

## Risk Management Guide

### What is health and safety risk management?

Risk Management is a proactive, logical and systematic approach of managing the uncertainty relating to potential risk, rather than responding to injury, incident or damage.

### Why do we perform the risk management process?

The *Work Health and Safety Act 2011 (the Act)* (s17) details how an organisation can manage exposure to risks. Section 17 of the Act states: “A duty imposed on a person to ensure health and safety requires the person—

- (a) “to eliminate risks to health and safety, so far as is reasonably practicable; and
- (b) if it is not reasonably practicable to eliminate risks to health and safety, to minimise those risks so far as is reasonably practicable”.

In minimising risks to health and safety, the University must:

- a) identify hazards;
- b) assess the risks that may result because of hazards;
- c) decide on appropriate control measures to prevent, or minimise the level of, the risks;
- d) implement control measures; and
- e) monitor and review the effectiveness of these measures

### What is the difference between hazard and risk?

**Hazard** means a situation or thing that has the potential to harm a person. These may include; noisy machinery, a moving forklift, chemicals, electricity, working at heights, a repetitive job, bullying and violence at the workplace.

**Risk** is the possibility that harm (death, injury or illness) might occur when exposed to a hazard.

Hazard	Risk
Work at heights	Breaking a limb as a result from a fall from height
Electricity	Electrical shock from faulty electrical lead
Scalpel	Cut/laceration from incorrect use of equipment
Wet floor	Sprained ankle from slipping on a wet floor

### Who must ensure work health and safety?

At Griffith University, the Vice Chancellor maintains ultimate responsibility for ensuring workplace health and safety. Pro Vice Chancellor (PVC), Deputy Vice Chancellors (DVCs), Deans, Administrative Directors, Heads of School, managers and supervisors have further responsibilities for their relevant areas of control, including the requirement to demonstrate management of risk within these areas (refer to [Work Health and Safety Accountabilities](#)).

For example:

- Course convenors must assess the risks associated with teaching activities, student placements and field trips;
- People organising activities and events must assess the risks involved in running those events; and
- Research proposals and grant submissions also require risk assessments.

## When is it necessary to complete a risk assessment?

A risk assessment must be completed when:

- there is uncertainty if a hazard will 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 existing control measures;
- changing work practices, procedures or the work environment;
- purchasing new or used equipment or new substances;
- responding to workplace incidents (even if there is no injury); and
- is mandatory under the Work Health and Safety (WHS) Regulations for high risk activities such as entry into confined spaces, diving work and live electrical work.

Some hazards that have exposure standards, such as noise and airborne contaminants, may require scientific testing or measurement by a competent person to accurately assess the risk and to check that the relevant exposure standard is not being exceeded (for example, by using noise meters to measure noise levels and using gas detectors to analyse oxygen levels in confined spaces).

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.

*Source - [How to manage work health and safety risks – Code of Practice 2011](#)*

## The Risk Management Process

### *Step 1 - Identify the Hazards*

Identifying hazards in the workplace involves finding things and situations that could potentially cause harm to people. Hazards generally arise from the following aspects of work and their interaction:

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

## Examples of common hazards

Hazard	Risk (Potential harm)
Manual tasks	Overexertion or repetitive movement may cause muscular strain.
Gravity	Falling objects, falls, slips and trips of people may result in fractures, bruises, lacerations, dislocations, concussion, permanent injuries or death.
Electricity	Potential ignition source may cause explosion which could result in burns to a person and damage to property. Exposure to live electrical wires can cause shock, burns or death from electrocution.
Machinery and equipment	Being hit by moving vehicles or being caught by moving parts of machinery may result in fractures, bruises, lacerations, dislocations, permanent injuries or death.
Hazardous chemicals	Chemicals (such as acids, hydrocarbons, heavy metals) and dusts (such as asbestos and silica) may cause respiratory illnesses, cancers or dermatitis
Extreme temperatures	Heat may result in burns, heat stroke or fatigue and extreme cold may result in hypothermia or frost bite.
Noise	Exposure to constant loud noise above exposure standard may result in permanent hearing damage.
Radiation	Ultra violet, welding arc flashes, micro waves and lasers may cause burns, cancer or blindness.
Biological	Exposure to certain micro-organisms may result in allergies or disease.
Psychosocial hazards	Effects of work-related stress, bullying, violence and work-related fatigue may result in anxiety.

Source: [How to manage work health and safety risks – Code of Practice 2011](#)

Hazards can be identified through observation, conducting task analyses (how you do things), through consultation with staff/students, audits, past incident data, WorkCover data, testing and monitoring, reviewing available information (e.g. safety data sheets, instruction manuals, industry associations).

