



Ethiopian TVET-System



Irrigation and Drainage Design and Construction Level-III

Based on March 2017 GC. Occupational Standard

Module Title: Identifying OHS Hazards and Risk

TTLM Code: EIS IDC 3 TTLM 0920v2



This module includes the following Learning Guides

LG05: Contribute to workplace hazard identification

LG Code: EIS IDC3 M02 LO1-LG-05

LG06: Gather information about workplace hazards

LG Code: EIS IDC3 M02 LO2-LG-06

LG07: Contribute to OHS risk assessment

LG Code: EIS IDC3 M02 LO3-LG-07

Instruction Sheet	Learning Guide 05: Contribute to workplace hazard identification
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Selecting hazard identification tools, techniques, processes and methods
- Accessing hazard identification tools, techniques processes and methods
- Recognising, reporting and recording hazards in the workplace
- Providing information and assistance to persons conducting workplace inspections or testing

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to:

- Select hazard identification tools, techniques, processes and methods
- Access hazard identification tools, techniques processes and methods
- Recognize, report and record hazards in the workplace
- Provide information and assistance to persons conducting workplace inspections or testing

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4” in page 3, 11, 15 and 21 respectively.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3 and Self-check 4” -” in page 10, 14, 20 and 25 respectively
5. If you accomplish the self-checks, do operation sheet in page 26
6. LAP Test in page 27

Information Sheet-1	Selecting hazard identification tools, techniques, processes and methods
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1.1 Basic terminologies

Hazard: Anything (e.g. condition, situation, practice, behavior) that has the potential to cause harm, including injury, disease, death, environmental, property and equipment damage. A hazard can be a thing or a situation.

Hazard Identification: This is the process of examining each work area and work task for the purpose of identifying all the hazards which are “inherent in the job”.

Risk: The likelihood, or possibility, that harm (injury, illness, death, damage etc) may occur from exposure to a hazard.

Risk Assessment: Is defined as the process of assessing the risks associated with each of the hazards identified so the nature of the risk can be understood.

Risk Control: Taking actions to eliminate health and safety risks so far as is reasonably practicable.

Monitoring and Review: This involves ongoing monitoring of the hazards identified, risks assessed and risk control processes and reviewing them to make sure they are working effectively.

1.2 Work place hazard

“A hazard is any source of potential damage, harm or adverse health effects on something or someone.”

Every workplace has hazards. Workplace hazards are any aspect of work that cause health and safety risks and have the potential to harm. As an employer, you have a legal responsibility to look after your employees’ safety and protect them against health and safety hazards at work.

In order to manage workplace health and safety and help prevent accidents and sickness absence, it’s important to identify, monitor and reduce the risk associated with workplace hazards.

Some hazards are more likely to be present in some workplaces than others, and depending on the work that you do, there will be hazards that are more or less relevant to your business.

Hazards generally arise from the following aspects of work and their interaction:

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- physical work environment
- equipment, materials and substances used
- work tasks and how they are performed
- work design and management

1.3 Hazard identification

Hazard identification is the process of identifying hazards in the workplace or for a work procedure. Identifying hazards in the workplace involves finding things and situations that could potentially cause harm to people. In order to understand what hazard identification involves, it is first necessary to understand the nature of hazards.

For further information on identifying hazards in the workplace, please see the workplace hazards can be divided into the following groups:

- physical hazards: Conditions in which objects, materials or structures can cause material or bodily damage. Examples include flammability, explosiveness, noise, electric shock, heat and cold extremes, radiation, slippery surfaces, low ceilings, etc.;
- chemical hazards: Conditions that can lead to contamination by harmful or potentially harmful substances. Examples include toxic gases, noxious fumes, corrosive liquids or powders, etc.;
- biological hazards: Conditions where living organisms can pose a threat to human health. Examples include syringes carrying potentially infected blood, specimen containers with potentially infected materials, viruses from air-conditioning systems, snakes etc.
- ergonomic hazards: Ergonomic hazards are a result of physical factors that can result in musculoskeletal injuries, such as the height of a workbench, the shape of a vehicle seat and the length of a control lever;
- radiation hazards: for example, from x-ray machines, high powered lasers, radioactive materials;
- psychological hazards: Conditions that can affect the thoughts, behavior and mental well-being of workers. Examples include stress from using equipment without proper training or instruction or from being coerced into using defective tools or materials;
- mechanical hazards: Mechanical hazards are mainly caused by malfunction of an equipment. The hazard can lead to serious injuries or even death. These risks can

be minimized by ensuring that equipment is on good working condition before using.

- electrical hazards: are mainly caused by electrical failure or malfunction of an electrical equipment. Examples of the electrical hazards are electrical shock and electrical fire. These hazards can be minimized by installing emergency power switches where there is electrical equipment.
- environmental hazard: is a substance, a state or an event which has the potential to threaten the surrounding natural environment / or adversely affect people's health, and natural disasters such as storms and earthquakes.

In order to identify hazards, the following are recommended:

- Past incidents/accidents are examined to see what happened
- Employees be consulted to find out what they consider are safety issues,
- Work areas or work sites be inspected or examined to find out what is happening now.
- Information about equipment (e.g. plant, operating instructions).
- Welcome creative thinking about what could go wrong takes place, i.e. what hazardous event could take place here?

1.3.1 Hazard identification tools

The hazard identification tools were developed following interviews with principal contractors and subcontractors, which highlighted the accurate identification of hazards as significant in the successful management of subcontractor safety.

Use the four types of tools to continuously identify hazards in your workplace. Once you have a list of hazards, continually evaluate and prioritize that list based on severity and exposure, mitigating as many hazards as possible.

- Collect Information: Review all information you may already have available to find hazards that have already been identified by others.

Examples:

- ✓ Equipment manuals
- ✓ Safety data sheets
- ✓ Inspection reports
- ✓ Insurance reports
- ✓ Past incident data
- ✓ Relevant OSHA data

✓ Consultation reports

- Inspect and Observe: Inspect equipment and work areas when not in operation, using common sense and drawing on the knowledge of the operators to identify potential hazards.
- Involve Workers: Be sure to stay engaged with them and listen closely, as they may not always know that they are describing a hazard.
- Investigate Incidents: Investigate to find true root causes and address systemic issues.

Hazard identification tools can be used as a guide to help:

- identify generic hazards and the controls required for a job task;
- assist in formulating relevant and effective safe work method statements;
- guide or induct new workers in the typical hazards for a specific trade; and
- check that all general trade specific hazards have been identified in safety documentation required by the principal contractor.

1.3.2 Hazard identification techniques

The hazard identification techniques have been divided into four categories depending on the area in which they are predominantly applied: -

- Process hazards identification: These methods are used to evaluate possible hazards due to mal-operations associated with the process, and to identify any potential hazards.
- Hardware hazards identification: Hardware tools have been classified as the techniques that predominantly evaluate the hazards due to failures in the process equipment.
- Control hazards identification: Software tools are applied to control systems and critical applications to identify hazards.
- Human hazards identification: Human tools assess the hazards associated with the interaction of the human operators with the process.

1.3.3 Hazard identification process

A hazard identification process is done through a collaborative effort of employers and workers. A step-by-step process could be as follows:

- Gather information about existing hazards that are likely to be present in the workplace. See free hazard identification templates
- Perform regular site walkthroughs to identify new hazards.

- Review accidents and near-miss logs to further investigate the root causes and program shortcomings. Browse free incident report templates.
- Identify similar trends across all incidents, illnesses and hazards recorded. Also, consider hazards that are present on non-routine jobs
- Determine the level of risk, significance, and frequency of each hazard to know which needs to be prioritized.

Hazard identification process does not end with the initial investigation. It should be regarded as an ongoing, integral part of workplace operations.

Hazard identification processes can be done:

- During design and implementation
 - ✓ Designing a new process or procedure
 - ✓ Purchasing and installing new machinery
- Before tasks are done
 - ✓ Checking equipment or following processes
 - ✓ Reviewing surroundings before each shift
- While tasks are being done
 - ✓ Be aware of changes, abnormal conditions, or sudden emissions
- During inspections
 - ✓ Formal, informal, supervisor, health and safety committee
- After incidents
 - ✓ Near misses or minor events
 - ✓ Injuries

1.3.4 Hazard identification methods

Hazard identification tools, techniques, processes and methods include:

- Analysis of injury and claims statistics
- Audits
- Body mapping
- Checklists for hazard identification
- Consultation with workers, clients or other users
- Identification of employee concerns, such as through a hazard reporting system
- Input of managers, OHS representatives, OHS committee and others through consultative processes
- Interviews
- Investigations

- Job safety analyses
- Material Safety Data Sheets (MSDSs)
- Monitoring and measurement
- Observation
- Review of past incidents, incident and hazard reports, hazardous substances and dangerous goods registers, plant and maintenance records
- Review of research and industry literature
- Review of technical standards and other information sources
- Simulations
- Timelines of actions and events
- Use of incident models
- Workplace processes such as 'walk through', surveys and inspections

Here are a few examples of methods you could adopt to identify health and safety hazards before an incident occurs:

- conducting pre-start discussions on the work to be carried out;
- encouraging workers to recognize and highlight hazards while performing work;
- carrying out safety inspections and audits of the workplace and work procedures;
- conducting job safety analyses (or similar task evaluation processes);
- monitoring, measuring and testing the working environment such as noise monitoring, electrical testing and atmospheric testing;
- analyzing proposed new or modified plant, material, process or structure;
- conducting hazard (or risk) surveys;
- reviewing product information, e.g. safety data sheets, operating manuals; and
- researching publicly available data on hazards, e.g. newspaper articles, industry or safety regulator alerts; and
- looking at past incident and near-miss reports.

Remember that a workplace is any place that a worker carries out a work task for your business so even when your workers are offsite or travelling for example, you need to be sure that they are not exposed to health and safety risks.

Hazards may be identified by:

- Observation - use your senses of sight, hearing, smell and touch - combined with knowledge and experience.

