unadjusted Weight Limit (Step 2)**: = _____**

If the employee twists more than 45 degrees while lifting, reduce the Unadjusted Weight Limit by multiplying by 0.85. Otherwise, use the Unadjusted Weight Limit

Twisting Adjustment: = _____.____

Adjusted Weight Limit: = _____

Multiply the Adjusted Weight Limit by the Limit Reduction Modifier from Step 3 to get the **Weight Limit**. **X**

Limit Reduction Modifier (Step 3)**: _____.___**

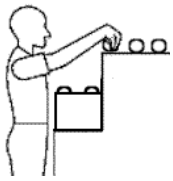
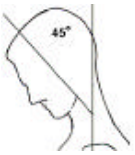
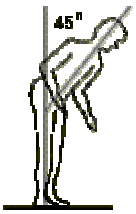
Actual Weight = _____ **Weight Limit: = ____**

Step 5 **Is this a hazard?** Compare the Actual Weight lifted from Step 1 to the calculated Weight Limit in Step 4. If the

Actual Weight (Step 1) > **the Weight Limit** (Step 4),

then the lift is "high" risk and requires controls without undue delay to the degree technologically and economically feasible. If the Actual Weight is below the Weight Limit, the risk is "moderate" and requires consideration for control.

Worksheet "B" – MSI Risk Factor Assessment

AWKWARD POSTURE				Mark ✓ here to indicate a High Risk of MSI
BODY PART	**PHYSICAL RISK FACTOR**	**DURATION**	**VISUAL AID**	
Knees	Squatting	More than 4 hours total per day		❑
	Kneeling	More than 4 hours total per day		❑
Shoulders	Working with the hand(s) above the head or the elbow(s) above the shoulder(s)	More than 4 hours total per day		❑
	Repetitively raising the hand(s) above the head or the elbow(s) above the shoulder(s) more than once per minute	More than 4 hours total per day		❑
Neck	Working with the neck bent more than 45º (without support or the ability to vary posture)	More than 4 hours total per day		❑
Back	Working with the back bent forward more than 30º (without support, or the ability to vary posture)	More than 4 hours total per day		❑
	Working with the back bent forward more than 45º (without support or the ability to vary posture)	More than 2 hours total per day		❑

VIBRATION RISK ASSESSMENT– TO DETERMINE HIGH RISK

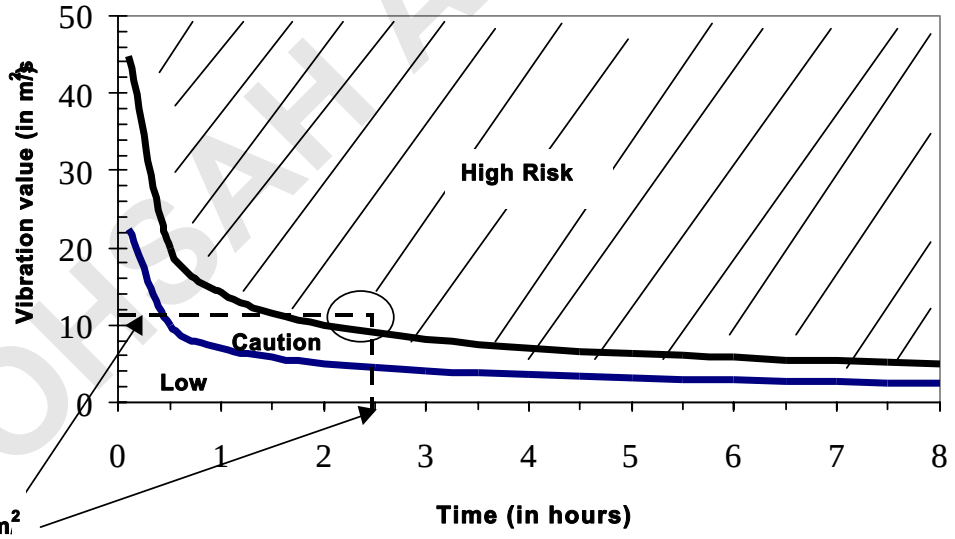
Use this document to determine if a "high" risk of MSI from hand-arm vibration exists

Step 1 Find the vibration value for the tool. (Get it from the manufacturer, look it up at this web site: http://umetech.niwl.se/vibration/HAVHome.html, or you may measure the vibration yourself). The vibration value will be in units of meters per second squared (m/s^2). On the graph below find the point on the left side that is equal to the vibration value.

Step 2 Determine how many total hours per day the employee is using the tool and find that point on the bottom of the graph.

Step 3 Trace a line in from each of these two points until they cross.

Step 4 If that point lies in the crosshatched "High Risk" area above the upper curve, then the vibration exposure is "high risk" and requires controls without undue delay. The vibration must be reduced below the high risk level or to the degree technologically and economically feasible. If the point lies between the two curves in the "Caution" area, then the job is of "moderate risk" and may merit controls to minimize the risk of MSI. If it falls in the "Low" area below the bottom curve, then no further steps are required.



Example:
An impact wrench with a **vibration value of 12 m^2** is used for **2½ hours** total per day. The exposure level is in the High Risk area. The vibration must be reduced below the high risk level or to the degree technologically and economically feasible.

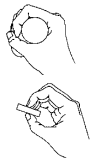
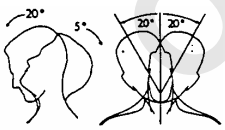
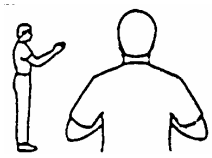
Note: The caution limit curve (bottom) is based on an 8-hour energy-equivalent frequency-weighted acceleration value of 2.5 m/s^2. The high risk limit curve (top) is based on an 8-hour energy-equivalent frequency- weighted acceleration value of 5 m/s^2.

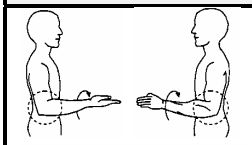
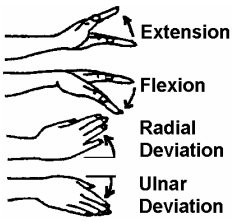
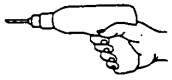
Appendix 7.3 Manitoba Labour Ergonomic Risk Factor Checklist

ERGONOMIC RISK FACTOR CHECKLIST

UPPER EXTREMITY RISK FACTOR CHECKLIST

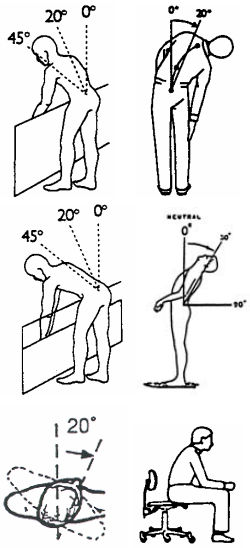
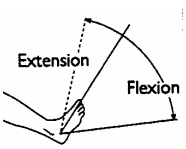
Date: _____ Analyst: _____ Job: _____ Location:

RISK FACTOR CATEGORY	RISK FACTORS	EXPOSURE Is the risk factor present within the job or task?	TIME				SCORE
			0% to 25% of total job time	25% to 50% of time	50% to 100% of time	If total time for job is >8hrs, add 0.5 per hour	
Upper Limb Movements	**1.** Moderate: Steady motion with regular pauses	☐ YES ☐ NO	0	1	2		
	2. Intensive: Rapid steady motion without regular pauses	☐ YES ☐ NO	1	2	3		
Keyboard Use 	**3.** Intermittent Keying	☐ YES ☐ NO	0	0	1		
	4. Intensive Keying	☐ YES ☐ NO	0	1	3		
Hand Force (Repetitive or Static) 	**5.** Squeezing Hard with the Hand in a Power Grip	☐ YES ☐ NO	0	1	3		
	6. Pinch More than 2 pounds	☐ YES ☐ NO	1	2	3		
Awkward Postures  	**7.** Neck: Twist/Bend (twisting neck >20°, bending neck forward >20° or back < 5°)	☐ YES ☐ NO	0	1	2		
	8. Shoulder: Unsupported arm or elbow above mid-torso height	☐ YES ☐ NO	1	2	3		