### Step 2 – Assess the Risks

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; and
- how urgently the action needs to be taken.

A risk assessment can be undertaken with varying degrees of detail depending on the type of hazards and the information, data and resources that you have available. It can be as simple as a discussion with workers or involve specific risk analysis tools.

If the risk is minor and can be addressed immediately then this is the most appropriate course of action, if there are legislative requirements or supporting documents (codes of practice or Australian Standards) then these must be adhered to when mitigating actions are proposed.

## Consequences

### *Work out how severe the harm could be*

To estimate the severity of harm that could result from each hazard you should consider the following questions:

- What type of harm could occur (e.g. muscular strain, fatigue, burns, laceration)? How severe is the harm? Could the hazard cause death, serious injuries, illness or only minor injuries requiring first aid?
- What factors could influence the severity of harm that occurs? For example, the distance someone might fall or the concentration of a particular substance will determine the level of harm that is possible. The harm may occur immediately something goes wrong (e.g. injury from a fall) or it may take time for it to become apparent (e.g. illness from long-term exposure to a substance).
- How many people are exposed to the hazard and how many could be harmed in and outside your workplace? For example, a mobile crane collapse on a busy construction site has the potential to kill or injure a large number of people.
- Could one failure lead to other failures? For example, could the failure of your electrical supply make any control measures that rely on electricity ineffective?
- Could a small event escalate to a much larger event with more serious consequences? For example, a minor fire can get out of control quickly in the presence of large amounts of combustible materials.

### *Work out how hazards may cause harm*

In most cases, incidents occur as a result of a chain of events and a failure of one or more links in that chain. One way of working out the chain of events is to determine the starting point of where things begin to go wrong and then consider: 'If this happens, what may happen next?'

In thinking about how each hazard may cause harm, you should consider:

- the effectiveness of existing control measures and whether they control all types of harm;
- how work is actually done, rather than relying on written manuals and procedures;
- infrequent or abnormal situations, as well as how things are normally meant to occur.

Consider maintenance and cleaning, as well as breakdowns of equipment and failures of health and safety controls.

## Likelihood

### *Work out the likelihood of harm occurring*

The likelihood that someone will be harmed can be estimated by considering the following:

- How often is the task done? Does this make the harm more or less likely?
- How often are people near the hazard? How close do people get to it? What is their skill level?
- Has it ever happened before, either in your workplace or somewhere else? How often?

The following table contains further questions that can help you estimate likelihood.

Questions to ask in determining likelihood	Explanation and examples
How often are people exposed to the hazard?	<p>A hazard may exist all of the time or it may only exist occasionally. The more often a hazard is present, the greater the likelihood it will result in harm.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"><li>• Meshing gears in an enclosed gearbox can cause crushing only if the gearbox is open during</li></ul>

Questions to ask in determining likelihood	Explanation and examples
	<p>maintenance, and therefore the potential for harm will not occur very often.</p> <ul style="list-style-type: none"> <li>Continuously lifting heavy boxes has the potential to cause harm whenever the work is done.</li> </ul>
<p><b>How long might people be exposed to the hazard?</b></p>	<p>The longer that someone is exposed to a hazard, the greater the likelihood that harm may result.</p> <p><i>For example:</i></p> <p>The longer a person is exposed to noisy work, the more likely it is that they will suffer hearing loss.</p>
<p><b>How effective are current controls in reducing risk?</b></p>	<p>In most cases the risks being assessed will already be subject to some control measures. The likelihood of harm resulting from the risk will depend upon how adequate and effective the current measures are.</p> <p><i>For example:</i></p> <p>Traffic management controls have been implemented in a warehouse to separate moving forklifts from pedestrians by using signs and painted lines on the floor. These controls may need to be upgraded to include physical barriers.</p>
<p><b>Could any changes in your organisation increase the likelihood?</b></p>	<p>The demand for goods or services in many organisations varies throughout the year. Changes in demand may be seasonal, depend on environmental conditions or be affected by market fluctuations that are driven by a range of events. Meeting increased demand may cause unusual loads on people, plant and equipment and systems of work. Failures may be more likely.</p> <p><i>For example:</i></p> <p>Student Services and Academic staff have extra demands placed on them prior to commencement of Semester One and during Orientation Week. The increase in volume of enquiries and assisting a large number of students increases the potential for human error and the likelihood of harm.</p>
<p><b>Are hazards more likely to cause harm because of the working environment?</b></p>	<p>Examples of situations where the risk of injury or illness may become more likely when:</p> <ul style="list-style-type: none"> <li>Environmental conditions change. For example, work performed in high temperatures in a confined space increases the potential for mistakes because workers become fatigued more quickly; wet conditions make walkways, stairs and paths slippery.</li> <li>People are required to work quickly. The rate at which work is done (e.g. number of repetitions) can over-stress a person's body or make it more likely that mistakes will be made.</li> <li>There is insufficient light or poor ventilation.</li> </ul>