- Material Safety Data Sheets (MSDSs) - obtain them from manufacturers and suppliers. Read them carefully to identify possible harm from hazardous substances and precautions that need to be taken.
- Hazard and risk surveys - conduct hazard spotting
- surveys of main work areas. Talk to others about their safety concerns.
- Record analysis - keep records of identified hazards, near misses, injuries and workers' compensation claims to help identify possible trends.
- Discussion groups - are useful for identifying hazards and recommending solutions.
- Safety audits - consider creating a safety committee to investigate safety and help prepare a management plan.
- Information - keep informed of hazards in the industry through the latest available information.
- Consumer information - carefully read and follow consumer guidelines on equipment and substances.
- Regulations and best practices

Self-Check -1	Written Test
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Directions: Match column “A” with column “B” and write the answer on the space provided. (2 pts each)

A	B
-----1. Hazard	A. Physical injury or damage
-----2. Harm	B. Record analysis
-----3. Physical hazards	C. Height of a workbench
-----4. Chemical hazards	D. Snakes
-----5. Biological hazards	E. Toxic gases
-----6. Ergonomic hazards	F. Noise
-----7. Radiation hazards	G. Radioactive materials
-----8. Psychological hazards	H. Stress
	I. Potential source of harm
	J. Regulations
	K. Consumer information

Note: Satisfactory rating - 8 points

Unsatisfactory - below 8 points

Score = _____
Rating: _____

Name: _____

Date: _____

Information Sheet-2	Accessing hazard identification tools, techniques processes and methods
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2.1 Hazard Identification and Assessment

One of the "root causes" of workplace injuries, illnesses, and incidents is the failure to identify or recognize hazards that are present, or that could have been anticipated. A critical element of any effective safety and health program is a proactive, ongoing process to identify and assess such hazards.

To identify and assess hazards, employers and workers:

- Collect and review information about the hazards present or likely to be present in the workplace.
- Conduct initial and periodic workplace inspections of the workplace to identify new or recurring hazards.
- Investigate injuries, illnesses, incidents, and close calls/near misses to determine the underlying hazards, their causes, and safety and health program shortcomings.
- Group similar incidents and identify trends in injuries, illnesses, and hazards reported.
- Consider hazards associated with emergency or nonroutine situations.
- Determine the severity and likelihood of incidents that could result for each hazard identified, and use this information to prioritize corrective actions.

To learn more about fixing other hazards identified using the processes described here:

2.1.1 Identify hazards associated with emergency and nonroutine situations

Emergencies present hazards that need to be recognized and understood. Nonroutine or infrequent tasks, including maintenance and startup/shutdown activities, also present potential hazards. Plans and procedures need to be developed for responding appropriately and safely to hazards associated with foreseeable emergency scenarios and nonroutine situations.

2.1.2 Characterize the nature of identified hazards, identify interim control measures, and prioritize the hazards for control

The next step is to assess and understand the hazards identified and the types of incidents that could result from worker exposure to those hazards. This information can be used to develop interim controls and to prioritize.

It can be accomplished by:

- Evaluate each hazard by considering the severity of potential outcomes, the likelihood that an event or exposure will occur, and the number of workers who might be exposed.
- Use interim control measures to protect workers until more permanent solutions can be implemented.
- Prioritize the hazards so that those presenting the greatest risk are addressed first. Note, however, that employers have an ongoing obligation to control all serious recognized hazards and to protect workers.

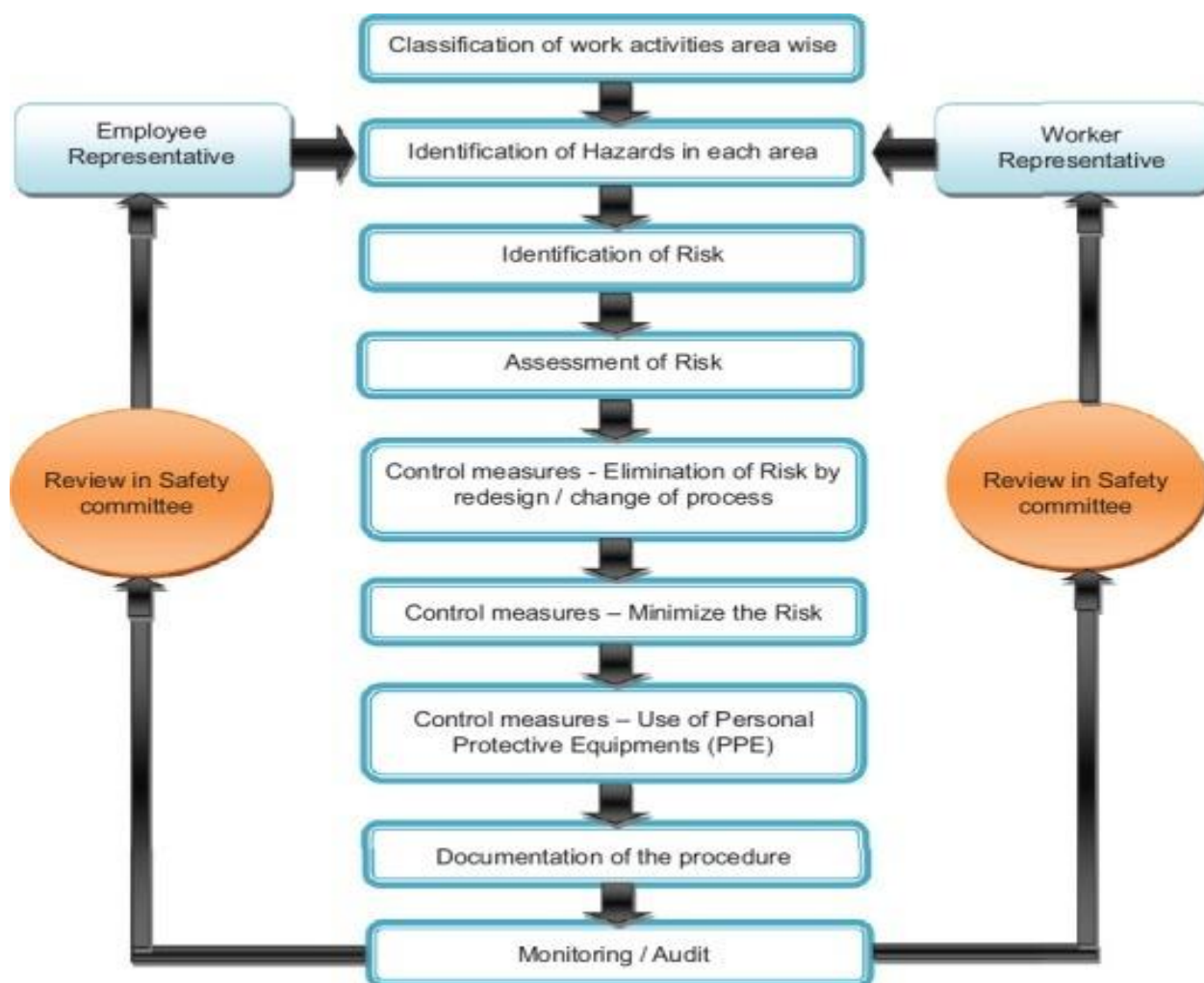


Figure 1: Flow chart of methodology of hazard identification, risk assessment, and control measures

2.2 Aids to hazard identification

There are a number of activities, which can be undertaken as an aid to identifying the hazards present in the workplace:

- **Workplace walkthroughs** - Walking through the area, which the hazard identification is targeting, is an essential information-gathering exercise even if the team or individual involved is familiar with the task.
- **Analyzing available information** - Another important aid to identify hazards is to check all available information.
- **Undertaking a workplace inspection** - One of the most important aids to hazard identification is the workplace inspection this may be conducted as part, or independently, of the workplace walkthrough. Inspections can focus on specific tasks, locations or hazards.
- **Using checklists** - Checklists are an invaluable aid in any safety exercise.

Self-Check -2	Written Test
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Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided (2 pts each)

1. An aid to identifying the hazards present in the workplace by checking all available information is -----
 - A. Undertaking a workplace inspection
 - B. Using checklists
 - C. Analyzing available information
 - D. Workplace walkthroughs

2. Which aids to hazard identification in the workplace can focus on specific tasks, locations or hazards?
 - A. Undertaking a workplace inspection
 - B. Using checklists
 - C. Analyzing available information
 - D. Workplace walkthroughs

3. The first activity in hazard identification, risk assessment, and control measures is ---

A. Assessing risk	C. Classifying activities area wise
B. Identify hazards	D. Documenting the procedures

4. Activities undertaken during the inspection may include:

A. Taking notes	C. Observing work being done
B. Interacting with employees	D. All

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Answers

1. 2. 3. 4.

3.1 Recognizing work place hazards

Recognizing workplace hazards helps to keep employees safe and reduces costs related to injuries and illnesses, including those leading to lost productivity. In recognizing work place hazards:

- Make a checklist to identify all workplace areas in need of a safety inspection
- Inspect buildings and surrounding grounds for possible hazards.
- Inspect equipment and machinery for safety.
- Note possible hazards related to chemical usage and storage.
- Implement a health-and-safety program and provide training to employees on a regular basis.
- Speak to OSHA about a free consultation to help you identify workplace hazards.

3.2 Work place hazard reporting

All hazards that are found in the workplace should be reported immediately to a supervisor, the safety department or management. Designing, setting up and communicating a hazard reporting program is a good idea for any business to help avoid this potentially dangerous attitude. Implementing a hazard reporting program will help ensure that your workplace is safer for your employees and reduce costly incidents or business interruptions.

The following circumstances must be reported immediately:

- If you have an accident, injury or illness which affects your ability to carry out your work
- If you see an accident or become aware of an injury sustained by a non-employee, visitor etc.
- If you see any potential accident, incident or dangerous occurrence
- If any guards or safety devices are ineffective, defective or have been removed
- If your protective clothing or equipment is inadequate, ineffective, damaged or missing
- If a fault occurs to any machinery, plant or equipment which could affect its safe operation
- If you have not been properly trained, or provided with adequate information on how to operate machinery, plant or equipment safely.

