EDITH COWAN UNIVERSITY

Occupational Health and Safety (OHS) Guideline Template for the Environmental Health Workforce

Author: Garry Dine

Reviewers: Sue Reed, Jacques Oosthuizen & Edmore Masaka

SCHOOL OF MEDICAL & HEALTH SCIENCES

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List of Abbreviations

ACM   Asbestos containing material

EH   Environmental health

EHO   Environmental health officers

GHS   Globally Harmonized System of Classification and Labelling of Chemicals

MSD   Musculoskeletal disorders

OHS   Occupational health and safety

PPE   Personal protective equipment

RPE   Respiratory protective equipment

WHS   Workplace health and safety

1. Background

This proposed occupational health and safety (OHS) guideline template was developed as an outcome of the findings from a research project investigating the OHS issues experienced by the environmental health (EH) profession. The main objective is to provide a template for developing an evidence-based guideline to manage the health and safety of the EH workforce. The developed guideline should be able to assist EH managers and environmental health officers (EHOs) to integrate health and safety into their daily functions and to address barriers to implementation that may lead to unacceptable work practices. The underlying aim is to prevent workplace incidents and improve the OHS culture among EHOs. The guideline will support the enhancement of professional standards and assist in maintaining OHS regulatory compliance. The guideline should cover a wide range of workplace hazards and related risks that affect the EH workforce. The model template covers the following areas:

1. Introduction
2. Aim and objective of the guideline
3. OHS legislative requirements
4. Organisation's OHS policy/strategy
5. Promoting a positive health and safety culture
6. OHS leadership in the EH workforce
7. Occupational health and wellbeing for EHOs
8. Strategy for risk management
9. Common hazards that affect EHOs
10. Investigating, recording and reporting an incident
11. Hierarchy of control
12. Monitoring review and audit

2. Model OHS guideline template

2.1 Introduction

This section should provide brief information about:

- the purpose of the guideline and its potential to influence OHS within the EH workforce positively
- the importance of OHS for EHOs, including the OHS issues affecting EHOs
- the composition of the guideline
- how the guideline should be used.

2.2 Aim and objectives of the guideline

This section must clearly outline the aim and objective(s) of the guideline, which must be in line with the organisation's broader OHS policy and strategy. The end goal should be to protect EHOs from hazards and eliminate work-related incidents. Furthermore, the intention must be centred on strengthening OHS compliance and improving the organisation's health and safety culture.

When framing the objective(s), it is important to consider how the objective(s) will be implemented and evaluated. Hence, the objective(s) should be practical, achievable and measurable. It is suggested that the guideline should have a broad aim followed by a few objectives to meet the aim.

2.3 OHS legislative requirements

Under workplace health and safety laws, the employers and the employees both have a legal responsibility, to ensure, as far as practicable, a high standard of safety and health at their workplace. The final guideline must outline OHS legislative requirements of the jurisdiction where the EH workforce is located. Note that each jurisdiction has a workplace health and safety (WHS) regulator who is responsible for enforcing OHS compliance, inspects workplaces for compliance and provides advice if needed. Relevant codes of practices for the EH workforce must be included in the guideline.

Furthermore, under this section, the OHS legal duties of both employer and employee (EHOs) should be clearly outlined together, along with the relevant penalties applicable to both under the OHS law.

2.4 Organisation OHS policy/strategy

The EH OHS guideline should serve as a supplementary document to inform the broader organisational OHS strategies and agendas. In this section, the organisation's OHS policy and strategy must be outlined together with expected outcomes as well as any different levels of OHS responsibilities and lines of communication for OHS issues for EHOs in the organisation. Furthermore, this section should clearly state the organisation's intention and that of the EH manager as regards providing a safe, healthy work environment for EHOs. Likewise, this section should remind EHOs that they also have a responsibility to contribute towards making the work environment safe and healthy.

2.5 Promoting a health and safety culture

This section must outline a clear strategy to improve the safety culture within the EH workforce. The health and safety culture is mainly affected by workers' commitment, which, in turn, is heavily influenced by management commitment (Tappura et al., 2022). Improving safety communication, getting managers onboard and holding training programs for employees regarding safety may improve the organisation's health and safety culture (Tappura et al., 2022). Honest conversation on this topic with the EH workforce is necessary in order to develop a practical and effective strategy. The strategy should focus on mechanisms to gather health- and safety-related information, and to measure and monitor health and safety performance and the effectiveness of team-building activities to bring EHOs together to ensure that they learn how to work safely and efficiently. It is important to engage EHOs in the process from the start.

