

## Risk Assessment and Job Hazard Analysis

This Fast Fact is intended for use by managers, supervisors, workers and joint health and safety committee members. It outlines the steps in a risk assessment and provides details on completing a job hazard analysis.

Identifying hazards and assessing the level of risk associated with those hazards is the most important activity you perform every day, at work and away from work. Effective health and safety management is based on a universal understanding of risks and how to control them through good planning.

A Risk Assessment (RA) is a process that:

- identifies hazards
- evaluates the risk of harm from those hazards
- implements measures to eliminate or control those hazards
- prioritizes occupations that require Job Hazard Analysis

A Job Hazard Analysis (JHA) is a process that:

- offers a step-by-step approach to recognize, assess and control hazards and monitor the ongoing effectiveness of controls
- systematically evaluates certain jobs, tasks or processes
- helps to eliminate or reduce risks or hazards in order to protect workers from injury or illness

### Part A – Steps in a Risk Assessment

#### 1. Inventory of Occupations

Every department and/or position must be considered in order to conduct an effective risk assessment. Create an inventory of occupations. A risk assessment should be performed for all occupations.



#### 2. Identify Job Tasks

Identify the job tasks within each occupation. This will provide you with an inventory of all job tasks within all occupations from which you can evaluate risk.

Focus on hands-on work as opposed to administrative duties associated with each occupation or major work assignment.

#### 3. Evaluate Risks

Using frequency, probability and consequence as your guide, evaluate the risk of an injury or illness occurring as a result of the job tasks within each occupation. Think about the number of times that job task is done; is it often, frequent or rarely performed? What are the consequences of something going wrong? What are the chances that something could happen? Think globally. Has this happened in another organization, community, province or country?

#### 4. Prioritize Job Tasks by Risk

Take all the job tasks you inventoried and prioritize them by risk. This will provide you with an inventory of job tasks and help you to select the job tasks with the highest degree of risk from all of the occupations at your organization. From this, you can develop an action plan to complete your JHA's in a systematic way based on risk.

### 5. Conduct the JHA

Conduct the JHA on the inventoried job tasks. It is recommended this be done as a team effort with representatives from management, workers, the joint health and safety committee (JHSC) or Health and Safety Representative (HSR), and expertise from a qualified person where required. The use of safety professionals, occupational hygienists, infection control specialists, etc. should be considered in the process. See Part B of this Fast Fact for detailed steps in conducting a JHA.

### 6. Re-evaluate

This entire process should be in a written procedure and a requirement to reevaluate on a regular basis must be incorporated into the process.

## Part B - Steps in a Job Hazard Analysis

Now that you have completed a prioritized inventory of job tasks, the next step is creating a Job Hazard Analysis (JHA) for each job task. The JHA provides an analysis of each task, identifies the hazard with each job step and assists in the creation of a job procedure.

### 1. Select a job task from the inventory

- Always start with the highest priority job task; priority is assigned based on the risk assessment.

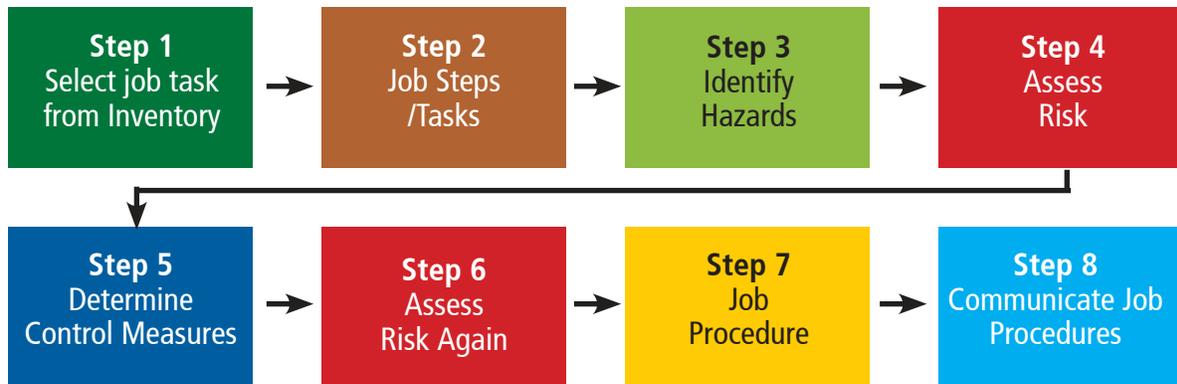
### 2. Break the job down into its basic steps or tasks

- Observe and list all the main steps needed to perform the job. Some steps may not be performed every time; however, if that step is generally part of the job it should be listed.
- You should not have more than 15 steps in your job. If you do, combine steps, eliminate unnecessary detail, or break the job into two procedures.