During hazard reporting training, the following points should be emphasized:

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- What is an unsafe condition that should be reported?
- What is an unsafe act that should be reported?
- What should be done if an unsafe condition or act is witnessed in the workplace?
- When should a hazard be reported?
- What should employees expect after a hazard is reported?
- Where can employees find a copy of the Hazard Reporting Procedure?

If employees are reluctant to report hazards in the workplace, here are some great ways to improve the quality of hazard reporting in your safety program.

- Make reporting as easy as possible.
- Ensure there is no negative stigma and no punishment attached to hazard reporting.
- Give recognition to those who submit hazard reports.
- Engage workers in the resolution of hazards to ensure the correction is satisfactory for all involved and does not create additional hardships inadvertently.
- Keep an open discussion about safety issues, perhaps following up on the specific hazard reported at the next safety meeting.
- Never assign blame to an individual when it comes to hazards found. Rather, attribute hazards to “systems” like insufficient budget assigned for tool replacements, lack of training, or comprehensive process needed.
- Post signs or posters around the workplace that reinforces the message that unsafe conditions and acts must be reported.

Table 1: Different hazard reporting formats
This form used to report safe concerns

Employee Name:	Employee Number:
Department/ Area:	Supervisor Name:
Describe Fully the safe concerns or hazards:	
What can be done to make this situation Safe?	

Yes	No	Has the supervisor in that area been notified of the safe concern or hazard?
Yes	No	Has the maintenance team been notified of the safe concern or hazard?
Employee signature:		Report date:

HAZARD REPORT

1. Details

Date submitted:

Reported by:

Reported to:

Project/Task/Job:

2. HAZARDS AND CONTROLS USED

Description of the Hazard	Initial Hazard risk level (E/H/M/L)	List of the Controls used to Reduce the Risk Level	Current Hazard Risk Level (E/H/M/L)

Further action Required:.....

Supervisor's Signature:

3.3 Hazard recording

Part of the procedure for reporting hazards includes a system for all employees to record the hazards found in the workplace after communicating them to their immediate supervisor/manager. The Hazard record sheet will be posted in the workplace. After the manager has investigated the reported hazard, they will fill in the last section of the hazard record sheet detailing the remedial action taken or explaining why no action has been taken. If that hazard could affect others, the manager has a duty to inform those other persons of the hazard. Senior management should monitor the reports and action taken on a regular basis.

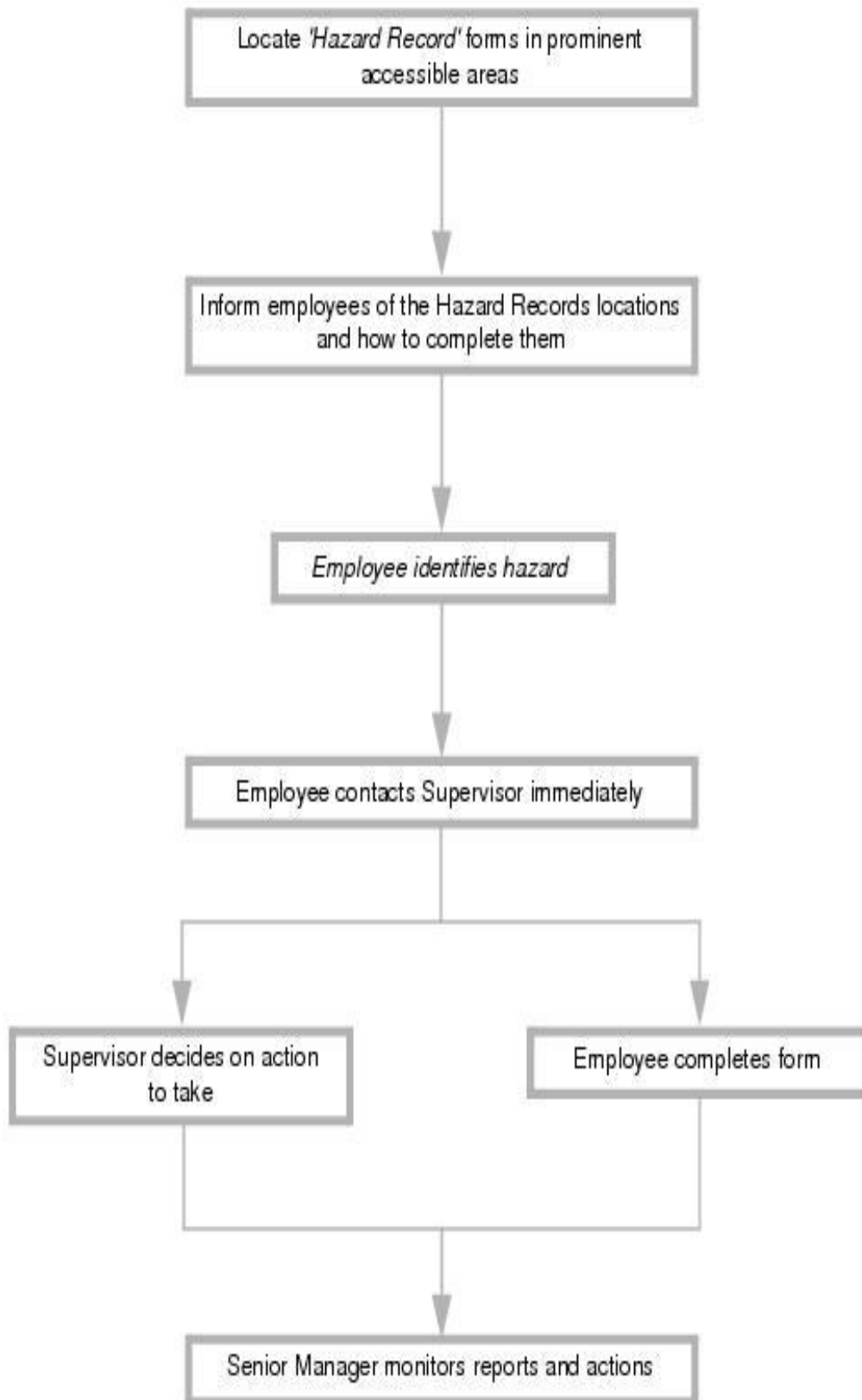


Figure 2:Hazard recording procedure

Table 3 Hazard recording sheet

**Hazard Analysis Critical Control Point (HACCP)

Self-Check -3	Written Test
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Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided. (2 pts each)

1. ----- helps to keep employees safe and reduces costs related to injuries and illnesses.

A. Work place hazard recording	C. Work place hazard reporting
B. Recognizing work place hazards	D. Work place hazard identification

2. Which activities can be done in recognizing work place hazards?
 - A. Note possible hazards related to chemical usage and storage
 - B. Ensure pathways and walkways are clear
 - C. Inspect equipment and machinery for safety
 - D. All

3. Which one of the following ways improve the quality of hazard reporting?
 - A. Blame to an individual when it comes to hazards found
 - B. Make reporting as easy as possible
 - C. Punishment attached to hazard reporting
 - D. Blame an individual who submit hazard reports

4. Which circumstances must be reported immediately?
 - A. If fault occurs to any machinery
 - B. If protective clothing or equipment is adequate
 - C. If you provided with adequate information
 - D. If safety devices are effective

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Answers

- | | | | |
|----|----|---|---|
| 1. | 2. | 3 | 4 |
|----|----|---|---|

Information Sheet-4**Providing information and assistance for inspections or testing****4.1 Inspect the workplace for safety hazards**

Hazards can be introduced over time as workstations and processes change, equipment or tools become worn, maintenance is neglected, or housekeeping practices decline. Setting aside time to regularly inspect the workplace for hazards can help identify shortcomings so that they can be addressed before an incident occurs.

Inspection can be accomplished by:

- Conduct regular inspections of all operations, equipment, work areas and facilities.
- Be sure to document inspections so you can later verify that hazardous conditions are corrected.
- Include all areas and activities in these inspections, such as storage and warehousing, facility and equipment maintenance, purchasing and office functions, and the activities of on-site contractors, subcontractors, and temporary employees.
- Regularly inspect both plant vehicles (e.g., forklifts, powered industrial trucks) and transportation vehicles (e.g., cars, trucks).
- Use checklists that highlight things to look for.
- Before changing operations, workstations, or workflow; making major organizational changes; or introducing new equipment, materials, or processes, seek the input of workers and evaluate the planned changes for potential hazards and related risks.

Persons conducting workplace inspections or testing include:

- Employers
- internal or external consultants
- OHS specialists and testers such as:
 - ✓ Audiologists
 - ✓ Ergonomists
 - ✓ Health professionals
 - ✓ Occupational health professionals
 - ✓ Occupational hygienists
 - ✓ Safety engineers

- ✓ Safety professionals
- ✓ Toxicologists
- OHS technical advisors such as:
 - ✓ Engineers (design, acoustic, safety, mechanical and civil)
 - ✓ Maintenance and tradespeople
 - ✓ Safety representatives
 - ✓ Workplace assessors with experience in language or disability issues

4.2 Inspection process

The inspectors determine whether the item or material is in proper condition and of the right quantity. They also determine whether it conforms to the company's, industry's, local, or national rules and regulations.

In relation to maintenance, better inspection processes result in:

- Equipment problems being detected and receiving maintenance attention before they escalate into costlier issues.
- Maintenance managers having better information for planning preventative maintenance.
- Recurring equipment problems being identified so that their causes can be corrected.
- Personnel taking better care of equipment because regular inspections hold them accountable.
- Procurement of better equipment due to the information being gathered about equipment durability and performance.

Joint health and safety committee members are obvious choices of personnel to carry out formal inspections, especially if they have received training or certification. Criteria for selecting the inspection team are:

- Knowledge of regulations and procedures
- Knowledge of the hazards in the workplace
- Experience with work processes involved

4.3 Inspection checklists

Checklists are useful aids in that they help ensure that no items are overlooked in an inspection. One type of checklist is the "critical parts inventory". This inventory itemizes parts and items that may result in a serious accident if they fail. While many ready-made checklists are available in safety literature, it is best to adapt these to local conditions. The

joint health and safety committee should participate in the preparation of these tailor-made checklists.