2.6 OHS leadership in the EH workforce

Managers of EH services have a key role in the management of OHS issues in their workforce. Although most OHS legal responsibilities and liabilities are vested in the executive leadership of an organisation, operational managers also have a key role to play in the successful implementation of OHS policies and strategies. An EH manager provides a link between organisational health and safety strategies and EHO work practices. Therefore, it is imperative

that EH managers are adequately trained in OHS matters in order to drive the implementation of health and safety strategies. EH managers must be conversant with the organisation's OHS policies, procedures and legal responsibilities. Further, they must be capable of conducting risk assessments, implementing effective control and performing thorough incident investigations. Relevant training for EH managers may be provided on aspects such as implementing emergency procedures, providing first aid, registering workplace incidents, managing psychosocial hazards, debriefing after incidents and managing conflicts.

2.7 Occupational health and wellbeing

This section of the guideline should focus on the wellbeing of EHOs from both occupational and nonoccupational perspectives. This section needs to address issues such as employee wellness programs, working hours, flexible work arrangements and EHOs' work–life balance. Significantly, life satisfaction and job satisfaction are linked (Weziak-Bialowolska et al., 2020). Hence, it is important that employers develop workplace programs promoting working conditions that enable EHOs to flourish in life and at work. It is suggested that in this section, strategies to achieve and maintain healthy work–life balance be addressed in consultation with EHOs.

This section also provides the organisation with an opportunity to create a workplace environment of support for EHOs to encourage healthy lifestyle choices. OHS has traditionally focused on employee exposure to workplace hazards; consequently, workplace wellbeing programs add another element to workplace health by addressing nonoccupational stressors. In addition, employees' job satisfaction and healthy behaviours have been linked with wellbeing programs for them (Jones et al., 2019; Ott-Holland et al., 2019). Thus, management needs to consult the EH workforce to develop customised wellbeing programs that are effective for EHOs.

2.8 Strategy for risk management

This section of the guideline needs to address the assessment, management and communication of risks. Having a strong approach to risk management is important to support safe work practices and to reduce workplace-related incidents (Aljabi, 2020; Jule, 2020). This section should provide a systematic approach to identify, assess, manage and communicate risks within the EH workforce. Figure A presents a model that can be used to develop a risk management strategy for the EH workforce.
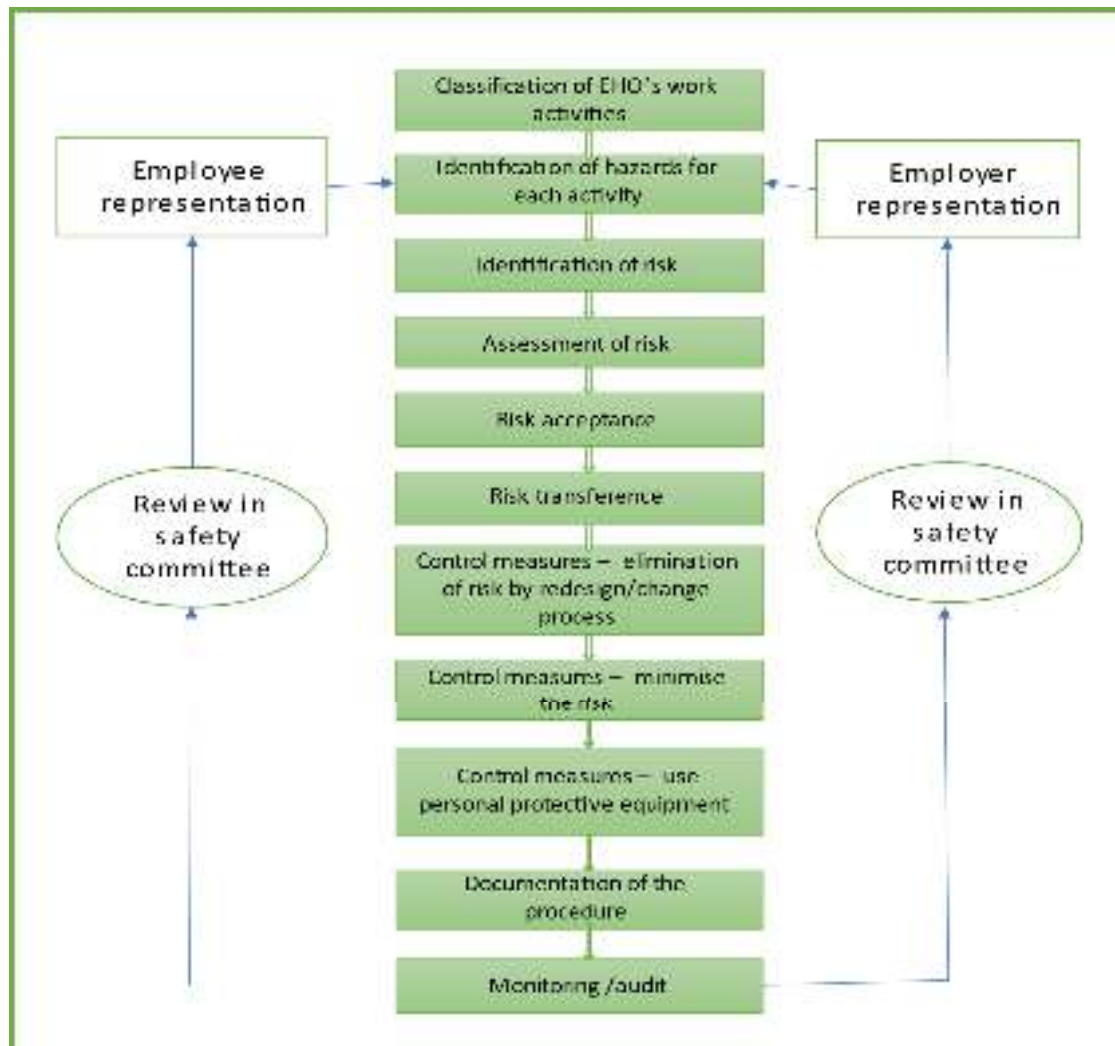
Figure A: Risk management strategy for EH workforce (adapted from Rout & Sikdar, 2017)