RISK FACTOR CATEGORY	RISK FACTORS	EXPOSURE Is the risk factor present within the job or task?	TIME				SCORE
			0% to 25% of job time	25% to 50% of time	50% to 100% of time	If job time is >8hrs, add 0.5 per hour	
	**9.** Rapid Forearm Rotation	☐ YES ☐ NO	0	1	2		
	**10.** Wrist: Bend or Deviate	☐ YES ☐ NO	1	2	3		
Contact Stress 	**11.** Hard/Sharp objects Press into Skin	☐ YES ☐ NO	0	1	2		
	12. Using the Palm of the Hand or Wrist as a Hammer	☐ YES ☐ NO	1	2	3		
Vibration 	**13.** Localized Vibration (without dampening)	☐ YES ☐ NO	0	1	2		
	**14.** Whole-body Vibration (without dampening)	☐ YES ☐ NO	0	1	2		
Environment	**15.** Lighting (poor illumination or glare)	☐ YES ☐ NO	0	0	1		
	16. Adverse Temperatures	☐ YES ☐ NO	0	0	1		
Control Over Work Pace	**17.** One control factor present = 1 Two or more control factors present = 2	☐ YES ☐ NO					
TOTAL UPPER EXTREMITY SCORE							

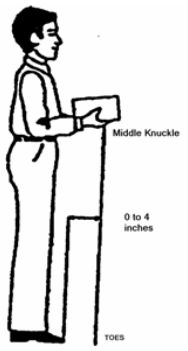
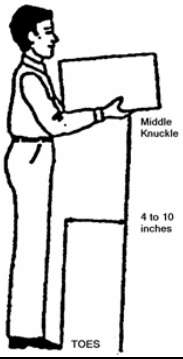
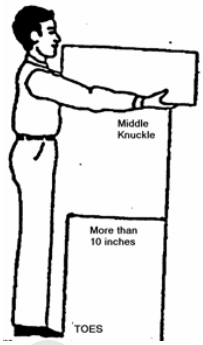
BACK AND LOWER EXTREMITY RISK FACTOR CHECKLIST

Date: _____ Analyst: _____ Job: _____ Location:

RISK FACTOR CATEGORY	RISK FACTORS	EXPOSURE Is the risk factor present within the job or task?	TIME				SCORE
			0% to 25% of job time	25% to 50% of time	50% to 100% of time	If job time is >8hrs, add 0.5 per hour	
Awkward Postures  	**18.** Mild Forward or Side Bending of Torso More than 20° but Less than 45°	☐ YES ☐ NO	0	1	2		
	19. Severe Forward Bending of Torso More than 45°	☐ YES ☐ NO	1	2	3		
	20. Backward Bending of Torso	☐ YES ☐ NO	0	1	2		
	21. Twisting of Torso	☐ YES ☐ NO	1	2	3		
	22. Prolonged Sitting Without Adequate Back Support	☐ YES ☐ NO	0	1	2		
	23. Standing Stationary or Inadequate Foot Support While Seated	☐ YES ☐ NO	0	0	1		
	24. Foot action (pedal), Standing Stationary with Inadequate Foot Support, Balancing	☐ YES ☐ NO	0	1	2		
	25. Kneeling/ Squatting	☐ YES ☐ NO	1	2	3		
	26. Hip Abduction (Repetitive/ Prolonged)	☐ YES ☐ NO	0	1	2		
	27. Repetitive Ankle Extension/ Flexion	☐ YES ☐ NO	0	1	2		

RISK FACTOR CATEGORY	RISK FACTORS	EXPOSURE Is the risk factor present within the job or task?	TIME				SCORE
			0% to 25% of job time	25% to 50% of time	50% to 100% of time	If job time is >8hrs, add 0.5 per hour	
Contact Stress	**28.** Hard/Sharp objects Press into Skin	☐ YES ☐ NO	0	1	2		
	29. Using the Knee as a Hammer or Kicker	☐ YES ☐ NO	1	2	3		
Vibration 	**30.** Whole-Body Vibration (without dampening)	☐ YES ☐ NO	0	1	2		
Push/Pull	**31.** Moderate Load	☐ YES ☐ NO	0	1	2		
	32. Heavy Load	☐ YES ☐ NO	1	2	3		
Control Over Work Pace	**33.** One control factor present = 1 Two or more control factors present = 2	☐ YES ☐ NO					
MANUAL HANDLING CHECKLIST SCORE (Add scores 2 & 3 from page 3 and insert total here)							
TOTAL BACK AND LOWER EXTREMITY SCORE							

MANUAL HANDLING CHECKLIST

34(a). STEP I:	NEAR LIFT	MIDDLE LIFT	FAR LIFT
Determine If the Lift is Near, Middle, or Far (Body to Hands) - Use an average horizontal distance if a lift is made every 10 minutes or less. - Use the largest horizontal distance if more than 10 minutes pass between lifts.			

34(b). STEP II:	NEAR LIFT		MIDDLE LIFT		FAR LIFT	
Estimate the Weight Lifted (Pounds) - Use an average weight if a lift is made every 10 minutes or less. - Use the heaviest weight if more than 10 min. pass between lifts. - Enter 0 in the total score if the weight is 10 lb or less.	**DANGER ZONE**	More than 51 lb 5* points	**DANGER ZONE**	More than 35 lb 6 points	**DANGER ZONE**	More than 28 lb 6 points
	CAUTION ZONE	17 to 51 lb 3 points	**CAUTION ZONE**	12 to 35 lb 3 points	**CAUTION ZONE**	10 to 28 lb 3 points
	SAFE ZONE	Less than 17 lb 0 points	**SAFE ZONE**	Less than 12 lb 0 points	**SAFE ZONE**	Less than 10 lb 0 points

*If lifts are performed more than 15 times per shift, use 6 points. **STEP II SCORE:**

STEP III:	Factor	Occasional lifts (<1 hr/shift)	Frequent lifts (>1 hr/shift)	
Determine the Points for Other Risk Factors - Use occasional lifts if more than 10 minutes pass between lifts - Use the more than 1 hour points if the risk factor occurs with most lifts and lifting is performed for more than 1 hour	**35.** Twist torso during lift	1	1	
	36. Lift one-handed	1	2	
	37. Lift unexpected loads	1	2	
	38. Lift 1-5 times/minute	1	1	
	39. Lift > 5 times/minute	2	3	
	40. Lift above the shoulder	1	2	
	41. Lift below the knuckle	1	2	
	42. Carry objects 10 - 30 feet	1	2	
	43. Carry objects > 30 feet	2	3	
	44. Lift while seated or kneeling	1	2	
		STEP III SCORE:		

User's Guide to Filling in the Ergonomic Risk Factor Checklist

The purpose of this booklet is to provide an explanation of the content and use of the Ergonomics Risk Factor (ERF) Checklist. A checklist is only one part of an ergonomics analysis, and works best as a preliminary tool for observing a job and characterizing the levels of risk factors present within a job. A checklist does not provide answers, but instead provides a means of remembering what to analyse and an indication of what factors could be a problem within a job.

The ERF checklist was created to address the situations found within an industrial manufacturing environment. The design of the ERF checklist emphasizes the identification of the combination of risk factors that occur most frequently in industry, and those associated with the highest magnitude of risk. The checklist is divided into three parts: risk factors for the upper extremity, risk factors for the back and lower extremity, and risk factors associated with manual materials handling. Within each of the parts, risk factors are assigned scores that increase with duration of exposure to each risk factor. To utilize the checklist, the analyst (you) must evaluate a work task or job to determine which, if any, risk factors are present and for how long each day the worker is exposed to each risk factor. The assigned scores for each combination of risk factor exposure/duration identified are added separately for the upper limb and the low back. Scoring risk factors for the upper limb and the low back are kept separate because simultaneous exposure to an upper extremity risk factor and a low back risk factor does not generally affect the same joint or anatomic region.

