

Guide to Performing a Hazard Assessment

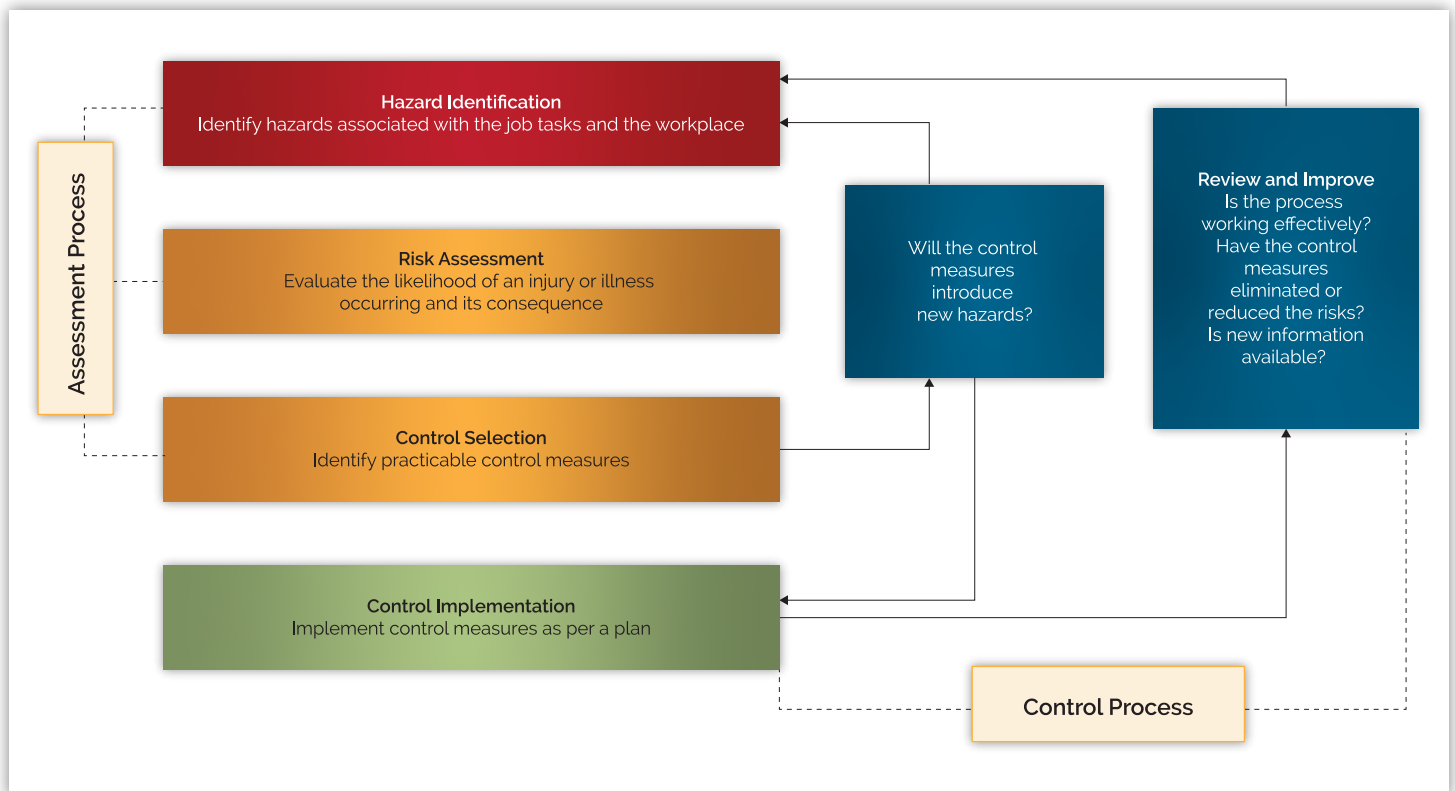
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INTRODUCTION

A hazard assessment is the process to identify, assess, and control workplace hazards and the risks to worker health and safety. Section 23 of the Prince Edward Island *Occupational Health and Safety Act*, requires employers with 20 or more employees to establish an occupational health and safety program in their workplace. The assessment process is an essential part of an organization's safety culture and safety management system. Ensuring an effective hazard assessment system in the workplace will minimize risks, increase compliance with workplace safety regulations and help create and maintain a safe work environment.

HAZARD ASSESSMENT PROCESS DIAGRAM



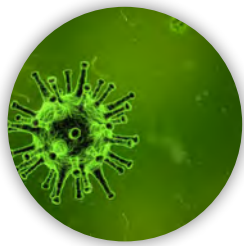
STEP 1:

HAZARD IDENTIFICATION

A hazard is any situation, thing, or condition that may expose a person to risk of injury or occupational disease. Finding the hazards in a workplace can be a challenging task, therefore it is important to work as a team and include workers who are familiar with the task and worksite to ensure all hazards are identified.