2.8.1 Risk assessment

Table 1 presents the key considerations that can be applied in the risk assessment of EHOs' tasks. There are key considerations for each step of the risk assessment process. While not all the factors will affect risk in the same way, it is important to carefully consider each one. When conducting a risk assessment, it is important to focus on not only the gravity of the risk but also the likelihood and consequence of an incident occurring. Risk assessment must be conducted for all tasks, and both EH managers and EHOs should undertake risk assessment training.

Table 1: Key considerations in risk assessment (adapted from World Health Organization, 2020)

Steps	Key considerations
Hazard identification (information gathering)	What types of hazards may be present, and what are the risks?
	What is the type of EH work and procedures to be performed?
	What is the type of equipment that will be used?
	What are the human factors that must be considered? (e.g., Are the EHOs adequately trained to perform the work?)
	What other factors are likely to affect safety (e.g., individual perception, culture, and legal requirements)?
Risk evaluation	How could an exposure/incident occur?
	What is the likelihood of an exposure/incident?
	On the basis of the information collected, which exposure/incident is most likely to occur?
	What are the consequences of an exposure/incident?
	Which information/factor influences the consequences the most?
	What is the overall initial risk of the activities?
	What are the acceptable risks?
	What are the unacceptable risks?
	Can unacceptable risks be controlled, or should work not proceed at all?
Develop a risk control strategy	What resources are available for risk control measures?
	What risk control strategies can be applied by using the resources available?
	Are the resources sufficient to obtain and maintain those risk control strategies?
	Are the proposed strategies effective, sustainable and achievable in the local context?
Select and implement risk control measures	Are there any national regulations requiring prescribed risk control measures?
	What risk control measures are locally available and sustainable?
	Are the available risk control measures adequately efficient, or should multiple risk control measures be used in combination to enhance efficacy?
	Do the selected risk control measures align with the risk control strategy?
	What is the residual risk after the risk control measures have been applied, and is it now acceptable?
	Are additional resources required and available for the implementation of risk control measures?
	Are the selected risk control measures compliant with national regulations?
	Has approval to conduct the work been granted?
	Have the risk control strategies been communicated to relevant EHOs?
	Have necessary items been included in the budget and purchased?
	Are operational and maintenance procedures in place?
	Have EHOs been appropriately trained?
Review risks and risk control measures	Have there been any changes in activities, hazards/risks, EHO, equipment or facilities?
	Is there any new knowledge available of hazards/risks and/or the processes being used?
	Are there any lessons learned from incident reports and investigations that may indicate improvements to be made?
	Has a periodic review cycle been established?