Table 4 Sample inspection list

Date: _____

Location/Department: _____

Yes = Satisfactory		No = Unsatisfactory, needs attention	
Yes	No	Yes	No
		Safe Work Practices Use of machine guards Proper manual lifting Smoking only in safe, designated areas Proper use of air hoses No horseplay Other: _____	Fire Protection Fire extinguishers Proper type/location Storage of flammable materials Other: _____
		Use of Personal Protective Equipment Eye/face protection Footwear Gloves Protective clothing Head protection Aprons Respirators Other: _____	Tools and Machinery Lawn mowers Power tools Hand tools Snow blowers Machine guarding Belts, pulleys, gears, shafts Oiling, cleaning, adjusting Maintenance, oil leakage Other: _____
		Housekeeping Proper storage areas Proper storage of flammable material (oily/greasy rags, etc.) Proper disposal of waste Floors (clean, dry, uncluttered) Maintenance of yards, parking lots Other: _____	First aid First aid kits in rooms/vehicles Trained first aid providers Emergency numbers posted All injuries reported Other: _____
		Electrical Safety Machines grounding/GFI Electrical cords Electrical outlets Other: _____	Other: _____ SDS/Labels Dust/vapour/fume control Safe use of ladders/scaffolds New processes or procedures carried out Other: _____

When completing the inspection report, it is a good idea to classify each hazard by degree of possible consequences (for example: A = major, B = serious, C = minor). In this way, priorities for remedial action are established.

4.4 Workplace inspection report

Supervisors and workers are responsible for reporting and taking action on unsafe conditions and acts as they are encountered. The frequency of planned formal inspections may be set out in legislation. Records of previous accidents and the potential for serious accidents and injuries are factors to be included when determining if more frequent inspections are needed.

Table 5: Work inspection report format

Location: _____

Department/Areas covered: _____

Date of Inspection: _____

Time of Inspection: _____

Item (Location)	Hazards Observed	Repeat item Yes/No	Priority	Recommended Action	Responsible Person	Action Taken	Date
Analysis and comments:							

Priority Codes: A - do immediately; B - do within 3 days; C - do within 2 weeks; D - other
 Inspections serve a useful purpose only if remedial action is taken to correct shortcomings. Causes, not symptoms alone, must be rectified. Corrective action should be taken immediately, with the emphasis on engineering controls, management failures, or need for worker education, whatever applies.

Self-Check -4**Written Test**

Directions: Write short and precise answers for the following questions and write the answer on the space provided.

1. List the three criteria for selecting the inspection team. (3 pts)

2. What is the function of work place inspection? (3 pts)

3. What things should be observed during the actual inspection? (2 pts)

4. Who are responsible for reporting and taking action on unsafe conditions of the work place? (2 pts)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

Name: _____

Date: _____

Operation Sheet 1	Procedures for hazard processes and methods
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The following procedures used to identify work place hazards:

Step1: Select appropriate tools and materials

Step2: Inspect the workplace

Step3: Consult your workers

Step4: Review available information



LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 6 hours.

Task 1. Identify work place hazards

Instruction Sheet	Learning Guide 06: Gather information about workplace hazards
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Researching, collecting and recording information about OHS hazards and their associated risks
- Sourcing additional information, expertise or specialist advice from within or external to the workplace
- Conducting workplace inspection to collect further information about OHS hazards and associated risks
- Contributing to the support of OHS practitioners and employees in accessing workplace **sources of information** and data
- Contributing to the support of OHS practitioners and employees accessing external sources of information and data

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to:

- Research, collect and record information about OHS hazards and their associated risks
- Sought additional information, expertise or specialist advice from within or external to the workplace
- Conduct a workplace inspection to collect further information about OHS hazards and associated risks
- Contribute to the support of OHS practitioners and employees in accessing workplace **sources of information** and data
- Contribute to the support of OHS practitioners and employees accessing external sources of information and data

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1, 2, 3, 4and 5”in page 29, 32, 36, 42 and 45 respectively.
4. Accomplish the “Self-check 1, 2, 3, 4and 5” -” in page 31, 35, 41, 44 and 47 respectively

Information Sheet-1	Researching, collecting and recording information about OHS hazards and their associated risks
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1.1 Collecting work place hazard information

Employers and workers can collect information on workplace hazards from both internal and external sources. Collect, organize, and review information with workers to determine what types of hazards may be present and which workers may be exposed or potentially exposed.

Information in the workplace collected from:

- Equipment and machinery operating manuals.
- Safety Data Sheets (SDS) provided by chemical manufacturers.
- Self-inspection reports and inspection reports from insurance carriers, government agencies, and consultants.
- Records of previous injuries and illnesses, such as OSHA 300 and 301 logs and reports of incident investigations.
- Workers' compensation records and reports.
- Patterns of frequently-occurring injuries and illnesses.
- Exposure monitoring results, industrial hygiene assessments, and medical records (appropriately redacted to ensure patient/worker privacy).
- Existing safety and health programs (lockout/tagout, confined spaces, process safety management, personal protective equipment, etc.).
- Input from workers, including surveys or minutes from safety and health committee meetings.
- Results of job hazard analyses, also known as job safety analyses.

If you are new to your workplace, to learn about the hazards of your job, you can:

- ask your supervisor
- ask a member of the health and safety committee or your health and safety representative
- ask about standard operating procedures and precautions for your job
- check product labels and safety data sheets
- pay attention to signs and other warnings in your work
- watch for posters or instructions at the entrance of a chemical storage room to warn of hazardous products
- ask about operating instructions, safe work procedures, processes, etc.

1.2 Recording risk information

Health and Safety legislation focuses on employers' responsibilities to assess and minimize potential risks in the workplace. This requires data collection to complete forms, audits, inspections, and to track staff training; the data can then be used to monitor safety and prevent accidents.

1.2.1 Assessments, audits, and inspections

Regular assessments, audits, and inspections are essential to highlight hazards, risks, and areas of concern, as well as to evaluate safety measures and practices. Accurate records are required to monitor safety, and provide evidence of compliance with safety legislation.

An online survey can be set-up to undertake assessments, audits, and inspections. The questionnaire can ask all the relevant questions to gather required information, and it can be completed multiple times at regular intervals. The data will be stored securely, and can be compiled to provide an overview of risks and actions required.

1.2.2 Training

Within a workplace, employees need to be up-to-date with the risks, hazards, safety measures, and emergency procedures that are in place. Most employees require regular safety training, and further training when new equipment is purchased or working practices change.

Keep a record of training by setting up a survey to log each time an employee completes training. A survey can collect the employees' name, role, the training they've received, and also include their signature as acknowledgement that they understand what they've learnt. Accurate training records will also help to keep track of when employees need to be retrained.

1.2.3 Recording accidents and near-misses

Certain workplace injuries, accidents, or near-misses need to be recorded, but any personal employee details must be stored securely. An online survey will capture all the required details about an incident, and this data can be compiled to create reports that help identify patterns, and areas that need improvement. The data will be transferred and stored securely, and access to the details can be limited to relevant members of staff.

Self-Check -1	Written Test
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Directions: Write short and precise answers for the following questions and write the answer on the space provided.

1. Write the two sources of information for work place hazards. (3 pts)
 - A. -----
 - B. -----
2. List at least four external sources of work place hazards information. (4 pts)
 - A. -----
 - B. -----
 - C. -----
 - D. -----
3. Health and Safety legislation focuses on employers' responsibilities to assess and minimize potential risks in the workplace requires data from -----, ----- and ----- . (3 pts)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Score = _____ Rating: _____

Name: _____

Date: _____

Answers

Information Sheet-2	Souging additional information, expertise or specialist advice
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2.1 Management and consultation

A key mechanism for the management of OHS in the workplace is to consult with employees, in order to tap into their capacity to help identify and resolve health and safety problems. Employers must consult employees about health and safety at work. Workers' detailed knowledge of the practicalities of the job gives them a firsthand understanding of the risks they face, and often they can see safer ways of doing the job. Therefore, they can make a valuable contribution to making the workplace safer and healthier for themselves and others employed by the same organization. Employee participation in consultative procedures helps to ensure that management and workers can work together to create a safe and healthy workplace.

2.2 Legislative requirements

The legislation provides a duty of care for all employers to consult with employees on health and safety matters. This duty to consult is based on the fact that employees' input and participation improves decision making about health and safety matters. Consultation is required by legislation in the following situations:

- When changes are proposed to the premises where people work; systems or methods of work; plant used for work or substances used for work.
- When OHS risks are assessed or reviewed.
- When decisions are made concerning measures to control or eliminate risks.
- When introducing or altering procedures for monitoring risks.
- When decisions are made about adequacy of facilities for the welfare of employees.

2.3 Benefits of consultation

Ideally, effective consultation should bring the following benefits:

- Employees are often ideally placed to monitor and provide feedback on control safety measures introduced.
- Employee awareness of OHS can be reflected on to the job with an increased awareness of their own safety and the safety of others within their work environment.
- Cooperation and commitment of employees is essential for the success of any OHS program.

- Consultation increases employee skills and willingness to identify workplace hazards, assess the level risk and suggest appropriate control measures.
- Employee participation provides valuable input into the development, review and quality improvement of OHS reporting and recording systems, organizational OHS policies and procedures.
- Employee participation promotes a safe system of work.

2.4 Consultation mechanisms

Consultation mechanisms used within workplaces include:

- Management meetings
- OHS Committees
- OHS representatives
- Team/Unit meetings
- Employee feedback
- Information provision.

Once a consultative mechanism is established, the next step is to have agreed procedures for its operation. This could include procedures for:

- meeting protocols
- communication within the workplace
- functions and roles of the employees involved
- the training of employees involved in consultation
- resolving OHS issues and disputes
- role of the union
- any other matter that may be necessary.