General Instructions

The following is a quick guide on how to perform an analysis using the ERF checklist. All components of the checklist should be filled out for each job or task to ensure that a full analysis has been performed.

STEP 1 - Familiarize Yourself with the Job

The first step in the analysis process is to familiarize yourself with the job. The two key ways to do this is through observation and interview. Stand back and watch the person perform the job for a few minutes; you are trying to get a feel for the range of activities that the person must perform in a day. To ensure that you are seeing everything that the person does, talk with the worker and ask them some questions about their job. Once you have observed the job and interviewed the worker, you should now complete the ***Ergonomics Analysis Worksheet***. You do not have to fill these spaces, and you may need room to add more information later.

Within ***Job Description*** you should try and describe the job on two levels: general and specific. The general description should detail the goals and duties that are involved with this job; this will provided a base for understanding why the person is performing various duties. The specific description should break down a job into the actions that are required to perform it. For instance: pick up part A from bin B and place on table C. These statements describe the general movements of the person and the sequencing of these movements.

The ***Comments*** you make about a job should provide additional, useful pieces of information that do not fit within the structure of the checklist, and may be relevant for further analyses. Within this section, you can make general remarks about the workstation, environment, job, or worker. You may want to include any measurements that you were able to perform (e.g. mass, dimensions, temperature, etc.). You could also include information pertaining to the anthropometrics (body, size and type) of the person, and how well this matches with the workstation. Upon completion of the risk factor analyses (Steps2-4), you could also comment on which parts of the task tended to contain which risk factors (i.e. was there any specific task that was causing trouble?)

The goal of an ergonomic analysis is to ensure that the job fits the worker. Therefore, the input on the person performing the job is a key part of the analysis. To fill out the ***Worker Interview*** portion of the checklist, you must talk with the person and gain their insight into the daily workings of the job. Some questions that could provide some useful information are:

- Could you explain what you do for me?
- Is this what you do all day, or do your duties change at any time?
- If you could improve this job in any way, what would you change?
- Do you feel any aches, pains, etc., that you feel are related to your job?
- If YES, what parts of your job are a problem to you?

STEP 2 – Determine What Risk Factors are Present

The next step within the checklist analysis is to determine what risk factors the person is being exposed to over the course of a day. If you look at these pages, you will note that the checklist is divided into columns; you will be filling out the column with the title ***Exposure***. The exposure column contains simple yes/no questions, requiring you to answer whether or not the person is being exposed to the various risk factors described in each row. REMEMBER, you should have read and understood the risk factor definitions before you attempt to perform this step in the analysis, or any further ones.

You should look at each risk factor, and observe the job to determine if the person is exposed to this factor at any time. If exposure exists, enter a YES; if the risk factor does not occur within this job, then check off NO. Once you have addressed all of the risk factors, then you can move on to Step 3.

STEP 3 – Determine the Duration of Exposure to the Risk Factors

In Step 2, you determined WHAT the person is being exposed to. Now, you must determine HOW LONG (***Time*** column) the person is exposed to each risk factor. For every risk factor that you recorded a YES for in Step 2, you will now evaluate the length of time that the person is exposed to this factor. The risk factors that were found not present for this job, and were checked NO in Step 2, can be ignored in Step 3.

The duration of exposure you are measuring here is not how long a person does a job, but instead how long the person does what is described as a risk factor. As an example:

Joe performs a job on a production line that has a cycle time (or job cycle) of 60 seconds; he does this job for 8 hours per day. For 45 seconds of every cycle, Joe works with his wrist deviated. For 20 seconds of every cycle, Joe's elbow is above mid-torso level. For 5 seconds of every cycle, Joe is bent forward greater than 45°. The easiest way to look at this job is to consider the job cycle to be representative of the entire day (i.e. whatever Joe does for 60 seconds, he does for 8 hours). Therefore, if Joe's wrist is deviated for 30 seconds every cycle, then through simple math (45/60 = 0.75), Joe spends ¾ of his day or 6 hours with his wrist deviated. You would then give Joe a score of 3 for wrist deviation. Using the same format, you can calculate that Joe spends approximately 3 hours per day with his elbow above mid-torso level, and less than 1 hour per day with his torso bent forward greater than 45°. These durations of exposure would result in a score of 2 for shoulder posture and a score of 1 for trunk posture.

Regardless of the length of work cycle, the principal is the same for determining duration of exposure. All that you have to remember is that you are measuring how long the person is exposed to the individual risk factor, and this does not always correspond to the actual duration of the job.

Once you have determined the duration of exposure for a risk factor, and have determined the score that corresponds to this exposure, you should then circle this score in the appropriate column and write down this score in the far right column. When you have completed both the Upper Limb and the Back & Lower Extremity Checklists, look over each checklist to ensure that every risk factor that has a YES in the ***Exposure*** column has a score in ***Time*** column. Additionally, every risk factor that was checked NO in the ***Exposure*** column should have no score in the **Time** column. Once you have completed this task, you can now go on to Step 4.

STEP 4 – Evaluation of Manual Materials Handling

The Manual Materials Handling (MMH) checklist is designed to evaluate the risk factors associated with lifting and carrying materials. The MMH checklist focuses on such variables as the location of the item being the lift, the mass of the item, how often the items is lifted, and the posture of the person while handling the item. To perform this analysis, the MMH checklist guides you through 3 distinct steps.

The first step in the analysis is to determine the ***Horizontal Distance*** of the load from the body. The distance is divided into 3 categories: near (0 to 4 inches), middle (4 to 10 inches), and far (more than 10 inches). These ranges refer to the distance from the toes of the person to the middle knuckle.

The second step in the analysis is to estimate the ***Weight*** of the item being lifted. If an item is lifted every 10 minutes or less, then use the average weight of all the items being lifted. If more than 10 minutes pass between lifts, then use the heaviest weight that the person lifts. Once you have established the ***Weight*** of the item, you then combine this information with your estimate of ***Horizontal Distance*** to determine your score for Step II. For example: a job where a person lifts a 20 lb load at a middle distance from the body (4 to 10 inches) would receive a score of 3 points. If the person does not lift any item that are greater than 10 lbs, then a score of 0 would be given to this job.

The third steps in the MMH analysis is to evaluate the ***Other Risk Factors*** that are related to handling loads. This third step is completely separate from step II; therefore, even if the items being lifted are not above 10 lbs, you should still fill out this section. The procedure for filling out this section is similar to that of the Risk Factor checklists for the Upper Extremity and Back & Lower Extremity. Your first decision is with respect to duration of exposure: how often and how long do the MMH activities occur? If lifting is only occasional, and more than 10 minutes pass between lifts, then you will be choosing values from the first column titled ***Occasional Lifts***. If the risk factor occurs with most lifts, and lifting occurs for more than 1 hour, then you will be using the values from the second column titled ***Frequent Lifts***. Once you have determined which column you will be using, your next task is to review each risk factor and determine whether or not the person is exposed to this factor. If the person is exposed to the factor, then circle the score in the appropriate column and transfer this value to the far right column. Once you have evaluated all of the risk factors, add up the scores in the right hand column and place the total in the box marked STEP III SCORE.

The MMH checklist is really a component of the Back & Lower Extremity checklist. As such, the scores you obtain from the MMH checklist are recorded within the Back & Lower Extremity checklist, and contribute to the total score in this checklist. Once you have completed the MMH

checklist, add up your scores from Steps II & III and record this value in the second last row of the Back & Lower Extremity checklist. You are now ready to move on to STEP 5 of the analysis.

STEP 5- Add up the Checklist Scores

The next step in the analysis is to determine the ***Total Scores*** for the Upper Limb and Back & Lower Extremity Checklists. All that is required here is to add up the scores in the far right column for each of the checklists, and record the total at the bottom of each checklist.

STEP 6 – Opportunities for Improvement

The final stage of the analysis is to record any actions that you feel could be performed to improve the job. After observing the job, talking with the worker, and performing the checklist analysis, are there any recommendations that you can make? You could recommend that certain aspect of the job be looked at in more detail before any decisions are made. The size and importance of your ideas are irrelevant; the key here is to record some ideas while you are there and the information is fresh in your head. Do some quick brainstorming, and try not to leave before you have written down at least 2 or 3 ideas. You can record your thoughts in the ***Comments*** section of the EAW.