WHAT TYPES OF HAZARDS ARE THERE?

A common way to classify hazards is by category. Below is a non-exhaustive list of workplace hazards.



Biological: Bacteria, viruses, insects, fungi, animals, plants, etc.

Example: *Healthcare workers can contract a virus or disease by coming into contact with contaminated fluids like blood when not wearing correct personal protective equipment (PPE) or following safe work practices.*



Chemical: Depends on the physical, chemical and toxic properties of the chemical. They may identify through evaluation of Safety Data Sheets (SDS) and WHMIS labels.

Example: *Vapors from gases or fumes from metals can cause respiratory problems without proper respiratory protection.*



Ergonomic: Repetitive movements, inadequate lighting, poor/awkward postures, etc. Issues to be considered include work station and equipment design, and how they interact with the worker.

Example: *Improper keyboard set up may result in carpal tunnel syndrome.*



Physical: Noise, vibration, radiation, falls from height, temperature extremes, etc.

Example: *Hearing loss can result from working around loud equipment without proper hearing protection.*

Safety: Slipping/tripping hazards, insufficient machine guarding, equipment malfunctions, etc.

Example: *Trailing power cords may result in a worker inadvertently tripping.*

Psychosocial: Stress, violence, harassment, emotionally draining work, increased fatigue, etc.

Example: *Traumatic experiences can lead to fatigue, stress, depression, inability to concentrate, and illness.*



Within each hazard category, there are also hazard sources. Equipment, materials, environment, and people all contribute to hazards and to the impact level on the organization and the workers. Consider these sources when conducting hazard identification as they affect the organization's ability to control the individual hazards.

Bob owns a small electrical business and works with one apprentice, Kevin. Today, they are scheduled to begin work at a home being renovated. Once they arrive, Bob notices that other contractors on site have not cleaned up after themselves and there is construction debris throughout the work area.

HOW ARE HAZARDS IDENTIFIED?

The following practices will assist in ensuring that all hazards are identified:

- **Inspect:** Walk around the workplace and look for what could cause worker harm. Analyze the design and layout of the work areas and observe how work tasks are being performed.
- **Work as a Team:** Before beginning a task identify the potential hazards together.
- **Collect and Review Information:** Organizations often have insight into present hazards through established tools, systems and programs. Review near misses, incident and inspection reports, along with first aid and maintenance logs to detect any hazard patterns. For chemicals, review safety data sheets and manufacturer instructions.
- **Consult with the workers:** It is important to keep lines of communication open with your workers, as they can likely identify risks to both workers and production.

WHEN ARE HAZARDS IDENTIFIED?

To protect workers, hazard identification must be done regularly, but especially:

- **During design and implementation**
 - Designing new processes or procedures.
 - Purchasing and installing new machinery.
- **Before tasks are done**
 - Checking equipment or following processes.
 - Reviewing surroundings before each task.
- **While tasks are being done**
 - Be aware of changes, abnormal conditions or sudden emissions.
- **During inspections**
 - Formal/informal performed by the supervisor or health and safety committee.
- **After accidents**
 - Near misses or minor events.
 - Injuries or illness.



STEP 2:

RISK ASSESSMENT

A risk assessment is the process used to determine the probability and severity of a worker being exposed to injury or occupational disease in the workplace. Risk assessments help to create awareness of hazards and identify who may be at risk. They types of assessments should be performed by someone who is familiar with the tasks as well as the work environment.

The culture of a workplace, or industry, may build a higher level of risk tolerance over time. Employers must be mindful to prevent complacency and ensure everyone adheres to safe work practices. The process of conducting risk assessments and establishing appropriate controls demonstrates to workers that their input is valued and will increase compliance to safe work practices in the workplace.

PERFORMING A RISK ASSESSMENT

Risk assessments are a proactive process designed to ensure workers are protected. As such, they should be completed prior to starting a job task. Completing a risk assessment for reoccurring tasks may not always be necessary, however safe practices developed from previous risk assessments should be reviewed when new equipment, material or work processes are introduced.

Determine the Level of Risk

Risk is often rated as high, medium, or low. This rating helps decide which risks are most serious and which hazards should be dealt with first.

***Example:** A busy loading dock where workers are frequently carrying heavy loads could have a high risk of pallet jack collisions and a moderate risk for worker back strains.*

The level of risk is based on **how often** the job is done, **how likely** an injury is, and **how serious** an injury could be. Most commonly risk can be explained as:

$$\text{RISK} = \text{PROBABILITY} \times \text{SEVERITY}$$

A risk matrix is a helpful tool to determine level of risk. In practice probability and severity cannot be estimated with complete accuracy; however this simple mechanism can increase visibility of risks and assist the decision making process.