2.5 Consultation and risk management

To participate constructively in the consultative process for managing OHS, employees need information and training on work hazards they may face, and in relevant strategies for protecting health and safety. Without this information and training, workers will not be able to play an effective role in identifying, assessing and controlling OHS risks.

They also need to be given information on the employer's duty of care in maintaining a working environment and work practices which do not present risks to workers' health or safety.



Another important pre-requisite for participation in consultative procedures is that workers must be assured that they will not be dismissed or otherwise disadvantaged by exercising their functions as OHS representatives or committee members, or for reporting health and safety problems to their supervisors.

2.6 Consultation action and feedback

To ensure the ongoing effectiveness of consultative arrangements employees must receive feedback to the issues they raise and the suggestions they make. If this doesn't happen, the whole process can lose credibility and lead to a reduction in commitment to the consultative arrangements.

For effective consultation, it is essential that:

- relevant information is shared
- employees have the opportunity to express their views, and
- the employer takes those views into account.

Self-Check -2	Written Test
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Directions: Write short and precise answers for the following questions and write the answer on the space provided.

1. Write the six consultation mechanisms used within workplaces. (6 pts)

- A. -----
- B. -----
- C. -----
- D. -----
- E. -----
- F. -----

2. List at least four effective consultation benefits. (4 pts)

- A. -----
- B. -----
- C. -----
- D. -----

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

Name: _____

Date: _____

Information Sheet-3	Conducting workplace inspection to collect information about OHS hazards and associated risks
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3.1 Introduction workplace inspections

A workplace inspection is a planned walkthrough of a workplace or selected areas or locations of a workplace. Inspections are needed to critically examine all factors (equipment, processes, materials, buildings, procedures) that have the potential to cause injury or illness, and to identify where action is necessary to control hazards.

A schedule of planned inspections is an essential element of a health and safety program in which standards are established and compliance monitored.

The worker health and safety representative must inspect the workplace at least once a month. The inspection must be conducted according to a schedule set by the joint health and safety committee or, in smaller workplaces of 6 to 19 employees, by the employer and health and safety representative. In drawing up the schedule, consider:

- The number of different processes or operations
- Hazardous equipment that must be inspected
- Processes with high hazard potential that may require separate and more frequent inspections
- The number of shifts
- Special inspections whenever a new process or piece of machinery is introduced into the workplace

The purpose of a health and safety inspection is very clear and simple, that is to:

- identify potential health or safety hazards
- assess the current status of safety in the workplace;
- look for opportunities to help improve on current operational procedures
- provide feedback to employees on good safety practices;
- raise awareness of health and safety with employees
- demonstrate visible management and supervisor commitment to safety standards

3.2 Preparing for the inspection

The success of workplace inspections depends on having the necessary information. To properly identify hazards, the person or persons conducting the inspection should have the necessary training, which should include:

- The plant layout – a floor plan is helpful in preparing for the inspection, and recording findings
- The potential hazards associated with the various machinery, equipment, materials, and processes
- Existing controls, applicable standards and regulations
- How to use the information from:
 - Ministry of Labour inspection reports/orders
 - ✓ Results of previous inspections
 - ✓ Accident data
 - ✓ Maintenance reports

3.3 Conducting the inspection

To ensure that all items are covered during the inspection, it is useful to develop checklists which contain reference, in point form, to all potential hazards. These checklists should never be considered as permanent lists. They should be reviewed and added to or revised as necessary – for example, when machinery or processes are changed or when accident experience reveals previously unsuspected hazards

When conducted correctly, safety inspections can definitely promote efficiency and quality improvements within a working environment, which relates to an increase in profitability.

1. Inspectors will use the following tools to conduct appropriate inspections:

- a) Walk through inspection instructions,
- b) Inspection checklist,

Table 6: Sample-Workplace Inspection Checklist

	✓		✓
Walking Surfaces		Fire Prevention	
Walkways free of obstacles		Extinguishers available & accessible	
Cords anchored or covered		Extinguishers/hose cabinets dated monthly	
Floor coverings in good condition		Pull stations accessible	
No slip/trip hazards present		Electric cords/outlets in good condition	
Warnings posted when floors are		Electrical outlets not overloaded	
		Fire exits clear of obstruction	
Furniture/Office Equipment		Fire doors closed	
In good mechanical condition		Fire exit signs lit	
Properly assembled			
Properly adjusted		Security	
Secure from tipping		Employees/visitors have ID badges	

Free from sharp edges/corners		Visitor has safety rules	
Dangerous parts properly guarded			
Emergency switches accessible		First Aid	
Preventative maintenance program		First aid kit available at First Aid Station in main photocopy room	
Loose clothing/jewelry/ID badges secured		First aid kit checked monthly	
Appropriate for work being done		WSIB poster (Form 82) beside the kit	
Defective equipment properly identified		Certificates of first aiders current & posted	
Unnecessary items removed		First aid log sheet available & in use	
Employees instructed on safe/proper use			
Electrical cords at workstation secured		Protective Clothing/Equipment	
		Equipment/clothing provided where required (Including safety kits and cellular phones)	
Bookcase/Shelves/Cabinets		Equipment/clothing used where required	
Secured from tipping			
In good condition		Equipment/clothing in good condition	
Drawers/doors closed when not in use		Employee strained in usage	
One drawer off filing cabinet top at a time			
Materials safely stored/stacked/piled		Are areas appropriately signed	
Heavier or commonly accessed items		Do employees have/wear proper PPE when they visit other workplaces	
Step stools available, if required			
Environment		Posted Information	
		OH&S Act and Regulations	
Light levels adequate		OH&S Policy	
Air quality adequate		Floor Warden/first aiders names	
Temperature and humidity adequate		Joint Health & Safety Committee meeting minutes	
People dressed appropriately for season		Early & Safe Return To Work program	
Air/temperature units unobstructed		Training	
Noise levels appropriate		Employees aware of emergency procedures	
Hazardous materials properly labeled		Employees aware of security procedures	
Hazardous materials properly stored		Employees provided information and instruction to protect their Health and Safety	
Unexpired Material Safety Data Sheets available		Staff Training up-to-date	
Housekeeping satisfactory			

No construction hazards present		Procedures	
		Proper use of ergonomic equipment	
		Procedures for manual materials handling in/around inspection area	
Disabled		Other Unsafe Acts/Conditions	
Required accommodations provided		Contractor infractions (e.g. safe use of ladder)	
Accommodations provided are functional		Randomly ask employees about "near misses"	

c) Inspection worksheet,

Table 7: Sample - Workplace Inspection Worksheet

Inspection Area: Month: _____
 Date of inspection: _____

Type of hazard	Details of hazard	Location hazard	Rating (A, B, C) 1	Repeat item [Y/N]	Assigned to	Date assigned	Recommended action	Details of action taken/not	Completion date
Chemical									
Physical									
Biological									
Stress									
Work Process/ Design									
Safety Hazard									

Inspection conducted by (Name & Signature required): -----
 Senior Management Signature: -----

Copies to: 1) Senior Management 2) JHSC Co-chairs 3) Health and Safety Bulletin Board

1A = high risk B = medium risk C = low risk

d) Previous inspection report(s),

e) Incident/injury reports to review, if needed, corrective action that has been taken.

3.4 Recording observation

It is necessary to review all the information collected and rank each issue in terms of its importance. All identified hazards should be classified A, B, or C, as follows:

- Class A Hazard: A condition or practice likely to cause permanent disability, loss of life or body part, and/or extensive loss of structure, equipment or material. For example, an unguarded saw.



- Class B Hazard: A condition or practice likely to cause serious injury or illness, resulting in temporary disability or property damage that is disruptive but not extensive. For example, spilled oil on the main aisle.
- Class C Hazard: A condition or practice likely to cause minor, non-disabling injury or illness, or non-disruptive property damage. For example, handling solvents without using proper protective gloves.

Online surveys can be used as an effective and reliable data collection tool to help comply with Health and Safety regulations in a number of ways:

- Accurate data collection – mandatory questions and answer validation can be used to ensure that all the necessary information is collected and that it's accurate.
- Flexibility and transportability – online or mobile surveys can be completed anywhere, even without an internet connection, but they still have all the features and functionality to ensure accurate, secure data collection.
- Keep accurate records – data collected in a survey can be stored securely and easily accessed when it's needed.
- Reporting – survey software is more than just a data collection tool; it can provide automated, tailored reports that analyze the results and highlight trends, or areas of concern. It's also possible to compare data with previous results, or benchmark against other organizations.
- Instant notifications – Email alerts can be set-up to alert relevant staff members when a certain response is given, meaning further action is required.

Self-Check -3	Written Test
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Directions: Write short and precise answers for the following questions and write the answer on the space provided.

1. Write tools used to conduct appropriate inspections. (5 pts)
 - A. -----
 - B. -----
 - C. -----
 - D. -----
 - E. -----

2. List the five reasons why online surveys can be used as an effective and reliable data collection tool. (5 pts)
 - A. -----
 - B. -----
 - C. -----
 - D. -----
 - E. -----

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

Name: _____

Date: _____



Information Sheet-4	Contributing in accessing workplace sources of information and data regarding hazard identification
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4.1 Need for information

Reliable, comprehensive, and intelligible information is essential to the securing of occupational safety and health (OSH) objectives. This information must be conveniently accessible, up-to-date, and directly applicable to the specific circumstances of the user. Occupational safety and health information is needed in order:

- To make informed decisions.
- To safely discharge duties.
- To meet legislative and regulatory requirements.
- To exercise rights

4.2 Effective information dissemination

The following considerations need to be addressed in order to ensure that a dissemination programme for occupational safety and health information will be effective.

- The information must be presented in a form that is suited to the needs, circumstances and background of the end-user.
- Alternative audiences should be considered
- Information must reach the people who need it, and a comprehensive strategy should be developed to communicate it to them.
- Frequently, secondary disseminators can be used to augment a dissemination strategy. Secondary disseminators can also reduce costs because they may be willing to reprint the material for those who may need it, particularly if they are loaned the camera copy or negatives.