Reprinted from *Ergonomics: A guide to program development and implementation* with permission from Manitoba Labour and Immigration (1999).

Appendix 7.4 Laundry department risk factor identification checklist

This checklist can be used to identify potential risk factors for musculoskeletal injuries. Use this checklist after you are familiar with the tasks performed in the laundry room. Placing checkmarks in the "Yes" column indicates potential risk factors may be present.

Observer: _____ Date: _____

Potential risk factor	Yes	No	N/A
Laundry bins			
Do workers bend excessively at the trunk to push laundry bins?			
Do workers bend excessively at the trunk to reach laundry at the bottom of bins?			
Do workers push laundry bins over long distances (greater than 60 m)?			
Do the bins have poor handles or are handles non-existent?			
Are the bins difficult to manoeuvre?			
Are the bins difficult to push?			
Laundry bags			
Are laundry bags heavy to lift (i.e., heavier than 11 kg [25 lb.])?			
Are bags overstuffed on a regular basis?			
Do workers have difficulty removing laundry from bags?			
Do workers use awkward postures to lift and transfer bags?			
Sorting dirty laundry			
Are the gloves used to handle dirty laundry poor fitting or non-existent?			
Do workers sort dirty laundry directly on the floor?			
Do workers use awkward trunk, shoulder, elbow, or wrist postures to sort laundry?			
Do workers use pinch grips to grasp laundry?			
Do workers sort laundry into many categories and then combine the categories later?			
Washing and drying			
Do workers bend excessively at the waist to load or unload washers and dryers?			
Do workers use forceful exertion to push laundry into machines?			
Do workers use forceful exertion to pull laundry out of machines?			
Do workers reach excessively into machines to remove laundry?			
Do workers reach over bins to access washers or dryers?			

Potential risk factor	Yes	No	N/A
Folding laundry			
Do workers fold laundry repetitively for more than three hours per shift?			
Do workers use awkward neck, shoulder, elbow, wrist, or low back postures to fold laundry?			
Do workers use pinch grips to hold laundry when folding?			
Is the folding table non-existent or at a poor working height? It should be 5–15 cm (2–6 in.) below elbow height.			
Laundry carts			
Do workers reach excessively to access high shelves on carts?			
Do workers bend excessively at the waist to access low shelves on carts?			
Do workers use awkward postures to push or pull carts?			
Are carts difficult to manoeuvre?			
Are carts difficult to push?			
Is visibility limited or reduced when operating carts?			
Environmental hazards			
Are workers required to stand continuously for more than three hours during a shift?			
Is the laundry room extremely noisy?			
Is the temperature in the laundry room extremely hot?			
Do workers experience frequent or painful static shocks?			
Do workers use the palms of their hands like hammers to open sticky handles on machines?			
Is the laundry room cluttered or overfilled with laundry carts and bins?			

Reference:

Occupational Health and Safety Agency for Healthcare (OHSAH) in BC. (2003) An *Ergonomics Guide to Hospital Laundries*

Appendix 7.5 Patient handling risk factor identification checklist

This checklist can be used to identify potential risk factors for musculoskeletal injuries. Placing checkmarks in the "Yes" column indicates potential risk factors may be present.

Observer: _____ Date: _____

Potential risk factor	Yes	No
Use of ceiling lift		
Is the worker pushing upward on the back of the patient while the patient is in the sling?		
Is the worker pulling excessively on the straps of the sling during sling placement or removal?		
Is the worker lifting the upper body of the patient to place or remove the sling?		
Is the worker bending over at the waist excessively while attaching/removing the sling?		
Is the worker twisting his/her upper body while keeping the feet stationary during sling placement or removal?		
Is the bed below mid-thigh level or above hip level during sling placement/removal?		
Are the bed rails up on the side that the worker is standing on?		
Are there visible signs of strain on the worker's face?		
Does the worker experience any pain or discomfort during use of the ceiling lift?		
Dressing		
Does the worker maintain a position of awkward trunk flexion (bending over at the waist) for more than 30 seconds?		
Does the worker maintain a position of awkward trunk twisting (twisting the upper body while keeping the feet stationary) for more than 30 seconds?		
Does the worker maintain a position of awkward shoulder flexion (arm raised forward) or abduction (arm raised to the side) for more than 30 seconds?		
Is the worker having difficulty putting pants on the patient?		
Is the worker having difficulty putting the patient's shirt on?		
Is the worker bending over at the waist excessively while dressing the patient?		
Is the worker twisting his/her upper body excessively while dressing the patient?		
Is the worker reaching excessively while dressing the patient?		
Does the worker experience any pain or discomfort while dressing the patient?		

Potential risk factor	Yes	No
Use of floor lift		
Is the worker pushing upward on the back of the patient while the patient is in the sling?		
Is the worker pulling excessively on the straps of the sling during sling placement or removal?		
Is the worker lifting the upper body of the patient to place or remove the sling?		
Is the worker having difficulty pushing/pulling the floor lift?		
Is the worker pulling the floor lift with one arm?		
Is the worker bending over at the waist excessively while attaching/removing sling?		
Is the worker twisting his/her upper body while keeping the feet stationary during sling placement or removal?		
Is the bed below mid-thigh level or above hip level during sling placement/removal?		
Are the bed rails up on the side that the worker is standing on?		
Are there visible signs of strain on worker's face?		
Does the worker experience any pain or discomfort during use of the floor lift?		
Patient care		
Does the worker maintain a position of awkward trunk flexion (bending over at the waist) for more than 30 seconds?		
Does the worker maintain a position of awkward trunk twisting (twisting the upper body while keeping the feet stationary) for more than 30 seconds?		
Does the worker maintain a position of awkward shoulder flexion (arm raised forward) or abduction (arm raised to the side) for more than 30 seconds?		
Is the worker bending over at the waist excessively?		
Is the worker twisting the upper body excessively?		
Is the worker reaching excessively?		
Does the worker experience any pain or discomfort during patient care?		
Repositioning in bed		
Is the worker lifting the patient?		
Is there upward movement of the worker's head (sign of lifting)?		
Is the worker shrugging his/her shoulders (sign of lifting)?		
Is the worker bending his/her elbows excessively (sign of lifting or excessive use of arms)?		
Is the worker bending over at the waist excessively?		
Is the worker twisting his/her upper body while keeping the feet stationary?		
Is the bed below mid-thigh level or above hip level?		
Are the bed rails up on the side that the worker is standing on?		
Are the worker's knees fully extended (not bent) during the repositioning task?		
Is the worker using a palm's down grip?		
Is the worker using a soaker pad to reposition?		
Are there visible signs of strain on worker's face?		
Does the worker experience any pain or discomfort during the repositioning task?		

Potential risk factor	Yes	No
Repositioning in chair		
Is the worker lifting the patient?		
Is there upward movement of the worker's head (sign of lifting)?		
Is the worker shrugging his/her shoulders (sign of lifting)?		
Is the worker bending his/her elbows excessively (sign of lifting or excessive use of arms)?		
Is the worker bending over at the waist excessively?		
Is the worker twisting his/her upper body while keeping the feet stationary?		
Are the worker's knees fully extended (not bent) during the repositioning task?		
Is the worker pulling on the patient's arm/shoulder during the repositioning task?		
Are there visible signs of strain on worker's face?		
Does the worker experience any pain or discomfort during the repositioning task?		
Manual transfer		
Is the worker lifting the patient?		
Is the worker shrugging his/her shoulders (sign of lifting)?		
Are the worker's feet positioned side-by-side (as opposed to staggered forward and back)?		
Are the worker's knees fully extended (not bent) during the transfer?		
Is the worker bending over at the waist excessively?		
Is the worker twisting the upper body while keeping feet stationary?		
Is the worker pulling on the patient's arm/shoulder during transfer?		
Is the height of the patient transfer point well below the patient's knee height or above mid-thigh height?		
Are there visible signs of strain on worker's face?		
Does the worker experience any pain or discomfort during the transfer?		
Turning in bed		
Is the worker bending over at the waist and reaching excessively?		
Are the worker's feet positioned side-by-side (as opposed to staggered forward and back)?		
Are the worker's knees fully extended (not bent) during the turn?		
Is the worker bending backward at the waist or pulling with his/her arms?		
Is the worker using a soaker pad or drawsheet to turn the patient?		
Is the bed below mid-thigh level or above hip level?		
Are the bed rails up on the side that the worker is standing on?		
Does the worker experience any pain or discomfort during the turn?		