Bob notes the debris around the job site recognizing that he or his apprentice could easily trip on any of it. In addition, the messiness of the site makes setting up a ladder difficult, as well as climbing up and down the ladder safely.

He explains to Kevin that while this is not likely to cause a serious risk to either worker, it is quite probable that they would trip while carrying tools and materials into the site.

Probability (How likely an event is to occur)	Severity (The level of damage possible when an event occurs)		
	Minor	Moderate	Major
Likely	MEDIUM	HIGH	HIGH
Possible	LOW	MEDIUM	HIGH
Unlikely	LOW	LOW	MEDIUM

In general, the **level of risk** is divided into **three categories**:

- **High Risk:**
Could result in a serious injury or death
- **Medium Risk:**
Could result in temporary disability or lost time injury
- **Low Risk:**
Could result in medical aid for first aid injury

Ask the following questions when evaluating risk:

- **Who might be harmed?**
For example, are all workers exposed to the hazard, or is it a smaller number?
- **What kind of injury or illness could be suffered, and how severe would it most likely be?**
- **How long are workers exposed to the hazard?**
The longer the exposure, the higher the risk.
- **How frequent is the exposure?**
If the task is repeated many times each shift, it usually carries more risk than a task done only occasionally.



Once a risk assessment is complete, the next step in the hazard assessment process is to choose appropriate hazard controls to eliminate or reduce the risk of injury or illness to workers.

STEP 3: HAZARD CONTROL

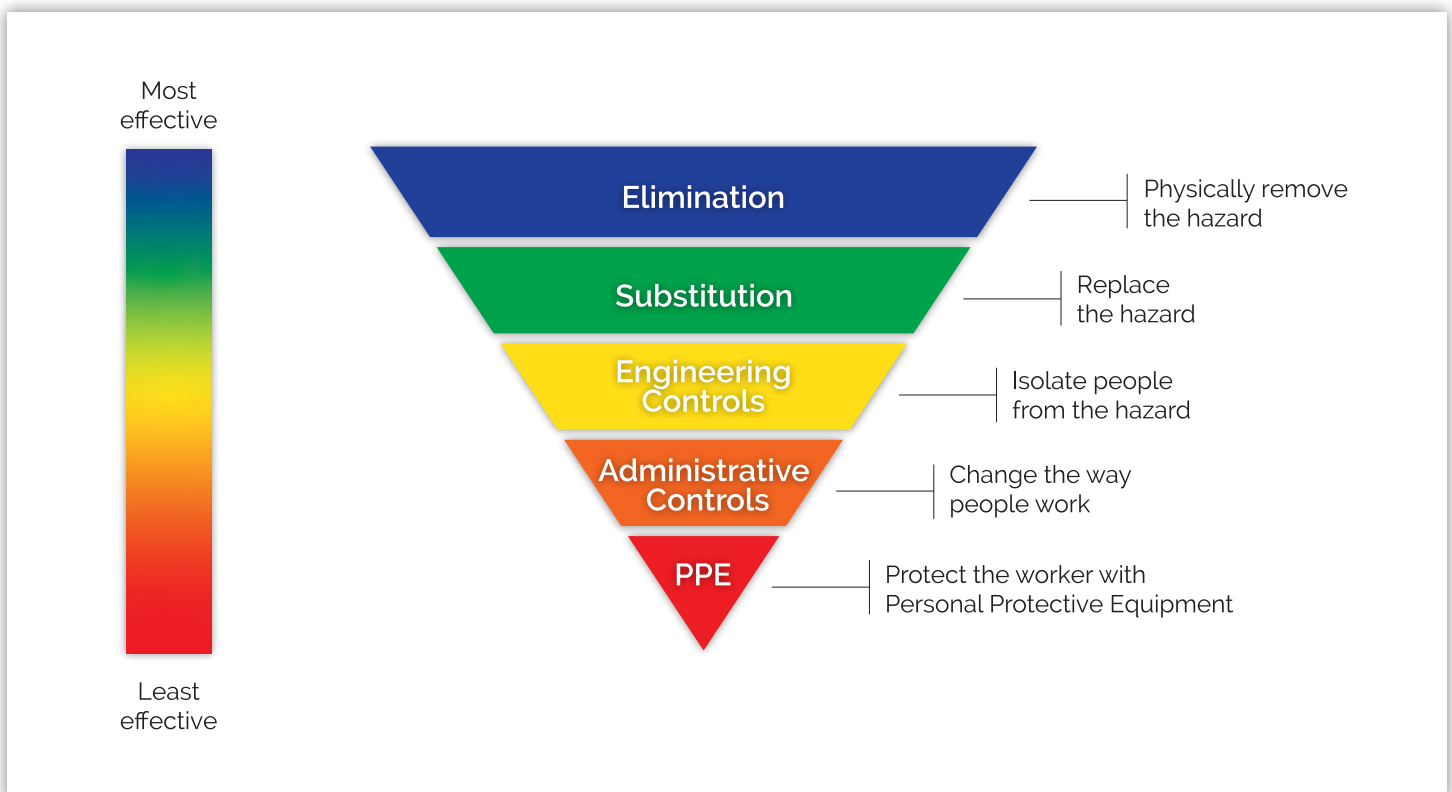
After hazards are identified and assessed, the hazard should be eliminated. When eliminating the hazard is not possible, controls must be implemented. Hazard control is the final step of the hazard assessment process.