2.8.2 Risk communication

There are three main objectives for risk communication in the workplace: to provide information that workers can use to make informed decisions about how to protect themselves from harm, to reduce the level of fear and anxiety about potential workplace hazards, and to build trust between employees and employer (SafetyCulture, 2022). Communication has an important role in risk management in providing reliable, accurate information about health risks, and it enhances the knowledge and awareness of risks, which, in turn, lead to behaviour change and health protection (Emal et al., 2022).

This section of the guideline should provide a clear, effective process of communicating relevant workplace risks to the EH workforce. Figure B illustrates a process that should be adapted to facilitate risk communication. It is essential to involve the EH manager or the principal EHO throughout the risk communication process. Risk communication takes place at different organisational levels. It is important that the people responsible for risk communication are clearly identified in the guideline and that they have in-depth understanding of the functions of EHOs.
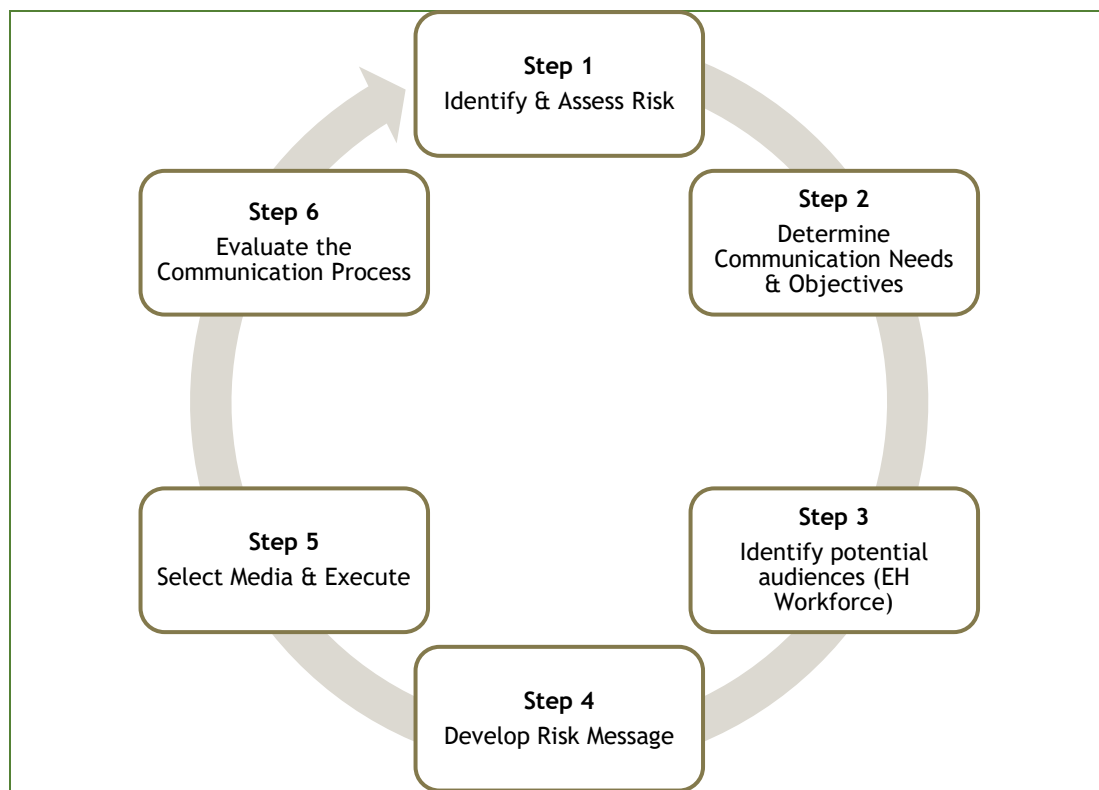

Figure B: Proposed risk communication process for the EH workforce (adapted from Kim, 2017)

2.9 Common hazards that affect EHOs

In this section, workplace hazards affecting EHOs have to be identified and listed. These hazards can be classified into four categories: biological, physical, chemical and psychological (Table 2). The hazards outlined in Table 2 were identified in this research project, and it is recommended that other potential hazards be considered in relation to the specific EH workforce functions when developing the guideline.