<b>Questions to ask in determining likelihood</b>	<b>Explanation and examples</b>
<b>Could the way people act and behave affect the likelihood of a hazard causing harm?</b>	The possibility that people may make mistakes, misuse items, become distracted or panic in particular situations needs to be taken into account. The effects of fatigue or stress may make it more likely that harm will occur.
<b>Do the differences between individuals in the workplace make it more likely for harm to occur?</b>	<p>People with disabilities may be more likely to suffer harm if the workplace or process is not designed for their needs.</p> <p>New or young workers may be more likely to suffer harm because of inexperience.</p> <p>People who do not normally work at the workplace will have less knowledge than employees who normally work there, and may be more likely to suffer harm. These people include contractors, visitors or members of the public.</p>

The Risk Assessment Matrix on the following page can be used in assessing the risk.

## Risk Matrix

### Risk Rating

Consequences/ Likelihood	Insignificant No injuries*	Minor First Aid treatment*	Moderate Medical treatment*	Major Serious or extensive injuries*	Catastrophic Death or large number of serious injuries*
Almost Certain	Low	Medium	High	High	Extreme
Likely	Low	Medium	Medium	High	High
Possible	Low	Low	Medium	Medium	High
Unlikely	Low	Low	Low	Medium	Medium
Rare	Low	Low	Low	Low	Medium

\*These descriptors relate to health and safety risk ratings and are not part of the University Strategic Risk Table.

### Likelihood Rating

The number of times within a specified period in which a risk may occur either as a consequence of business operations or through failure of operating systems, policies or procedures.

Rating	Description	Occurrence	Probability
Almost Certain	Expected to occur in most circumstances	Multiple/12 months	> 80%
Likely	Strong possibility of occurrence	Within 12 months	61% – 80%
Possible	May occur occasionally	Within 5 years	31% – 60%
Unlikely	Not expected to occur but may happen	Within 10 years	5% – 30%
Rare	May only occur in exceptional circumstances	>10 years	< 5%

### Prioritising Risks – Table of Management Action

Risk Score	What should I do?
Extreme	Immediate action required
High	Action plan required, senior management attention needed
Medium	Specific monitoring or procedures required, management responsibility must be specified
Low	Manage through routine procedures. Unlikely to need specific application of resources.

### *Step 3 – Control the Risks*

In most cases there will be more than one control measure available and sometimes there is a need for more than one. In deciding how to control risks you must consult your workers who will be directly affected by this decision. Their experience will help you choose appropriate control measures and their involvement will increase the level of acceptance of any changes that may be needed in the way they do their job. Some problems can be fixed easily and should be done straight away, while others will need more effort and planning to resolve. Of those requiring more effort, you should prioritise areas for action focusing first on those hazards with the highest level of risk.

The most important step in managing risks is eliminating them so far as is reasonably practicable, or if that is not possible, minimising the risks so far as is reasonably practicable. When minimising risks you must implement risk control measures by following the hierarchy of control which must be considered in descending order:

- (a) **Eliminate** the hazard and associated risk
- (b) **Substitute** (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser risk [substitution also includes reducing quantities of chemicals held];
- (c) **Isolate** the hazard from any person exposed to it, physically separate the harm from the people through distance or barriers;
- (d) Implement **Engineering Controls** which are control measures that are physical in nature, including a mechanical device or processes;
- (e) Implement **Administrative Controls** which are work methods or procedures (for example safe operating procedures, training ) that are designed to minimise exposure to a hazard; and finally
- (f) Provide suitable **personal protective equipment (PPE)** such as gloves, goggles, laboratory coats etc.to minimise harm.

It must be noted that administrative controls and PPE should only be used when there are no other practical control measures available (as a last resort), as an interim measure until a more effective way of controlling the risk can be used and to supplement higher level control measures (as a back-up).

### **How to develop and implement control options**

Information about suitable controls can be obtained from codes of practice and guidance material, from manufacturers and suppliers of plant, substances and equipment used or from industry associations. If there are legislative requirements on control methods, these must be used.