Reference:

Occupational Health and Safety Agency for Healthcare (OHSAH) in BC (2000) Reference Guidelines for Safe Patient Handling.

Appendix 8: Techniques for videotaping

The videotape is an essential tool in the assessment process. The tapes provide a permanent record of the activity and allow the ergonomist to assess motions and postures in slow motion. Videotapes also serve to enhance ergonomics training and demonstrations. The following is a checklist to follow during the pre-survey and survey using a videotape.

Videotaping checklist

Conduct the following actions during the pre-survey:

- ☐ Check equipment (for example, battery charged, blank tape)
- ☐ Obtain consent from participants
- ☐ Schedule taping
- ☐ Verify presence of electrical outlets, if needed
- ☐ Verify lighting conditions and bright lighting equipment, if needed
- ☐ Use a tripod to support the camera, if needed

Conduct the following actions during the survey:

- ☐ Identify the video segment on a piece of paper, and film this piece of paper for 3 seconds at the beginning of the video
- ☐ Activate the time/date indicator if the camera has this feature
- ☐ Select views that will maximize description of movement
- ☐ Record the worker's whole body posture and entire work area initially
- ☐ Select views 90° from each other
- ☐ Film at least ten cycles if the job is repetitive
- ☐ If several people perform the job, film two to three workers doing the same job
- ☐ Frame each view with common reference points
- ☐ If multiple tasks are involved in a process, tape the tasks in order

Reference:

Department of Defense, US Army Centre for Health Promotion and Preventive Medicine (1999) *Ergonomics in Action: Booklet II — Worksite Analysis*

Appendix 9

Memorandum of Understanding between Association of Unions and Health Employers Association of British Columbia (excerpt)

Re: Manual lifting

The Parties agree to establish a goal of eliminating all unsafe manual lifts of patients/residents through the use of mechanical equipment except where the use of mechanical lifting equipment would be a risk to the well being of the patients/residents.

The Employer shall make every reasonable effort to ensure the provision of sufficient trained staff and appropriate equipment to handle patients/residents safely at all times, and specifically to avoid the need to manually lift patients/residents when unsafe to do so. If the use of mechanical equipment would be a risk to the well being of the patients/residents, sufficient staff must be made available to lift patients/residents safely.

The parties agree to take the following immediate steps through the Occupational Health and Safety Agency for Healthcare to achieve this goal throughout the sub-sector.

a) Work in partnership with the Workers' Compensation Board, the Ministry of Health and others to establish a financing framework to make funds available to purchase the necessary mechanical equipment;
b) Finalize and distribute clear industry guidelines for safe patient/residents handling;
c) Encourage the full participation of the local joint occupational health and safety committee in the development, implementation and ongoing monitoring of this goal;
d) Recommend to the Ministry of Health that all new health care facilities be equipped with appropriate lifting equipment;
e) Produce an annual report card on the progress to date including specific recommendations for the coming year.

Signed on behalf of HEABC: Tony Collins
Date: March 17, 2001

Signed on behalf of the Association: Chris Allnutt
Date: March 18, 2001

Appendix 10: Sample no-lift policy

No manual lifting of patients/residents

5.0 Human resources

5.8 Health and safety

5.8.10 Musculoskeletal injury prevention (MSIP)

5.8.10.2 No manual lifting of patients/residents

VANCOUVER ISLAND health authority

1.0 Principle

In accordance with its vision, mission, values and musculoskeletal injury prevention program, Vancouver Island Health Authority (VIHA) is committed to promoting the MSIP program.

Extensive research on the risk of musculoskeletal injury to healthcare workers established that direct care providers (for example, RNs, LPNs and Care Aides) that perform manual patient lifts are at the greatest risk of musculoskeletal injury.

The most appropriate transfer or lift should:

- Be safe for both the patient and the caregiver;
- Encourage the patient to assist with the move as much as possible; and,
- Provide the least possible work for the caregivers by making use of good body mechanics and/or equipment.

2.0 Policy

A patient lifting device must be used to lift or reposition a patient/resident whenever possible and practicable.

Assistive devices such as transfer belts, sliding boards, friction reducing devices or mechanical transfer aids (Sara, Overhead Lift) should be used where appropriate to aid in the transfer or repositioning.

Patients/residents are not to be lifted manually unless it is either medically contraindicated (medically documented) or under special circumstances. Alternate methods used in cases of medical contraindication or special circumstances must be based on completed (documented) risk assessment findings and conform to the best practices and principles as established within VIHA and the MSIP program.

3.0 Definition

A lift is a procedure by which the entire weight of the patient/resident is lifted or carried against gravity from one surface to another, for example, floor to bed. A lift should not be confused with a transfer or repositioning of a patient/resident. During a transfer the patient/resident bears either part of or all of the weight.

4.0 Responsibilities

Every member of the care team is responsible for ensuring that the patient-handling task is done in the safest manner possible. During the course of care, the patient's condition or behaviour may change, necessitating a reassessment for the appropriate type of lift or transfer that will safely move the patient from one location to another. In instances when the condition of the patient changes, it is the responsibility of the caregiver to initiate or organize a reassessment of that patient's transfers and record any changes at the appropriate location or locations (for example, Kardex, patient chart, Activities of Daily Living ADL, care plan).

Appendix 11: Patient and resident mechanical lifts

Criteria For Use

5.0 Human resources

5.8 Health and safety

5.8.10 Musculoskeletal injury prevention (MSIP)

5.8.10.3 Patient/resident mechanical lifts — Criteria for use

1.0 Principle

Vancouver Island Health Authority recognizes the physical risks associated with manually lifting patients/residents and is committed to minimizing the risk of injury to staff and Patients/Residents through engineering controls (for example, mechanical lifts or transfer devices).

2.0 Policy

Except in situations where the use of a mechanical lift is medically contraindicated (medically documented) or under special circumstances outlined in policy *5.8.10.2 No Manual Lifting of Patients/Residents*, a mechanical lift **will be used** under the following conditions:

- The Patient/Resident* is unable to weight bear;
- The Patient/Resident* is not reliable in his/her weight bearing;
- The Patient/Resident* is agitated or aggressive;
- The Patient/Resident* is unpredictable, unable to follow instructions;
- When a change in the Patient/Resident's* transfer ability is documented on the pre-transfer assessment and there is a concern for, or question of, staff or Patient/Resident safety in using the previously designated transfer;
- At the discretion of the attending staff member.

* for example, In the case of infants and small children, where use of a mechanical lift may be unsafe, the lift method shall be assessed on an individual basis based on a complete risk assessment.

Reprinted from *VIHA Musculoskeletal Injury Prevention Program* with permission from Vancouver Island Health Authority (2003)

Appendix 12: Implementation guidelines for train-the-trainer programs

The train-the-trainer program generally consists of the following components:

- *Determine the goals of the program.* In the first meeting between the facility and the external trainers, the goals and expectations of the program should be reviewed and timelines and deliverables should be determined.

- *The facility should recommend a number of trainers proportional to the number of workers.* Trainers will be selected and should represent both union and management. Through experience it has been shown that the best trainers are those who are recognized as respected leaders by their co-workers and are keen to help others make the workplace safer.

- *The external trainers work with the facility to determine their specific needs.* This may involve a review of the facility's injury statistics and an ergonomics risk assessment to determine high-risk areas.