Table 2: Common hazards/risks affecting the EH workforce, as identified in the research project

	Type of hazard or risk factor	Description and examples	Control
Biological hazard	Exposure to disease/ infectious agents	EHOs may come into contact with viruses (e.g., Hepatitis B, COVID-19), and bacteria (e.g., Legionnaires' disease, TB, Q fever) during the course of their work. Exposure to these infectious agents may be from direct human contact or contaminated articles, or through the airborne route.	• Wear personal protective equipment (PPE) where appropriate. • Ensure EHOs are vaccinated.
	Animal/insect bite	EHOs work in outside environments where they may be subjected to insect bites (e.g., from spiders, mites, ticks and mosquitos). These insects can be poisonous or carry infectious organisms that can cause diseases in humans. EHOs may be subject to attack by fierce animals (e.g., dogs) when inspecting private property.	• Wear appropriate PPE. • Inform property owners before entering their property and request that they restrain their dogs.
	Infectious sharps	In some local authorities, EHOs are involved in needle exchange programs and the removal of discarded needle/sharps in public place. There is the potential for accidental sharps/needlestick injuries.	• Safe handling of sharps and used needles. • Wear appropriate PPE.
	Fungal and mould exposure	EHOs maybe be exposed to these hazards in contaminated buildings and outdoors in the field. These agents may cause allergies and respiratory disorders.	Wear PPE to protect against exposure and prevent the spread of mould to other areas (e.g., office, home).
	Exposure to human excreta	EHOs inspect local sewage systems for compliance and for issuing permits to use, which may accidentally expose them to human excreta.	Wear appropriate PPE.
	Biological hazard from animal hoarding	EHOs often respond to complaints of animal hoarding in the home. Hoarded animals often suffer from untreated diseases and other health conditions. EHOs may be exposed to animal faeces, saliva or insects that transfer disease from animals to humans.	Wear appropriate PPE.

Physical hazard	Manual and mechanical handling	EHOs may have to physically lift and manipulate materials or use specialised equipment (e.g., trolleys) to perform a task, which may cause injuries.	Provide appropriate training.
	Equipment hazard	EHOs may be exposed to non-mechanical hazards associated with equipment, including harmful emissions, contained fluids or gas under pressure, chemicals, electricity and noise	Provide appropriate training.
	Slips, trips and falls of individuals	EHOs who operate on uneven ground in open fields may collide with an obstruction or come into contact with a highly tactile surface. They also inspect kitchens and other manufacturing premises where there is little friction or traction between footwear and walking surfaces.	Wear appropriate footwear.
	Exposure to sunlight	A significant portion of EHOs' work occurs in outdoor environments. Outdoor workers receive up to 10 times more sun exposure than indoor workers. Long-term health effects from ultraviolet radiation exposure may include cataracts and skin cancer including melanoma, basal cell carcinoma and squamous cell carcinoma.	Wear appropriate PPE.
	Poor workstation design and screen equipment display	Despite spending significant time in the field, EHOs still have a substantial administration role, which involves siting for long hours in the office. Poorly designed workstations and repetitive tasks may lead to musculoskeletal disorders that cause aches, pain, swelling and poor performance.	Provide appropriate training.
Chemical hazard	Exposure asbestos	Exposure to asbestos increases the risk of developing cancers of the lung, ovary and larynx as well as mesothelioma (cancer of the lining of the lung). As part of their environmental health regulatory function, EHOs' are entrusted with the task of overseeing the removal and disposal of asbestos materials.	• Wear appropriate PPE. • Provide appropriate training to recognise asbestos.
	Chemical residue from clandestine laboratory	Clandestine drug laboratories that manufacture several controlled substances (e.g., methamphetamine, amphetamine, methadone and phencyclidine) pose a significant threat to EHOs who inspect and investigate these premises.	Wear appropriate PPE.
	Chemical hazard from abandoned building	EHOs inspect and investigate risks posed to public safety by abandoned buildings, which may still have dangerous chemicals inside. Touching or breathing these chemicals can result in serious health consequences.	Wear appropriate PPE.
Psychological hazard	High work demand	EHOs' may face sustained high levels of excessive or unreasonable physical, mental and emotional work demands that chronically exceed their capacity. As first responders, EHOs are exposed to emotionally distressing situations, a fast work pace and time pressure	• Address understaffing issue. • Review work arrangement/work distribution.