4.3 Nature of safety and health information

OSH information needs to be authoritative and, more important, validated by experts. Authoritative information comes from official and recognized sources or organizations, but one must be aware that information from other sources, which does not appear to have been validated, is increasingly being produced.

4.4 Training for accessing information

Workers and managers need to know from whom and from where they can obtain information. For example, Material Safety Data Sheets are an important source of health and safety information about chemicals used in the workplace. The training assumption is

that such people have a good grasp of occupational health and safety but need basic training in information management skills. Such skills include searching on-line information resources, and making effective use of an information service. The training should include practical experience of working as a team with professional library and information staff.

Workplace hazard information can be accessed from the following sources of information:

- Audits
- Employer groups
- Hazard, incident and investigation reports
- Industry bodies
- Legislation, standards, manufacturers' manuals and specifications available at the workplace
- Minutes of meetings from incident investigations
- OHS professional bodies
- OHS specialists
- other manufacturers' manuals and specifications
- Regulatory authorities (for codes of practice, legislation)
- Reports
- Unions
- Websites, journals and newsletters
- Workplace inspections

It may be necessary to research information about what might be a hazard as well as how much harm that hazard might cause. Sources of information include:

- Safety Data Sheets (SDSs).
- Manufacturer's operating instructions, manuals, etc.
- Test or monitor for exposure (occupational hygiene testing such as chemical or noise exposure).
- Results of any job safety analysis.
- Experiences of other organizations similar to yours.
- Trade or safety associations.
- Information, publications, alerts, etc. as published by reputable organizations, labour unions, or government agencies.

Self-Check -4	Written Test
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Directions: Choose the best answer for the following questions and write your answer on the answer sheet provided. (2 pts each)

1. Occupational safety and health information is needed to-----
 - A. Reduce the number of employees
 - B. Violate legislative and regulatory requirements
 - C. Safely discharge duties
 - D. Punish an individual who report hazard

2. If OSH information not authoritative validated by experts which one of the following errors are occurred?
 - A. The correct chemical name is used
 - B. Measurements are not checked
 - C. The decimal point is in the correct place
 - D. Illustrations show correct safety and health practices

3. To secure of occupational safety and health (OSH) objectives, information should be—
 - A. Directly applicable
 - B. Out-to-date
 - C. Unreliable
 - D. incomprehensive

4. Workplace hazard information can be accessed from -----
 - A. Manufacturers' manuals
 - B. OHS professional bodies
 - C. Employer groups
 - D. All

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Answers

1. 2. 3. 4.

Information Sheet-5	Contributing in accessing external sources of information and data related to hazard identification
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5.1 Contributing external sources of information

There are external sources of information that you can use, such as:

- Websites, publications and alerts from OSHA, the CDC, EU OSHA, the UK HSE, and other government agencies from around the world.
- Best practices or other publications made available by industry groups or trade associations.
- Labor unions, state and local occupational safety and health committees/coalitions, and worker advocacy groups.
- Safety and health subject matter experts and consultants.

Be sure that all internal sources of information are always up-to-date, and monitor the external sources.

Identifying hazards is all about good quality information. We must look outside the workplace for the ‘bigger picture’ on legislative requirements, guidance information, industry practice and advice. This section requires you to identify the sources outside the workplace that may provide information that, combined with information from within the workplace, can be applied to identify hazards.

5.2 Identify sources of external information

Sources of information external to the workplace include:

- legislation;
- codes of practice, standards and guidance material;
- industry-specific information;
- international information;
- databases; and
- OHS specialist advisers.

5.2.1 OHS legislation

OHS acts and regulations set the obligations and rules for managing OHS. Hazard-specific regulations, such as those for hazardous substances, noise, plant and manual handling, give information on the obligations for identifying specific hazards. In some cases, this information is general (ie, identify hazards); in other cases, the regulations give specific information and the circumstances and type of hazards to be identified.

5.2.2 Codes of practice

Codes of practice are an invaluable source of information for hazard identification as they give information on the hazard, the factors that contribute to the risk and what is acceptable/not acceptable.

5.2.3 Industry-specific information

The web sites for Safe Work and the various state OHS regulators all have industry-specific information. Work Safe also has regular e-mail bulletins targeting the manufacturing and construction industries. Employer and union bodies often produce industry-specific and hazard-specific OHS information.

5.2.4 International experience

As we need to look outside the workplace for the ‘bigger picture’ on hazards, we should also look outside country for information on hazards generally and also industry-specific information.

5.2.5 Databases

Injury databases provide information on the causation and frequency of injuries, and so give an indication of hazards that may be present.

5.2.6 OHS specialist advisers

It is not only practically important, but it is an ethical responsibility for all OHS practitioners to recognize their own professional limitations and when to call in specialist advice.

OHS specialists may include:

- **Safety professionals provide** advice on development and implementation of systematic approaches to managing OHS and OHS risk management.
- **Ergonomists** use scientific and technical knowledge about human capabilities, functions and requirements to look at the design of jobs, systems, machinery and equipment and the environment where work is done.
- **Occupational hygienists** apply a scientific and technical approach to identification, assessment and control of chemical physical and biological agents that may affect the health of people at work.
- **Occupational health professionals** include occupational physicians, occupational health nurses, occupational therapists, occupational physiotherapists and health physicists.

Self-Check -5	Written Test
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Directions: Match the external sources of information to the workplace in column “A” with their definitions in column “B” and write the answer on the space provided. (2 pts each)

A	B
-----1. OHS legislation	A. An invaluable source of information for hazard identification
-----2. Codes of practice	B. Set the obligations and rules for managing OHS
-----3. Databases	C. Information from outside country on hazards
-----4. OHS specialist advisers	D. Give an indication of hazards that may be present
-----5. International experience	E. An ethical responsibility for all OHS practitioners
	F. Safety and health subject matter experts
	G. Websites, publications and alerts
	H. OHS committees/coalitions

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

Name: _____

Date: _____



Instruction Sheet	Learning Guide 07: Contribute to OHS risk assessment
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Using appropriate risk assessment tools
- Identifying, categorising and assessing risk factors
- Sourcing additional information, expertise, or specialist advice for consequence of identified risks
- Documenting outcomes of the risk assessment process

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to:

- Use appropriate risk assessment tools
- Identify, categorise and assess risk factors
- Sought additional information, expertise, or specialist advice for consequence of identified risks
- Document outcomes of the risk assessment process

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1, 2, 3 and 4” in page 49, 56, 59 and 62 respectively.
4. Accomplish the “Self-check 1, 2, 3 and 4” -” in page 55, 58, 61 and 67 respectively
5. If you accomplish the self-checks, do operation sheet in page 68
6. LAP Test in page 69

Information Sheet-1	Using appropriate risk assessment tools
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1.1 Introduction to risk assessment

A 'risk' refers to the possibility of something happening. The term 'risk' is usually used to refer to the possibility of an injury or other negative outcome occurring. A low risk means a low likelihood of a negative outcome. Some of the most common health risks associated with workplace hazards include:

- breathing problems;
- skin irritation;
- damage to muscles, bones and joints;
- hearing damage;
- reduced wellbeing.

The purpose of risk assessment is to identify and manage hazards to reduce the likelihood of incidents occurring that could cause harm or injury for employees. Risk assessment is a key preliminary procedure for all types of activities.

Risk assessments are very important as they form an integral part of an occupational health and safety management plan. They help to:

- Create awareness of hazards and risk.
- Identify who may be at risk (e.g., employees, cleaners, visitors, contractors, the public, etc.).
- Determine whether a control program is required for a particular hazard.
- Determine if existing control measures are adequate or if more should be done.
- Prevent injuries or illnesses, especially when done at the design or planning stage.
- Prioritize hazards and control measures.
- Meet legal requirements where applicable.

A risk assessment involves considering what could happen if someone is exposed to a hazard and the likelihood of it happening. A risk assessment can help you determine:

- how severe a risk is
- whether any existing control measures are effective
- what action you should take to control the risk
- how urgently the action needs to be taken.

A risk assessment should be done when:

- there is uncertainty about how a hazard may result in injury or illness
- the work activity involves a number of different hazards and there is a lack of understanding about how the hazards may interact with each other to produce new or greater risks
- changes at the workplace occur that may impact on the effectiveness of control measures.

A risk assessment is not necessary in the following situations:

- Legislation requires some hazards or risks to be controlled in a specific way – these requirements must be complied with.
- A code of practice or other guidance sets out a way of controlling a hazard or risk that is applicable to your situation and you choose to use the recommended controls. In these instances, the guidance can be followed.
- There are well-known and effective controls that are in use in the particular industry, that are suited to the circumstances in your workplace. These controls can simply be implemented.

1.2 Risk assessment methods

All hazards have the potential to cause different types and severities of harm, ranging from minor discomfort to a serious injury or death. Each of the outcomes involves a different type of harm with a range of severities, and each has a different likelihood of occurrence.

The following methods used to assess work place risks:

- Work out how severe the harm could be
- Work out how hazards may cause harm
- Work out the likelihood of harm occurring

You can rate the likelihood as one of the following:

- Certain to occur - expected to occur in most circumstances
- Very likely - will probably occur in most circumstances
- Possible – might occur occasionally
- Unlikely – could happen at some time
- Rare – may happen only in exceptional circumstances

1.3 Risk management

Risk management is no longer special or optional. It is a necessary consideration each time we make a decision – whether to develop a relationship, start a project or hold an event. It is required for good quality outcomes. This is risk management. To manage risk, we apply the standard in the way described here. It takes into account the unique and special environments in which we work.