#### *Specific Controls*

For each of the hazards identified in the risk assessment, ask yourself: "What can be done to stop or change the hazard occurring?" Working through the hazards in the sequence will give you ideas about possible ways to eliminate or minimise the risk. There may be more than one solution for each.

The control option you choose should be:

- one that provides the highest level of protection for people and is the most reliable – that is, controls located towards the top of the hierarchy;
- available – that is, it can be purchased, made to suit or be put in place; and
- suitable for the circumstance in the workplace – that is, it will work properly given the workplace conditions, work process and the workers.

Where the hazard or risk has the potential to cause death, serious injury or illness, more emphasis should be given to those controls that eliminate or reduce the level of harm, than those that reduce the likelihood of harm occurring. Make sure that your chosen solution does not introduce new hazards.

### *Cost of controls*

Cost (in terms of time and effort as well as money) is just one factor to consider when determining the best control option. The cost of controlling a risk may be taken into account in determining what is reasonably practicable, but cannot be used as a reason for doing nothing.

### *Implementing controls*

Implementing controls usually involves a change in work practices, modified equipment or a change in equipment or substances used. Therefore as behaviour change is required by staff, it is usually best to support these changes with:

1. **Work procedures developed in consultation with staff** - Any changes made or new processes will need to be written into safe work procedures and job instructions so that the improvements are maintained over time. It is important to consult with the people that undertaken these tasks or activities to ensure that the system will be workable. Any new procedure and training undertaken must be documented and records kept.
2. **Training, instruction and information** - No matter how simple the change appears, a briefing or training program must be undertaken so all persons affected understand the new process/procedure or how to work with/operate new equipment. Ensure that these are presented in a format that can be understood by all staff. Training and instruction may also need to be provided to visitors and volunteers that enter the work area.
3. **Supervision** - Supervising all new or altered control methods must occur to ensure the new system of work is being used or followed correctly, monitoring of any changes or additional hazards introduced by the new process must be feed back into the risk management processes. Higher levels of supervision may be required for areas where staff are less experienced or where a new procedure or piece of equipment has been introduced.

To ensuring that controls remain effective, the following actions should be taken:

- Accountability for health and safety – Clear accountabilities for health and safety must be provided along with the authority and resources to maintain effective control measures.
- Maintenance of plant and equipment – Regular inspection and testing must be carried out.
- Up-to-date training and competency – Training should be provided regularly to maintain competencies and to ensure new workers are capable of working safely.
- Up-to-date hazard information – Updates on plant and equipment may be supplied by manufactures and new technology may be available that provides a more effective solution. Changes to operating conditions or the way activities are carried out may also mean that control measures need to be updated.
- Regular review and consultation – Control measures are more effective where there is regular review of work procedures and consultation with your workers

### *Step 4 - Review Controls*

All controls must be monitored and reviewed at regular intervals to ensure effectiveness. To do this, ask three simple questions:

- Have chosen control methods been correctly implemented?
- Are the control measures working to reduce the risk?
- Have the changes led to any new problems? (If so, further risk assessment and investigation of control measures will be required)

These questions can be determined through consultation, measurement and monitoring, e.g. of incidents and near misses.

In addition to regular reviews (or at least every 5 years), there are certain situations where you must review your control measures under the WHS Regulations and, if necessary, revise them.

A review is required:

- when the control measure is not effective in controlling the risk;
- before a change at the workplace that is likely to give rise to a new or different health and safety risk that the control measure may not effectively control;
- if a new hazard or risk is identified;
- if the results of consultation indicate that a review is necessary; and
- if a health and safety representative requests a review.

## **Record Keeping**

Keeping records of the risk management process demonstrates potential compliance with the WHS Act and Regulations. It also helps when undertaking subsequent risk assessments.

Keeping records of the risk management process has the following benefits. It:

- allows you to demonstrate how decisions about controlling risks were made;
- assists in targeting training for key hazards;
- provides a basis for preparing safe work procedures;
- allows you to more easily review risks following any changes to legislation or business activities; and
- demonstrates to others (regulators, investors, customers) that work health and safety risks are being managed.

During an investigation by [Workplace Health and Safety Queensland](#), they may ask for evidence of risk assessments, training documents and consultative practices. There may be some records that are required to be kept under the Regulations e.g. hazardous chemicals,. If this is the case, the relevant records must be kept for the relevant time. Workers also must be aware of records are kept and where they are kept.

## Summary of the Risk Management Process



Source: *How to manage work health and safety risks – Code of Practice 2011*