- MSIP education and training is provided for the facility's trainers. Topics that could be covered include:

  - Definition of an MSI
  - Recognition and reporting of signs and symptoms of MSI
  - Health effects of MSI
  - Risk factors for MSI
  - Ways to reduce the risk of MSI — control measures, early reporting
  - Employers' and workers' responsibilities in injury prevention
  - How to evaluate control measures and MSIP program
  - Consultation

Topics should be catered to the needs of the facility and may include a special focus such as patient handling techniques or department-specific risks and recommendations.

- *Facility trainers are provided with educational tools.* Instruction should be provided on how to effectively use the overhead or PowerPoint slides, activities, and discussion questions for the worker education session.

- *Facility trainers practice education and training.* Mock training sessions should be held to give facility trainers the opportunity to practice the education and training material. The external trainers should be available to provide feedback at these practice sessions.

- *Facility trainers provide education and training to staff.* Each session should be a maximum of approximately 1.5 hours long. For two weeks, facility trainers should work in pairs or individually to provide training to a group of workers in the facility. The external trainers should be available to provide support and feedback at the trainer's first sessions.

- *Ongoing training and support.* Facility trainers educate and train the remainder of the workers and provide education and training to new workers. The external trainers should be available to provide support to facility trainers as needed.

- *Program evaluation.* External trainers and the facility should work together to evaluate the effectiveness of the train-the-trainer program.

Reference:

Occupational Health and Safety Agency for Healthcare (OHSAH) in BC (2003 web) Train-the-Trainer.

Appendix 13: MSI education review - laundry

Name: _____ Date: _____

Please ask for help if you do not understand a question.

1. What does MSI stand for?

2. Check the following examples of a MSI (more than one answer).
   - a) Sprain ☐
   - b) Strain ☐
   - c) Nerve Entrapment Syndromes ☐
   - d) Muscle Spasm ☐
   - e) Contusion ☐
   - f) Bursitis (e.g. Carpal Tunnel Syndrome) ☐

3. Check the signs or symptoms of a MSI (more than one answer).
   - a) Pain ☐
   - b) Numbness ☐
   - c) Rash ☐
   - d) Swelling ☐
   - e) Tingling ☐
   - f) Burning ☐

4. Physical risk factors are those that require physical demands. List three of these MSI risk factors (e.g., static posture).

5. There are other risk factors that create conditions where physical risk factors may occur. List three of these types of risk factors (e.g., work organization)

6. What is the first thing you should do if you notice signs or symptoms of MSI while in the workplace? Circle the best answer.

   a) Wrap the affected body part in a bandage
   b) Ignore it and keep working
   c) Take a vacation
   d) Report it to your supervisor and fill out an injury/incident report

7. In the picture on the left, identify the risk factor(s) in the task and check the body part(s) affected by each risk factor.

Moving laundry cart

Risk Factor	Body Part			
	Shoulder	Low back	Neck	Knee
Awkward posture				
Static posture				
Contact stress				
Forceful exertion				
Repetition				

Suggest something that can be done to reduce the risk(s) for this task.

_____

_____

_____

_____

Storing laundry

8. In the picture on the left, identify the risk factor(s) in the task and check the body part(s) affected by each risk factor.

Risk Factor	Body Part			
	Shoulder	Low back	Neck	Knee
Awkward posture				
Static posture				
Contact stress				
Forceful exertion				
Repetition				

Suggest something that can be done to reduce the risk(s) for this task.

_____

_____

_____

Removing laundry from washing machine

9. In the picture on the left, identify the risk factor(s) in the task and check the body part(s) affected by each risk factor.

Risk Factor	Body Part			
	Shoulder	Low back	Neck	Knee
Awkward posture				
Static posture				
Contact stress				
Forceful exertion				
Repetition				

Suggest something that can be done to reduce the risk(s) for this task.

_____

_____

_____

Thank You.

Reference:

Musculoskeletal Injury (MSI) Train-the-trainer Education: Resource manual and materials, OHSAH (In development), 2004.

Appendix 14: MSIP policy review

Requirement:

To eliminate or, if not practicable, minimize the risk of musculoskeletal injury (MSI) to workers.

Information sources:

- Ergonomics (MSI) policy
- Interviews with personnel who may be familiar with the Ergonomics (MSI) policy.

Ergonomics (MSI) policy

	Yes	No
Does your group have a general policy statement reflecting a commitment to controlling the risk of musculoskeletal injury (MSI) to workers?		
Is it signed by an executive?		
Does it mention:		
a) The objectives of the program		
b) The management's commitment to eliminate or minimize the risk of MSI		
c) Who is accountable for MSI risk management		
d) Consultation between the employers and the responsible individual		
Does it include:		
a) A working definition of musculoskeletal injury (MSI)		
b) A systematic risk identification process		
c) A systematic risk assessment process		
d) Guidance for risk control		
Does the identification and assessment of MSI Risk include:		
a) A review of injury records to identify existing or historical MSI		
b) Consultation with workers who have signs or symptoms of MSI		
c) Consultation with a representative sample of workers		
d) Physical demands		
e) Layout and condition of the workstation or workplace		
f) Characteristics of the objects handled		
g) Environmental conditions		
h) Organization of work		
Does the risk control guidance include:		
a) Priority for engineering or administrative controls over personal protective equipment		
b) A requirement for interim controls when permanent controls are delayed		
c) Education on health effects, signs and symptoms for workers exposed to a risk of MSI		
d) Education on control measures for workers exposed to a risk of MSI		
e) Evaluation of the effectiveness of risk control measures		

Ergonomics (MSI) policy cont'd

	Yes	No
Is this policy:		
a) In the form of a manual		
b) Included as a part of all rule booklets		
c) Referred to in all management raining programs		
d) Used in other ways (describe):		
Do you use the company policy?		

Reference:

Robinson, Dan, Ph.D., CCPE. (2003) Robinson Ergonomics Inc.

Workers' Compensation Board of British Columbia. (1999) OH&S Regulation 296/97, as amended by BC Regulation 185/99.

Appendix 15: Pre-handling algorithm for safe patient handling

Interior Health

Patient Assessment		Yes	No
Strength	In bed does the resident lift their hips clear off the bed to get onto a bedpan or assist with dressing / incontinence pads?		
	In bed does the resident roll onto their side without assistance?		
	In sitting can the resident lift each foot off the ground and straighten each knee?		
Balance	Can the resident sit upright on the side of the bed without help?		
	Can the resident sit/ lean forward in a chair without support?		
Ability to follow direction	Does the resident follow transfer instructions appropriately?		
	Does the resident's ability remain the same throughout the day and with different caregivers?		

☐ **No to any** of the observations

☐ **Use Ceiling Track**
Transfer and consider need for adaptive clothing

☐ **No to any** observations

☐ Can the resident sit forwards and push down on the arm rests with **both** hands?

☐ **No**

☐ **Universal or Hammmock**
Size _____

☐ **Yes**

☐ **Hygiene or Universal**
Size _____

☐ **Use repositioning sling in bed**

☐ **Yes to all** of the observations

Sit/ Stand Lift Assessment	Yes	No
While sitting, can the resident actively lean forward?		
Can resident hold onto **both** handles of the sit/ stand lift?		
Can the resident keep their feet flat on the footplate of the lift throughout the transfer?		
Can resident actively straighten their hips to assist the lift?		

☐ **Yes to all** of the observations

☐ Can the resident stand erect and step with both feet?