Risk Management Process - Overview

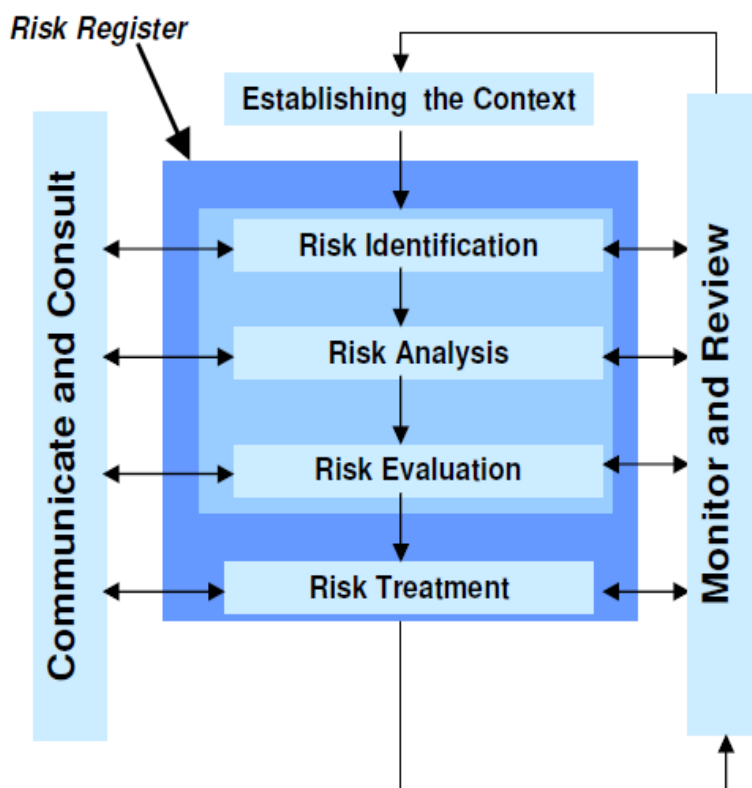


Figure 8: Risk management process

The following steps used to manage work place risks:

Establish the context: Establish the context by identifying the objectives of the activity, project, event or relationship and then consider the internal and external parameters within which the risk must be managed.

The level of risk will increase as the likelihood of harm and its severity increases.

The Process:

- Set the scope
- Define the broad objectives.

- Identify the relevant stakeholders
- Gather background information

Identify the risk: Identify the risks that might have an impact on the objectives of the organization. Identify sources of the risk, areas of impact, events (including changes in circumstances) and their causes and potential consequences.

In identifying the risk, consider these kinds of questions:

- What could happen:
- How could it happen:
- Where could it happen
- Why might it happen
- What might be the impact
- Who does or can influence this partnership, program, project or event? How much is within the organization’s control or influence?

Wherever possible, provide quantitative and/or qualitative data to assist in describing the risk or to support the risk rating. Sources of information may include past records, past activities & experiences, staff expertise, industry practice, literature and expert opinion.

Analyze the risk: Once the risk has been identified and the context, causes, contributing factors and consequences have been described, look at the strengths and weaknesses of existing systems and processes designed to help control the risk. Knowing what controls are already in place, and whether they are effective, helps to identify what - if any - further action is needed. The process includes:

- Identify the existing controls
- Assess the likelihood
- Assess the consequence
- Rate the level of risk

Evaluate the risk: The purpose of risk evaluation is to make decisions based on the outcome of the riskanalysis regarding which risks require treatment and the priorities of that treatment.

Depending on the risk rating and the adequacy of the current controls in place an evaluation is made whether to:

- **Accepting the risk:** A risk is called acceptable if it is not going to be treated. Accepting a risk does not imply that the risk is insignificant. A risk may be acceptable or tolerable in the following circumstances:
 - ✓ No treatment is available
 - ✓ Treatment costs are prohibitive (particularly relevant with lower ranked risks)
 - ✓ The level of risk is low and does not warrant using resources to treat it
 - ✓ The opportunities involved significantly outweigh the threats

- **Treat the risk:** There are three basic methods of treating (actioning) the risk, these are:
 - ✓ Avoid the Risk:
 - ✓ Transfer the Risk: Risk transfer transmits the organization’s risk to an outside party.
 - ✓ Control the Risk

In treatment process:

- Decide if specific treatment is necessary
- Work out what kind of treatment is desirable for this risk
- Identify and design a preferred treatment option
- Evaluate treatment options
- Document the risk treatment plan
- Implement agreed treatments
- Once the risk has been treated, assess the level of residual risk.

1.4 Risk management tools & techniques

The following are some of the best risk management tools and techniques that professional project managers use to manage their projects against the inevitable risks, issues and changes.

- **Brainstorming:** To begin the brainstorming process, you must assess the risks that could impact your project.
- **Root cause analysis:** Root cause analysis is a systematic process used to identify the fundamental risks that are embedded in the project.
- **SWOT:** SWOT, or strengths, weaknesses, opportunities, threats, is another tool to help with identifying risks.

- **Risk assessment template:** It basically provides a space in which to collect the risks of a project, which is also helpful when executing the project and tracking any risks that become reality.
- **Risk register:** The risk register is a strategic tool to control risk in a project. It works to gather the data on what risks the team expects and then a way to respond proactively if they do show up in the project.
- **Probability and impact matrix:** It help prioritize risk, which is important, as you don't want to waste time chasing a small risk and exhaust your resources.

Having established the likelihood and impact scores, the scores should be plotted on the Risk Matrix (see table 3.1) and to determine the rating of the risk being assessed in terms of a colour and a numerical score for the risk (e.g. a moderate impact 3 and a possible likelihood 3 will result in a rating of an amber 9).

The high risks are scored between 15 and 25 and are coloured Red.

Medium risks are scored between 6 and 12 and are coloured Amber.

Low risks are scored between 1 and 5 and are coloured Green.

3. RISK MATRIX	Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)
Almost Certain (5)	5	10	15	20	25
Likely (4)	4	8	12	16	20
Possible (3)	3	6	9	12	15
Unlikely (2)	2	4	6	8	10
Rare/Remote (1)	1	2	3	4	5

Example 1: Likelihood of 3 (Possible) x Impact of 2 (Minor) = 2 x 3 = 6 (Amber)

Example 2: Likelihood of 2 (Unlikely) x Impact of 3 (Moderate) = 3 x 2 = 6 (Amber).

- **Risk data quality assessment:** This is used to then find the level to which information about the risk is relevant to the project manager.

Self-Check -1	Written Test
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Directions: Choose the best answer for the following questions. Use the answer sheet provided (2 pts each)

1. Which method of risk treatment transmits the organization’s risk to an outside party?

A. Control the Risk	C. Avoid the Risk
B. Transfer the Risk	D. Assessing risk

2. Which one of the following risk management tools helps prioritize risk?

A. Root cause analysis	C. Workflow analysis
B. Risk register	D. Probability and impact matrix

3. -----sets the framework within which the risk assessment should be undertaken.

A. Treat the risk	C. Identify the risk
B. Establishing the context	D. Evaluate the risk

4. A systematic process used to identify the fundamental risks that are embedded in the project is -----

A. Risk data quality assessment	C. Root cause analysis
B. SWOT analysis	D. Brainstorming

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Answers

1. 2. 3. 4.



Information Sheet-2	Identifying, categorizing and assessing risk factors for risk assessment
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2.1 Identifying risk factors

Risk factors play a central part in prediction and prevention. A critical issue in any discussion of risk factors is to ensure that the term risk factor, and associated terms such as correlate and marker, are defined in a precise, consistent manner.

Acorrelate is a variable that is associated, either positively or negatively, with an outcome. The presence or absence of a correlate can be measured in each subject. The term subject need not be an individual but could be a family or an entire community.

The correlate can be measured at the same time as the outcome and thus be a concomitant of it, or it can be measured after the outcome and be a consequence or result of it.

A risk factor can be considered a type of correlate. It is associated with an increased probability of an outcome, usually an unpleasant one. This is the first definition characteristics of a risk factor. The measure of the risk factor is taken on each subject before the subject has the outcome of interest.

The second defining characteristic of a risk factor is that it can be used to divide a population into high risk and low risk subgroups. The probability of the outcome must be shown to be greater in the high risk compared with the low risk group. Thus, the second defining characteristics of a risk factor are that it precedes the outcome, and when used it divides a population into high risk and low risk subgroups.

2.2 Types of risk factors

There are 3 different types of risk factors that must be distinguished from each other in planning prevention initiatives.

Fixed marker: a risk factor that cannot be shown to change. Examples of fixed markers are traits such as sex, ethnicity, and date of birth. It should be noted, however, that although sex is a fixed marker, the mechanisms by which sex has its effect on a particular outcome may qualify as risk factors.

Variable risk factor: When a risk factor can be shown to change spontaneously within a subject, or be changed as a result of an intervention. If the risk factor, when it is manipulated, does not change the risk of the outcome, then this is called a variable marker.

Causal risk factor: The risk factor can be shown to be manipulated and when manipulated changes the probability of the outcome. It is important then to distinguish among a non-correlate, a correlate that is a concomitant or consequence, a correlate that is a risk factor, and among risk factors those that are fixed markers, variable markers, and causal risk factors.

All of the comments thus far, however, apply equally well to factors, called *protective factors*, that increase the probability of welcome outcomes.

2.3 Potency of risk factors

A second critical issue in any discussion of risk factors is the potency or strength of the risk factor. The potency of a risk factor can be defined as the maximal discrepancy achievable using the risk factor to dichotomize the population into high and low risk groups. A detailed discussion of the potency of risk factors is available. The present write up focuses on several issues that are particularly relevant to clinicians, policy makers, and researchers.

There are many different measures of association arising out of the 2x2 table. The definitions tend to vary by the field of investigation. For example, epidemiology commonly uses odds ratio and attributable risk, whereas psychology and sociology lean towards phi coefficient and gamma, respectively. Each of these measures, and others, usually carries with its implicit tradeoffs between false positives and false negatives. It turns out then that no single measure of the potency of a risk factor will always be the right one, and no measure will always be the wrong one.

Self-Check -2	Written Test
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Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

- is associated with an increased probability of an outcome, usually an unpleasant one.

A. Fixed marker	C. Risk factor
B. Correlate	D. Subject
- When a risk factor can be changed as a result of an intervention, it is called -----

A. Fixed marker	C. Causal risk factor
B. Variable risk factor	D. Protective factors
- Which one of the following used to dichotomies the population into high and low risk groups?

