Identifying and assessing health hazards

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Health hazards can be identified in all parts of the workplace. For example, work tasks or the physical work environment can expose workers to physical injury, ultraviolet (UV) radiation, noise and dust hazards. Similarly, the working environment can expose workers to biological hazards from bacteria/viruses, flora and/or fauna. Exposure to hazardous chemicals or substances is also a commonly identified risk. Finally, how we interact with our workplace and other workers, can pose psychological health hazards in the form of bullying, harassment, or stress. This last category of health hazards is often difficult to identify and can be costly for all involved.

For some hazards, there is a long latency from an exposure to the onset of disease or any obvious symptoms related to it. Bearing this in mind, you should consider all potential long-term health effects of these hazards.

Risk management process

Health risk assessments (HRAs) involve four key phases.

1. Identify health hazards (HH) and their source/s (Step 1).
2. Assess the exposure and health effects of each HH (Step 2).
3. Measure/verify exposures and assess health risks (prioritise and rank) (Step 5):
   - → Use of risk analysis/ranking techniques (bow-tie, WRAC etc.).
4. Review current controls (Step 6):
   - → Identify and assess effectiveness of controls.

STEP 1: Identify health hazards (HH) and their source/s

Information sources that may help identify health hazards include:

- → Legislation and regulatory guidance (e.g. NSW Resources Regulator, other mining jurisdictions, SafeWork NSW, Safe Work Australia, Health and Safety Executive)
- → health (or safety) concerns raised in discussions (or anonymously) with workers
- → concerns raised during consultation with health and safety representatives, safety and health representatives (in coal mines), WHS committee members, deputies, workers, permanent and intermittent contractors
- → WHS committee meeting minutes or reports

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- manufacturer, supplier or importer provided product information (e.g. material safety data sheets)
- records of incidents or industry incident data
- absences due to sickness
- events and exposures that could realistically occur, even if they haven't yet (safety alerts or guidance)
- hygienist consultant reports (workplace assessment or impact study)
- third party audits (Resources Regulator, other PCBUs, WHS committee etc)
- direct observations - walking through the workplace.

STEP 2 – What workers/groups of workers are most at risk? (similar exposure groups-SEGs)

Group the health hazards (identified in STEP 1) into operational areas (and workgroups) or production phases e.g. mining (production), processing and maintenance (and shutdowns). This approach is more effective and efficient than assessing the risks of each individual worker, especially in large workforces. This approach allows you to group workers by levels of exposure they all share in that group. This 'grouping' is referred to as SEGs.

Important features of a SEG:

- group SEGs according to the number of task, work and process areas in your workplace
- ensure SEGs are identified for key tasks, work or process areas, and are distinctly grouped from one another - aim for a balance between too many and too few
- if a worker spends roughly 80% of their time in a given area, or on a particular task, that would indicate being part of that SEG
- bear in mind that even within a SEG, all workers are not equal. Some worker are more susceptible to health risks than others (e.g. pregnant workers, smokers, those with pre-existing conditions and so on).

STEP 3 – What areas and tasks give rise to health hazards?

Having identified distinct worker groups sharing similar exposures (SEGs) it is important to identify what health risks exist in the various work areas or arise from the various tasks or processes carried out.

- Review information about your workplace and work areas in consultation with workers and contractors (particularly those that work doing those tasks or work in those areas), make a list of tasks where an injury or disease, or persistent pain/symptoms have been reported.

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- → The frequency and severity of injury or illness records and how these vary according to the number of workers, hours worked, shift work arrangements, worker positioning (from source of hazard).
- → The number of injuries and or illness recorded that relate to each job and or operational area and how serious these injuries and illnesses are or could be controlled.

You will need to review how the plant and equipment used:

- → Is it fit for purpose?
- → Has it been maintained?
- → Is it designed to reduce risks?
- → Are workers trained to use it without risk to their health?
- → What health risks are emanating from its operation (noise, dust, vibration etc.)?

STEP 4 – Review work areas

Do the work areas or the physical environment generate health risks for workers? Consideration needs to be given to ventilation, lighting, egress and access, temperature and any other aspect likely to give rise to health risks.

STEP 5 – Analyse, assess and rank risk

You need to assess the risks in terms of intensity of exposure, number exposed, length of exposure and frequency of exposure. This can be estimated to give you a starting point for prioritising these risks. This is called a qualitative approach.

A more accurate (and more suitable for health risks with fatal or debilitating consequences) would be to measure exposures of those at risk. This requires specialised equipment, a testing program and a competent person to carry out the testing. Refer to the 'Understanding health monitoring' fact sheet and Safe Work Australia guidance on health monitoring for exposure to hazardous chemicals.

STEP 6 – Identify and assess current controls

Finally, a review of the current controls[1] in place to reduce the health risks needs to be undertaken. Consideration should be given to:

- → What controls are fully implemented?

[1] ICMM _ Good practice guidance on health-risk-assessment_2nd-edition. 2016. P35.

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- → Are they prevention or protection type controls? Where do they sit on the hierarchy of control table?
- → Have they been monitored for their effectiveness?
- → What are considered the parameters for ‘effective’ control?
- → Have ‘critical’ controls for material unwanted events (centre point of a bow tie) been identified? Please refer the ‘Controlling health hazards’ fact sheet.
- → Who ensures they are maintained?

Fact sheet