☐ **No**

☐ **Sit/stand lift**

☐ **Yes**

Use the sit/stand lift until assessed by rehab. Refer to functional sheet / Kardex for details of transfer

Reprinted from *Interior Health MSIP - A Practical Guide to Resident Handling* with permission from Interior Health (2003)

Appendix 16: Incident investigation form

EMPLOYEE'S REPORT

Last Name: First Name: Gender: Male ☐ Female ☐

Address (No, St, Appt): City: Postal Code: Home Phone #:

Facility or Site where you were injured: Dept: Work Phone: Employee #:

Other Facility or Site(s) where you work: Dept: Work Phone:

Date of Birth (MM/DD/YY): Position/Occupation: Status: FT ☐ PT ☐ Cas ☐

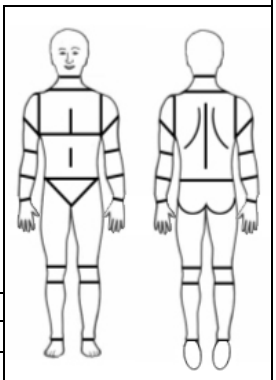
Injury Date (MM/DD/YY): Time of Injury: Date Reported (MM/DD/YY): Time Reported:

Shift Start Time: Shift End Time: Did you finish your shift: ☐ Yes ☐ No ☐ Unknown

Action Following Incident: Remained at Work ☐ First Aid ☐ Lost time injury *(missed/will miss time beyond injury date)* ☐ *Report Only* ☐
Medical Aid ((ER) *saw doctor)* ☐ Date: Medical Aid ((GP) *saw/will see doctor)* ☐ Date:

Where were you when the incident occurred (i.e. tub room, patient room):_____Witness:_____Phone #:_____
Witness:_____Phone #:_____

Describe the injury: Please describe the nature of the injury (e.g. strain, cut, bruise, blood exposure, burn, etc.) and body part affected (e.g. Left back, right shoulder, finger). On the body maps, please put an X on the body part(s) injured. Please provide as much detail as possible.



Describe how and what you were doing when the incident happened: Ensure all relevant information is supplied.

Previous discomfort in the affected area? ☐ Yes ☐ No ☐ Unknown

Incident Reported To: Date (MM/DD/YY): Phone #:

Name of person completing form (if not employee): Employee Signature:

INCIDENT INVESTIGATOR'S REPORT (Supervisor / Manager)

NATURE OF INJURY ***(Check all that apply)***

- ☐ No Injury (Near Miss/Unsafe Condition)
- ☐ Musculoskeletal Injury (MSI - i.e. Strain or Sprain)
- ☐ Bruise/Contusion
- ☐ Burn (Heat or Cold)
- ☐ Cuts / Scratch / Abrasion / Laceration (Non BBF)
- ☐ Puncture Wound (BBF)
- ☐ Skin Irritation
- ☐ Skin / Mucous Membrane Exposure (incl. eye)
- ☐ Eye Irritation
- ☐ Allergic Response
- ☐ Psychological Trauma
- ☐ Respiratory Irritation

ACTIVITY ***(Check all that apply)*** ☐ **No Injury**

- ☐ **Patient Handling (Please Fill Out Box A)**
  - ☐ Repositioning
  - ☐ Transferring
  - ☐ Assisted Walking
  - ☐ Assisted From Floor
  - ☐ Preventing a fall
  - ☐ Holding/assisting during procedure
  - ☐ Toileting
- ☐ **Patient Care**
  - ☐ Personal Care
    - ☐ Washing/Bathing
    - ☐ Dressing
    - ☐ Changing
    - ☐ Feeding
  - ☐ Procedures
    - ☐ Prep/Dispensing Medicine
    - ☐ Dressing Changes
    - ☐ Sharps Handling
      - ☐ Re-capping
      - ☐ Veno Puncture/Arterio Puncture
      - ☐ Sharps Disposal
      - ☐ Other Instruments
      - ☐ Other_____
  - ☐ Other Patient Care_____
- ☐ **Material/Equipment Handling** (stretchers, carts, boxes, etc) (*Specify Equipment/Material details below*)
  - ☐ Lift / Lower
  - ☐ Push / Pull
  - ☐ Carry
  - ☐ Other _____
- ☐ **Equipment Operation**
  - ☐ Driving
  - ☐ Other _____
- ☐ **Equipment Maintenance**
- ☐ Office Work
  - ☐ Computer
  - ☐ Non-computer
- ☐ **Natural Activity**
  - ☐ Walking/running
  - ☐ Bending
  - ☐ Reaching
  - ☐ Other _____
- ☐ Spill Cleanup
- ☐ Cleaning
- ☐ Other _____

Equipment/Material Description:

BOX A: Patient Handling *(Check only one box per question)*

Equipment Used At Time Of Injury:

- ☐ Ceiling Lift
- ☐ Floor Lift
- ☐ Stander
- ☐ Manual Lift
- ☐ Other _____

Was adequate assistance available? ☐ Yes ☐ No

How many employees were involved in activity at time of the incident?

Employee Name:

CAUSE ***(Check all that apply)***

- ☐ **Bite**
  - ☐ Human
  - ☐ Animal/Insect
- ☐ **BBF Exposure**
  - ☐ Needlestick
  - ☐ Other Sharps
  - ☐ Skin / Mucous Membrane (Splash)
- ☐ **Exposures**
  - ☐ Chemical Name:_____
    - ☐ Inhalation
    - ☐ Ingestion
    - ☐ Skin / Eye Contact
  - ☐ Latex
  - ☐ Dust / Particulate
  - ☐ Communicable Diseases
  - ☐ Temperature Extremes
  - ☐ Noise
  - ☐ Radiation
  - ☐ Electricity
  - ☐ Indoor Air Quality
- ☐ **Motor Vehicle Accident**
- ☐ **Slip and Fall**
- ☐ **Workplace Aggression** (Please Fill Out **Box B**)
- ☐ **Ergonomic Factors**
  - ☐ Awkward Posture
  - ☐ Static Posture
  - ☐ Contact Stress
  - ☐ Force
  - ☐ Repetition
- ☐ **Cause Undetermined**
- ☐ **Traumatic Event**
- ☐ **Caught In / Under /Between Equipment**
- ☐ **Hit / Struck By/Cut By equipment**
- ☐ **Other** _____

BOX B: Aggressive Behavior ***(Check all that apply)***

Type of incident:

- ☐ Verbal – threats of violence, verbal assault
- ☐ Physical:
  - ☐ Biting
  - ☐ Hitting / kicking / beating
  - ☐ Squeezing / pinching / scratching / twisting
  - ☐ Sexual assault
  - ☐ Other _____
- ☐ Other _____

Incident involved:

- ☐ Patient / Resident
- ☐ Family member of patient / resident
- ☐ Other member of public
- ☐ Worker
- ☐ Other _____

CONTRIBUTING FACTORS ***(Check all that apply)***

Equipment / Device
- ☐ Malfunctioning
- ☐ Improper Use
- ☐ Improper/Inadequate Signage
- ☐ Not available At Point of Use
- ☐ Poor Design
- ☐ Other – Specify Below

_____

Environment
- ☐ Temperature
- ☐ Workplace
- ☐ Layout/Design
- ☐ Limited Workspace
- ☐ Floor Slippery/Uneven
- ☐ Lighting Inadequate
- ☐ Excessive Noise
- ☐ Ventilation Inadequate
- ☐ Improper Storage
- ☐ Other – Specify below

_____

Work Practice
- ☐ Improper Assessment Of Client/Load
- ☐ Did Not Follow Appropriate Procedures
- ☐ Did Not Use Designated/ Appropriate Equipment
- ☐ Conduct
- ☐ Task Performed For Extended Periods
- ☐ Communication
- ☐ Unaccustomed
- ☐ Other-Specify Below

_____

Patient-Related Factors
- ☐ Unable To Follow Directions
- ☐ Inconsistent Weight Bearing
- ☐ Patient Aggressive
- ☐ Patient Resistive
- ☐ Made Unexpected Movement
- ☐ Confused/Dementia
- ☐ Under Influence Of Drugs/Alcohol
- ☐ Language Barriers
- ☐ Other – Specify Below

_____

Organizational/Administrative
- ☐ Working Alone
- ☐ Inadequate Information
- ☐ Inappropriate Scheduling
- ☐ Lack Of Training/Education
- ☐ Lack Of Appropriate Equipment
- ☐ Lack Of Personal Protection Equipment
- ☐ Lack Of Safe Work Procedures
- ☐ Perceived Time Constraints
- ☐ Other – Specify Below