HAZARD CONTROL HIERARCHY

There are five basic ways to control hazards and these controls are formed into a hierarchy. The hierarchy of controls is a system used to minimize or eliminate exposure to hazards. These controls are listed in order of effectiveness with the first control being elimination; or physical removal of the hazard. Often, the hazard cannot be eliminated, or controlled by using a single control method. In these cases, it is necessary to use a combination of engineering, administrative and personal protective equipment controls to provide a greater level of worker health and safety.

The hierarchy of controls is a system used to minimize or eliminate exposure to hazards.

HIERARCHY OF CONTROLS



Elimination: *Physically remove the hazard*

- Removing flammable gas containers from an area where hot work is performed.
- Having workers perform work at ground level rather than working at heights.

Substitution: *Substitute tools or replace with a hazard with less risk*

- Using a less toxic or non-toxic chemical in place of a hazardous one.
- Using a lift to work at heights instead of a ladder.

Engineering controls: *Isolate people from the hazard*

- Attaching guards to machinery to protect workers.
- Installing proper ventilation to improve poor air quality in a workplace.

Administrative controls: *Change the way people work*

- Scheduling maintenance and other high exposure operations for times when few workers are present.
- Using a work-rest schedule that limits the length of time a worker is exposed to a hazard.

Personal Protective Equipment (PPE): *Protect workers with PPE*

- Flaggers wearing reflective vests while directing traffic.
- Construction workers wearing hard hats to protect against falling objects.

Bob mentions to the other contractors that the site will need to be cleaned before they can begin their work. The contractors tidy their mess, effectively removing the hazard, while Bob and Kevin gather their necessities.

The team of electricians are then able to complete their work satisfactorily and safely.



SELECTING THE APPROPRIATE CONTROLS

An appropriate control must be chosen for each identified hazard. Eliminating the hazard is always the first choice. The selection of hazard controls will not always be easy. Choosing a control method may involve:

- Evaluating and selecting temporary and permanent controls.
- Implementing temporary measures until permanent controls can be in place.
- Implementing permanent controls when reasonably possible.
- Collaborating with workers to ensure proper controls are implemented.

When considering options, ask:

- **Can I find safer ways to perform the task?**
For example, if falling is a hazard, eliminate the risk by storing stock at lower heights so workers don't have to climb ladders to reach the goods. (Elimination)
- **Can I use something less harmful?**
For example, if chemical-heavy industrial cleaners are a hazard, consider substituting with a less toxic cleaner. Ensure the substituted product doesn't create new hazards. (Substitution)
- **If working at a height is required and no substitute exists, how do I control the hazard?**
Guardrails can be installed to prevent falls from happening. (Engineering Controls)
- **How will I ensure safety procedures for working at heights are followed?**
Create a policy that requires supervisors to actively monitor safety compliance and discipline workers that fail to meet compliance. (Administrative Controls)
- **After considering all hazard controls, does a fall from heights hazard still exist?**
Require workers to be trained and wear appropriate fall protection when working at height of 3m or more. (PPE)

Monitoring Control Measures

Monitor the effectiveness of the hazard control in place and improve those that don't measure up. Monitor effectiveness by:

- Conducting regular safety inspections to track exposure to hazards.
- Empower the joint occupational health and safety committee to hold monthly meetings to discuss health and safety matters of the workplace.
- Address safety issues promptly.



CONCLUSION

The overall goal of a hazard assessment is to ensure effective long-term control of hazards in the workplace. Remember, workers must be made aware of and understand the appropriate controls to address the workplace hazards. Workers must use and follow the controls that have been put in place and employers must regularly monitor, evaluate and document the hazards to ensure the controls are working effectively.



For more information, please contact:
Workers Compensation Board of PEI
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To report a serious workplace injury, contact the occupational health & safety line at 902-628-7513