A. Protective factors	C. Causal risk factor
B. Potency of a risk factor	D. Fixed marker
- is a variable of risk factor which is associated, either positively or negatively, with _____ an _____ outcome.

A. Protective	C. Correlate
B. Marker	D. Subject

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Answers

1. 2. 3. 4.

Information Sheet-3	Souging additional information, expertise, or specialist advice for identified risks
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3.1 Communicate and consult

Effective communication and consultation are essential to ensure that those responsible for implementing risk management, and those with a vested interest, understand the basis on which decisions are made and the reasons why particular treatment options are selected.

Communicate and consult with internal and external stakeholders during any and all stages of the risk management process, particularly when plans are being first considered and when significant decisions need to be made.

Risk management is enhanced through effective communication and consultation when all parties understand each other's perspectives and, where appropriate, are actively involved in decision-making.

Methods of communication and consultation may include:

- meetings;
- distribution of minutes;
- reports;
- on-line communication systems and learning packages;
- induction packages;
- newsletters;
- circulation lists;
- flow charts; and
- staff awareness and education sessions / staff training.

A collaborative and consultative team approach through co-creation is more likely to:

- Help establish the context appropriately;
- Ensure the interests of all stakeholders are understood and considered;
- Ensure that risks are adequately identified;
- Bring together different areas of expertise when assessing or analyzing risks;
- Ensure that different, and sometimes opposing, views are appropriately considered when defining risk criteria and in evaluating risks;
- Help secure endorsement and support for a treatment plan; and

- Enhance any change management processes associated with the risk.

3.2 Hazards related to workplace organization and practices

Examples of workplace features that are potentially hazardous include:

- Administrative policies and procedures.
- Equipment not provided or not maintained adequately.
- Staffing levels.
- Extended workdays.
- Working in isolation.
- Lack of variability.
- Inadequate rest breaks.
- Lack of consultation with workers when purchasing new equipment
- Inadequate training
- Workplace attitudes and practices that do not support a culture of safety.

Self-Check -3	Written Test
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Directions: Write short and precise answers for the following questions and write your answer on the space provided.

1. Write at least five methods of communication and consultation of risk management. (5 pts)
 - a. -----
 - b. -----
 - c. -----
 - d. -----
 - e. -----

2. Write five examples of workplace features that are potentially hazardous. (5 pts)
 - a. -----
 - b. -----
 - c. -----
 - d. -----
 - e. -----

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

Name: _____

Date: _____

Information Sheet-4	Documenting outcomes of the risk assessment process
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4.1 Documenting risk assessment

Documentation must deliver a consistent message, speak a common language and have clear objectives allied to the maintenance of the organization’s objectives, capable of being constantly reviewed and evaluated.

Documentation of the hazard assessment is required through a written certification that includes the following information:

- Identification of the workplace evaluated;
- Name of the person conducting the assessment;
- Date of the assessment; and
- Identification of the document certifying completion of the hazard assessment.

Considerations:

- How risk management is integrated within the organization
- Understanding the organizations appetite and attitude for risk
- The principles in governing risk
- Risk and its impact on organization roles and responsibilities
- The Control environment
- The communication channels, protocols for risk escalation and risk discussions,
- Risk methodology and analysis,
- Risks tools (risk materiality, stress testing, scenario design)
- Risk management roles and responsibilities, risk management KPIs
- Integration of risk information into management reporting
- Policy and Procedures
- The auditing risk management effectiveness

The nature and number of documents will depend largely on the size of the organization. Some documents may have a utilitarian purpose and incorporate many of the components listed below. The sample list below is not intended to be exhaustive but rather to give an idea of what risk documentation requirements may incorporate:

- Risk appetite statement
- Risk management framework
- Risk materiality

- Risk register
- Risk taxonomy
- Risk charters and mandates
- Risk management policy and procedures
- Methodologies
- Risk escalation process
- Risk metrics
- Risk communications
- Risk training courses

4.2 Characteristics of risk documentation

Good risk documentation will exhibit the following characteristics:

- It must be relevant (meeting best practices).
- It is easily understood.
- It is stored in a well-organized risk library and easily accessible to employees.
- It is a living document e.g. able to be amended and capable of tracking changes.
- It meets Industry and Regulatory standards.
- It has a clear approval process and time frame.
- It is reflected in both internal and external communications.
- It must be evidenced throughout the organization from training to decision making.

To achieve clarity, the risk documentation should be written by someone, independent of the organization, who can challenge known assumptions with a questioning mind. The risk writer will still need input from the business, seek collaboration and guide the organization towards ownership of the final document. As a result, the document will be an objective piece of writing, speaking the language of the organization whilst being understood by the outside world.

4.3 Documents involved in risk assessment

There are different kinds of risk assessment reports. As risk assessment follows risk identification, a lot of these documents will be based on the risk identification reports. Documentation is done in a systematic way and can be from different inputs. Some of them are listed below.

- Stakeholder Analysis

- Work Breakdown Structure(WBS)
- Scope - Risk Report:
- Cost Evaluation Risk Report
- Schedule Evaluation Risk Report
- Technical Evaluation Risk Report

4.4 Recording the risk management process

To ensure that risk management is effective, and to provide evidence of a *demonstrable* risk management system, it is important to have a documented formal record of the risk management process and outcomes.

Risk Register. A risk register is simply a documented record of the identified risks, their significance or rating, and how they are managed or treated.

When documenting a risk assessment record the following information within the risk register:

- A description of the risk (setting the context)
- Causes or contributing factors
- Consequences (impacts) of the risk – actual or potential
- Current controls in place that help manage the risk
- An assessment of the likelihood and consequence based on current or existing controls, to rate each risk
- Further actions or treatments needed to address the risk
- Any progress updates as the treatments are implemented
- Results from monitoring and review, including effectiveness of controls

Printing risk records: the risk register can automatically generate Risk Summary Reports. These reports, which reflect the risk profile for the area, can be used for local area reporting and to supplement formal/annual reports. The risk register also generates Risk Management Reports and Risk Treatment Plans for individual risks.

4.5 Risk control tools and techniques

- **Risk reassessment:** Risk reassessments involve the following activities:
 - ✓ Identifying new risks
 - ✓ Evaluating current risks
 - ✓ Evaluating the risk management processes

- ✓ Closing risks
- **Risk audit:** Project managers facilitate risk audits to examine the effectiveness of the risk responses and to determine whether changes are required. The team also examines the processes to identify, evaluate, respond to, and control risks.
- **Variance and trend analysis:** As with many control processes, we now look for variances between the schedule and cost baselines and the actual results. When we the variances are increasing, there is increased uncertainty and risk. Watch the trends and respond before the situation gets out of hand.
- **Technical performance measurement:** The technical performance measurement is a measurement of the technical accomplishments.
- **Reserve analysis:** During the cost planning, the contingency and management reserves are added to the project budget as needed. As risks occur, the reserves may decrease. Depending on how your organization handles reserves and your risk management plan, project managers may request more reserves when inadequate.
- **Meetings:** Project managers should be deliberate risk managers. Engage your team members and appropriate stakeholders in meetings to facilitate the risk management processes. For these meetings, be sure to:
 - ✓ Distribute an agenda with a clearly stated purpose
 - ✓ Invite the appropriate team members and stakeholders
 - ✓ Use appropriate tools and techniques
 - ✓ Distribute meeting minutes containing decisions, action items, issues, and risks

In order to control workplace hazards and eliminate or reduce the risk, you should take the following steps:

- identify the hazard by carrying out a workplace risk assessment;
- determine how employees might be at risk;
- evaluate the risks;
- record and review hazards at least annually, or earlier if something changes.

The following are hierarchies that are used for risk control:

- **Design or reorganize to eliminate the hazard from the workplace:** try to ensure that hazards are designed out when new materials, equipment and work systems are being planned for the workplace.

- **Remove or substitute the hazard:** where possible remove the hazard or substitute with less hazardous materials, equipment or substances.
- **Enclose or isolate the hazard:** this can be done through the use of barriers, introducing a strict work area, enclosing a noisy process from a person.
- **Minimize through engineering controls:** this can be done through the use of machine guards, effective ventilation systems etc.
- **Minimizes the risk by adopting administrative controls:** establish appropriate procedures and safe work practices such as job rotation to reduce exposure time or boredom; timing the work so that fewer employees are exposed; routine maintenance and housekeeping procedures; training on hazards and correct work methods.
- **Personal Protective Equipment:** provide suitable and properly maintained personal protective equipment and ensure employees are trained in its proper use (examples include gloves, earplugs etc.).

If no single control is appropriate, a combination of the above controls needs to be taken to minimize the risk to the lowest level that is reasonably practicable.

Self-Check -4	Written Test
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Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2pts each).

- A documented record of the identified risks, their significance or rating, and how they are managed or treated is known as -----.
 A. Risk audit
 B. Printing risk records
 C. Risk Register
 D. Reserve analysis
- Which hierarchy of risk control can be done through the use of barriers, introducing a strict work area, enclosing a noisy process from a person?
 A. Personal Protective Equipment
 B. Enclose or isolate the hazard
 C. Minimize through engineering controls
 D. Remove or substitute the hazard
- Which risk control techniques used to examine the effectiveness of the risk responses and to determine whether changes are required.
 A. Risk reassessment
 B. Risk audit
 C. Meetings
 D. Reserve analysis
- A risk assessment reports which reports risks related to resources, manpower and departments is -----
 A. Technical Evaluation Risk Report
 B. Schedule Evaluation Risk Report
 C. Cost Evaluation Risk Report
 D. WBS - Risk Report

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

Name: _____ Date: _____

Answer Sheet

1. 2. 3. 4.



Operation Sheet 1

Procedures for appropriate risk assessment

The following procedures used to assess risk:

Step 1: Select appropriate tools and materials

Step 1: Establish the context

Step 2: Identify the risk

Step 3: Analyze the risk

Step 4: Evaluate the risk Step 5: Treat the risk



LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 6 hours.

Task 1. **Assess risk**

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