_____

Worker
- ☐ Inexperienced
- ☐ Communication Difficulties
- ☐ Fatigued
- ☐ Distracted
- ☐ Pre-existing Injury
- ☐ Sick/Medicated
- ☐ Other- Specify Below

_____

CORRECTIVE ACTIONS TAKEN (*Check all that apply*)

- ☐ **Written Safe Work Procedures Required/Updated** (describe)
- ☐ **Education or Training Required/Provided for Specific Task** (describe)
- ☐ **Equipment -** Repair/Replace/Purchase (describe)
- ☐ **Environment –** Change / modify workstation or substitute/eliminate product (describe)
- ☐ **Patient/Resident Related Incidents -** Lift/Transfer Re-Assessed or Care Plan/ADL Card Updated (describe)

Person Responsible for Corrective Action:		Date Completed:
Maintenance Requisition Submitted:	☐ Yes ☐ No ☐ N/A	Date:
Corrective Action communicated to staff:	☐ Yes ☐ No ☐ N/A	Date:
Any Time Loss Subsequent to injury date:	☐ Yes ☐ No ☐ N/A	Date:

Supervisor/Mgr Name:	Signature:	Date:

To recieve a full size incident investigation form please contact OHSAH

Appendix 17: A sample tracking form for primary and secondary prevention

SIN	**Hospital injury ID**	
First name(s)	**Gender**	M F
Last name	**WCB claim number**	
Date of birth	**Home phone number**	
Division/Portfolio	**Work phone number**	
Facility	**Work status**	FT PT Casual
Injury date	**Signs/symptoms occurred**	Suddenly (specific incident) Gradually (no known incident)
Injury time	**Manager name**	
Shift length	**Manager Feedback**	Yes No
Time into shift	**Physician name**	
Occupation	**Physician Feedback**	Yes No
Department	**AI form on record**	On file N/A Waiting
Location of injury	**Date of follow-up** (3 months post d/c)	

Note: For data entry purposes, the shaded sections are found on the second screen of the PEARS database.

How did you hear about us? (Tick only one)

- ☐ OHN or EHU
- ☐ Union rep
- ☐ Co-worker
- ☐ Co-worker in PEARS
- ☐ Supervisor
- ☐ PEARS member
- ☐ Physician
- ☐ Self referral
- ☐ WCB staff
- ☐ Safety Committee
- ☐ MSIP team
- ☐ Brochure / poster / advertising
- ☐ Newsletter
- ☐ Email
- ☐ Attended education class
- ☐ Other union activities
- ☐ Other

In PEARS? (Tick only one)

- ☐ EIC
- ☐ Non EIC
- ☐ Non participant

If non EIC, reason (Tick only one)

- ☐ Not work related - injured at home
- ☐ Not work related - MVA
- ☐ Injury 7 - 31 days
- ☐ Injury 32 - 90 days
- ☐ Pre-existing symptoms

INJURY DATA cont.

If non participant, reason: (Tick only one)

- ☐ Declined - Symptoms Resolved
- ☐ Declined - Seeking Private Treatment
- ☐ Did Not Return Message
- ☐ Declined - Employee on Vacation
- ☐ Declined - Too Far to Travel
- ☐ Failed to attend appointment
- ☐ Cancelled appointment
- ☐ Declined - Schedule Too Busy
- ☐ Declined – GP recommends rest
- ☐ Declined – I think I should be home
- ☐ Inappropriate referral
- ☐ Pre-Existing Symptoms
- ☐ Not Work Related
- ☐ Chronic / Reported > 90 Days
- ☐ Already on GRTW
- ☐ Other

Mechanism (Circle only one)

01 No injury
02 Exertion - Pushing
03 Exertion - Pulling
04 Exertion - Lifting/lowering
05 Exertion - Carrying
06 Exertion - Reaching
07 Exertion - Twisting
08 Exertion - Cumulative trauma
09 Exertion - Patient handling
10 Exertion - Other
11 Fall
12 Struck / bumped / banged / hit by / rubbed / abraded / poked
13 Caught in / under / between wall or equipment or door
14 Violence / Aggressive behaviour
15 Other

Body part (please indicate left or right and circle all that apply)

01 Head / face
02 Neck
03 Arms
04 Shoulder
05 Hand / wrist / fingers
06 Upper back
07 Middle back (thoracic)
08 Lower back
09 Buttock
10 Trunk (chest, rib, abdomen, hip)
11 Groin
12 Upper / lower leg
13 Knee
14 Ankle
15 Foot / toes

Diagnosis (Tick only one)

- ☐ Strain
- ☐ Sprain
- ☐ Tendinopathy
- ☐ Bursitis
- ☐ Subluxation
- ☐ Dislocation
- ☐ Disc (herniation / rupture)
- ☐ Nerve impingement
- ☐ Impingement (other)
- ☐ Post surgery
- ☐ Meniscal
- ☐ Functional instability
- ☐ Movement control disability
- ☐ Fracture
- ☐ Degeneration (OA / disc)
- ☐ Contusion and/or bone bruise
- ☐ Other

Union (Tick only one)

- ☐ BCGEU
- ☐ BCNU
- ☐ HEU
- ☐ HSA
- ☐ Excluded
- ☐ UFCW

WCB Claim (Tick only one)

- ☐ Accepted
- ☐ Declined
- ☐ N/A

DATES

(Enter all dates as Jan 01-03 or 01-Jan-03 as opposed to 01-01-03)

Injury or signs and symptoms reported	Injury form received
Contact between EE/OHS & PEARS	Admission to PEARS program
First workplace assessment	WCB claim filed
First day employee missed work	First saw attending physician
Assessed by physiotherapist	Returned to modified work
Returned to work full time	
Discharge status *(Tick one only)* ☐ RTW regular hours and duties ☐ RTW reduced hours ☐ RTW modified duties ☐ RTW modified hours and duties ☐ Off work	
Date of Discharge	Self discharge? Yes No

	Oswestry				***DASH***						
	Date	Raw	Max	Score	Date	Raw	Score	Raw	Score	Raw	Score
						Function		**Sport**		**Work**	
Pre											
Post											
3 month											

	Neck Disability Index				***VADS***		***Lower Limb Functional Scale***			
	Date	Raw	Max	Score	Date	Score	Date	Raw	Max	Score
Pre										
Post										
3 month										

INTERVENTIONS

Physiotherapy

Passive	Yes / No	Active Exercise	☐ Yes / No
Assessment performed	Yes / No	If no, why?	☐ Not impacting work
			☐ Employee Declined
			☐ Employee not at work
			☐ Not Appropriate

Work environment modification

Change to rotation/schedule	Yes / No	Workstation re-org	Yes / No
Structural modifications	Yes / No	Equipment purchase	Yes / No
Type of equipment purchased _____		Total equipment costs	$ _____

Work practice modification

Advice for posture/stretching	Yes / No	Pacing	Yes / No
Patient handling review	Yes / No	Other	Yes / No
Biomechanics	Yes / No		

Modified work

- ☐ Yes - hours
- ☐ Yes - duties
- ☐ Yes - hours and duties
- ☐ No

External referral

- ☐ Yes by PEARS
- ☐ Yes by GP
- ☐ No

Other intervention Yes / No

If yes, specify _____

If yes, specify _____ Number of times PEARS contacted MD _____

Outcome measures

Time loss Yes / No Income continuity Yes / No Cost income continuity $ _____

Reference:

Occupational Health and Safety Agency for Healthcare (OHSAH) in BC. PEARS Program.

ABOUT THIS DOCUMENT

The Occupational Health and Safety Agency for Healthcare (OHSAH), which operated from 1998-2010, was a precursor to SWITCH BC. Conceived through the Public Sector Accord on Occupational Health and Safety as a response to high rates of workplace injury, illness, and time loss in the health sector, OHSAH was built on the values of bipartite collaboration, evidence-based decision making, and integrated approaches.

This archival research material was created by OHSAH, shared here as archival reference materials, to support ongoing research and development of best practices, and as a thanks to the organization's members who completed the work.

If you have any questions about the materials, please email hello@switchbc.ca or visit www.switchbc.ca