- To determine where a step begins or ends, look for a change of activity, change in direction or movement.
- Discuss documented information with the worker to ensure accuracy.

### 3. Identify ALL hazards present with each of the identified steps

- Include those produced by the environment or conditions and those connected with the job procedure.
- Identify how someone completing the activity can get hurt, become ill, or how the equipment used can become damaged.
- Consider hazard types and hazard sources.
  - o Hazard Types:
    - *Chemical* – gases, vapours, liquids, solids, plasma, dust, fume or mist.
    - *Biological* – living organisms, such as bacteria, viruses, mould, parasites and fungi.
    - *Physical* – noise, vibration, electricity, heat and cold, pressure and radiation.
    - *Ergonomic* – poorly designed equipment or work process which place undue strain on the body by repetitive or strenuous activity.
    - *Psychosocial* – risks of crime and violence and harassment in the workplace; production pressures which can influence the pace of work.
    - *Safety* – housekeeping, falls, pinch points, sharp points, sharp edges, moving machinery, dropping items, pressure systems and fire and explosion.



- o Hazard Sources – a useful technique for analyzing and observing a job task is to consider:
  - People – training, coaching, communication, education, hygiene practices.
  - Equipment – protective equipment, repair and maintenance.
  - Materials – correct use, adequate supply, repair and maintenance, storage.
  - Environment – noise, air quality, lighting, physical layout, housekeeping.
  - Process – work design, flow, reporting requirements, policies and procedures.

#### 4. Assess risk

The following formula can be used to determine risk potential:

Risk = Frequency x Probability x Consequences

**Frequency:** There are two ways to look at frequency. One is to estimate how often the job task is done. Another is to determine how often an injury or illness has resulted from performing the job task.

**Probability:** Look for the probability of loss – which may come in the forms of:

- injury
- incident
- illness
- property damage
- loss of production
- loss of money
- etc.

**Consequences:** Ask yourself “what’s the worst thing that can happen?” When determining consequences, assume controls are not in place for the initial assessment.

Controls should be considered later in the process of completing the Job Hazard Analysis. Illustrating the risk reduction as a result of implementing controls is an important component of your risk assessment process.

#### 5. Determine control measures

- Decide what actions or procedures are necessary to eliminate or minimize the hazards identified that could lead to an incident, injury or occupational illness.

- Options include:

**At the Source:** elimination, substitution, redesign, isolation, automation

**Along the Path:** relocation, barriers, absorption, dilution

**At the Worker:** administrative controls, orientation, training and supervision, work procedures, emergency planning, housekeeping, hygiene practices, personal protective equipment

- Begin by trying to:

- 1) Eliminate, substitute or isolate the hazard

If you have tried all options listed above then your next steps are to:

- 2) Engineer the hazard out
- 3) Provide guards, safety devices, etc.
- 4) Provide personal protective equipment
- 5) Provide job instructions and training
- 6) Maintain good housekeeping
- 7) Ensure good ergonomics (positioning the person in relation to the machine or other elements in such a way to improve safety)

- List the recommended safe operating procedures. Begin with an action word. Say exactly what needs to be done to correct the hazard, such as “lift using your leg muscle”. Avoid general statements such as “be careful”.
- Include the required or recommended personal protective equipment necessary and determine a recommended action or procedure to eliminate or lower each hazard identified.
- If serious hazards are present, they should be corrected immediately. The JHA should then be changed to reflect the new conditions.

## 6. Assess the risk again

- Review your JHA for accuracy and completeness. Determine if the recommended actions or procedures have been put in place. Re-evaluate the JHA on a regular basis.

## 7. Develop job procedures

- Job procedures should be developed from the recommended control measures.

## 8. Communicate the job procedures

- Communicate job procedures to all staff affected by a particular job task (supervisor, employee, contractor) and monitor for continued effectiveness of controls.

## Need Help

Your PSHSA consultant can help you to get your risk assessment and job hazard analysis program started. PSHSA has many templates, resources and hands-on training programs to help you on your way. Find your PSHSA consultant at [www.pshsa.ca](http://www.pshsa.ca).

## Other Resource

Canadian Centre for Occupational Health and Safety (CCOHS), Job Safety Analysis, <http://www.ccohs.ca/oshanswers/hsprograms/job-haz.html>