	Inadequate support	EHOs may receive inadequate emotional and practical support from supervisors and/or work colleagues. They may also have inadequate training and/or resources to perform work functions. Further, they may lack support in the form of constructive feedback, problem solving and provision of information and resources.	• Engage in team-building exercise. • Address resources and training issues. • Provide appropriate training to supervisors.
	Poor work–life balance	Increased responsibilities for EHOs without adequate resources may result in unhealthy work patterns and unsustainable work culture within the EH workforce. This often involves long working hours and weekend work.	• Set limits on work time and set aside time for nonwork-related activities. • Negotiate flexible work arrangements.
	Low recognition and reward	EHOs may receive no/low recognition and constructive feedback for their work efforts, skills and commitment and may lack opportunities for career advancement. Their skills and experience may also be underused. There may be imbalance between EHOs' efforts and the associated recognition and reward, and an unfair allocation of resources.	• Address issues of unfairness, bias and inequality faced by EH workforce. • Introduce mechanism to reward and recognise the EHOs' work.
	Remote or isolated work	The field-based nature of EHOs' role often puts them at work locations where their access to resources, communications and support from work colleagues is difficult or delayed. These locations also include those where accessing emergency services is difficult.	• Develop procedure for remote work situation. • Work in pairs where possible. • Improve remote work communication system. • Maintain regular contact with EHOs working in remote settings.
	Adverse environmental conditions	EHOs are exposed to unpleasant and hazardous physical and psychological work environments that can cause stress response. For instance, EHOs work in environments with extreme temperatures, nuisance, excessive noise and adverse natural events.	Conduct ongoing risk assessment of workplace environment.
	Witnessing, investigating or being exposed to traumatic events or material	EHOs are often exposed to traumatic events when conducting investigations or site visits, including situations of animal hoarding, serious injuries, abuse and neglect, or serious incidents.	• Conduct debriefing process for traumatic events. • Train supervisors to recognise and deal with traumatised EHOs.
	Fatigue and Burnout	Fatigue is a state of mental or physical exhaustion that can reduce the ability of EHOs to work safely and effectively. It may result from excessive work demands. Burnout is a result of psychological and physical responses to chronic work-related stress	• Manage EHOs' workload and work arrangements. • Address understaffing issue.
	Lack of job clarity	EHOs may lack job clarity owing to incompatible expectations or demands placed on them by workplace stakeholders (e.g., Council's elected members, business communities, politicians) and changing management expectations about the EHO role.	Management should clarify the EHO role.

Other hazards	Poor OHS leadership practices and workplace culture	OHS leadership within the EH workforce is anecdotally poor or non-existent. Poor leadership behaviour affects OHS compliance among EHOs and leads to poor safety culture.	Provide appropriate training to EH managers.
	Vehicle incidents	EHOs' work involves operating or driving vehicles onsite or offsite, and hence, driving time and distances must be considered.	• Establish a safe driving program for EHOs. • -Investigate incidents. • Ensure maintenance of vehicles.
	Workplace violence, and inappropriate and unreasonable behaviours	EHOs may be exposed to unreasonable and offensive behaviours from clients or members of the public, that is, with intent to create fear or intimidate (e.g., violence or aggression, conflict)	Provide appropriate training.
	Exposure to risky situation	This includes exposure to uncontrollable risks. As first responders, EHOs are required to attend to emergency situations involving unknown or uncontrolled risks (e.g., response to asbestos fires, sewage spills, chemical spills).	Provide appropriate training.

2.9.1 Biological hazards

EHOs are exposed to biological agents as part of their normal work. The risk of exposure to potential infectious agents must be controlled to prevent EHOs from contracting and transmitting infections. Given the dynamic and versatile work environment EHOs have to operate in, enforcing strict/total containment measures for infectious agents may not be practical. To ensure EHOs in these scenarios are protected, comprehensive risk assessments of work activities must be undertaken for determining the level of control required to prevent exposure to infectious agents. To assist EH managers to correctly identify the potential risks posed by various types of biological hazards, it is suggested that the Australian Standard AS/NZS 2243.3:2022 that classifies biological agents be used as a guide in implementing effective measures based on the degree of risk. Table 3 is a summary of the risk group classification of biological hazards.

Table 3: Classification of biological agents (adapted from (Standards Australia, 2022))

Risk group	Risk description
Risk Group 1 (low individual and community risk)	A microorganism that is unlikely to cause human or animal disease.
Risk Group 2 (moderate individual risk, limited community risk)	A microorganism that is unlikely to be a significant risk to laboratory workers, the community, livestock or the environment; laboratory exposures may cause infection, but effective treatment

(Risk Group 2, yellow)	and preventive measures are available and the risk of spread is limited.
Risk Group 3 (high individual risk, limited to moderate community risk)	A microorganism that usually causes serious human or animal disease and may present a significant risk to laboratory workers. It could present a limited to moderate risk if spread in the community or the environment, but usually, effective preventive measures or treatments are available.
Risk Group 4 (high individual and community risk)	A microorganism that usually produces life-threatening human or animal diseases, represents a significant risk to laboratory workers and is readily transmissible from one individual to another. Effective treatment and preventive measures are usually unavailable.

Most biological agents that are relevant to EHOs will normally fall with Risk Groups 1 to 3. Risk Group 4 organisms are uncommon, but EHOs should remain vigilant especially with the recent trend of re-emerging infectious diseases. Examples of biological agents and the related risk group are presented in Table 4.

Table 4: Examples of biological agents related to specific biological risk groups for which different biological containment measures will be applied (adapted (Standards Australia, 2022)

Risk group	Examples: bacteria	Examples: fungi	Examples: parasites	Examples: viruses
1	Organisms that have not been classified as Risk Group 2–4 and those which are considered of low risk to either workers or the community			
2	*Actinetobactor* spp., *Chlamydia* spp., *Escherichia coli*, *Haemophilus* supp.*, Legionella* spp., *Listeria* spp., *Mycobacterium* spp., *Pasteurella* spp., *Pseudomonas* spp., *Salmonella* enterica serovars, *Staphylococcus* supp., *Streptobacillus moniliformis*,	*Aspergillus fumigates*, *Candida albicans*, *Cryptococcus gatti*, *Microsporum* spp., *Scedosporium* spp., *Trichophyton* spp.	*Anisakis* supp., *Ascaris lumbricoides*, *Cryptosporidium* spp., *Echinococcus* spp., *Giardia* supp., Hookworm supp. *Toxocara* supp.,	*Adenovirus, Feline calicivirus, Hepatitis delta virus*, Human *parvovirus, Influenza, Japanese encephalitis virus*, Measles *morbillivirus Murray Valley encephalitis, Norwalk virus, Rabbit haemorrhagic disease virus, Rhinovirus A, B and C, Ross River virus, Rubella virus*, SARS coronavirus, *Zika virus*
3	*Bacillus anthracis, Bartonella bacilliformis, Burkholderia mallei, Brucella* spp., *Chlamydia psittaci, Coxiella burnetii, Francisella tularensis*	*Blastomyces dermatitidis, Coccidioides immitis, Coccidioides posadasii, Histoplasma* spp., *Paracoccidioides*		*Avian Influenza virus, Tick-borne viruses, Influenza virus, West Nile virus, Yellow fever virus,*

(type A), *Mycobacterium tuberculosis* complex, *Rickettsia* spp., *Yersinia pestis*	*brasiliensis, Penicillium marneffei*	
4		*Crimean-Congo haemorrhagic Orthonairovirus, Ebola virus, Hendra virus, Lassa virus, Tick-borne encephalitis virus*

2.9.1.1 Immunisation program

To add to the line of protection against infectious agents, it is recommended that EHOs participate in an immunisation program. Further, a register should be maintained to ensure accurate and updated information of their immunisation status. The register must be kept confidential and only made accessible to authorised persons and the EHO it relates to. An example of an immunisation record is provided in Table 5.

Table 5: Example of immunisation record template

Vaccinations	Schedule	Date received	Evidence produced
Tuberculosis			
Tetanus			
Hepatitis A			
Hepatitis B			
Covid-19			
Influenza			
Measles, mumps, rubella (MMR)			

2.9.2 Chemical hazards

The processes for handling, storage, transport and disposal of all chemical substances must be safe and without risk to EHOs or others. Risks associated with the chemical substances they use must be assessed and reduced to the lowest level practicable. The assessment should clearly show that all activities involving chemical substances have sufficient and appropriate control measures in place. The EH manager should maintain an approved list of chemical substances used by EHOs and obtain relevant material safety data sheet (MSDS) from suppliers.

2.9.2.1 Classification of chemical hazards

It is suggested that the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) be used (Table 6). The GHS has been developed to classify and communicate chemical hazards by using internationally consistent terms and information on chemical labels and safety data sheets. The system provides criteria for classifying physical hazards (e.g., flammable liquids), health hazards (e.g., carcinogens) and environmental hazards (e.g., aquatic toxicity) (Safe Work Australia, 2018a). Using the GHS will assist in communicating about potential chemical hazards to the EH workforce.

Table 6: Chemical hazard classification—GHS (Source: Safe Work Australia, 2018a)

Major chemical hazard groups	Criteria
Health hazard	- Germ cell mutagenicity - Carcinogenicity - Reproductive toxicity - Specific target organ toxicity – single exposure - Specific target organ toxicity – repeated exposure - Aspiration hazard - Acute toxicity - Skin corrosion/irritation - Serious eye damage/eye irritation - Respiratory or skin sensitisation
Physical hazard	- Oxidising solids - Organic peroxides - Corrosive to metals - Self-reactive substances and mixtures - Pyrophoric liquids - Pyrophoric solids - Oxidising gases - Gases under pressure - Flammable liquids - Explosives - Flammable gases - Aerosols - Flammable solids - Self-heating substances and mixtures - Substances and mixtures which, in contact with water, emit flammable gases - Oxidising liquids
Environmental hazard	- Hazardous to the aquatic environment (acute and chronic) - Hazardous to the ozone layer

2.9.2.2 Asbestos exposure

EHOs maybe exposed to asbestos or asbestos containing material (ACM) at various points of their work. In their role as frontline public health professionals during natural disasters, such as bush fires and earthquakes, they may come into contact with damaged buildings containing asbestos or ACM. They may also get exposed to asbestos during the management and remediation of sites contaminated with asbestos. In addition, EHOs play an important role in regulating the maintenance, removal and disposal of residential asbestos. Table 7 outlines potential strategies the EHO workforce can implement to reduce their risk of asbestos exposure.

Table 7: Draft strategy to manage risks associated with EH workforce's exposure to asbestos (adapted from Work Health and Safety Commission, 2022)

Control steps	Description
Identify hazards	To identify asbestos and asbestos containing material (ACM) at the workplace, EHOs should: • be trained and become competent in identifying asbestos and ACM • have the knowledge and experience to identify suspected asbestos • be familiar with building and construction practices to determine where asbestos is likely to be present • assume that asbestos is present if they have grounds to reasonably believe the material is asbestos or ACM.
Assess risks	Once asbestos is identified and confirmed, EHOs should: • determine the risk and control measures needed • determine whether the material is friable or non-friable asbestos, and assess condition and control measures.
Eliminate risks	EHOs should assess the condition of asbestos, and if the asbestos or ACM: • is in good condition and undisturbed, they can organise for the site to be registered and managed • has deteriorated or has been disturbed, or if friable asbestos is present, they should organise for appropriate removal and disposal.
Control risks	If it is not reasonably practicable to eliminate the risk, EHOs should implement the most effective control measures that are reasonably practicable in the circumstances in accordance with the hierarchy of control measures. All identified and assumed asbestos should be clearly indicated by using labels and warning signs where appropriate to indicate the presence of asbestos. EHOs should use all protective equipment provided when dealing with asbestos and follow recommended workplace practices and safety procedures. • The selection of PPE should be based on a risk assessment. • The ease of decontamination should be one of the factors considered when choosing PPE. • Non-disposed PPE must be decontaminated and kept in a sealed container until reused for the purposes of asbestos-related work.

Review control	EH manager and EHOs to review control measures to ensure they are working as planned.

Asbestos sampling for legal or remediation purposes is an important task that places EHOs in direct contact with asbestos or ACM. Often, EHOs tend to focus more on legal processes and requirements regarding collecting asbestos samples, rather than on the safety aspect. A safe sampling process for asbestos or ACM is detailed in Table 8.

Table 8: Draft of safe asbestos sampling procedure (adapted from Work Health and Safety Commission, 2022)

Preparation	- Ensure no one else is in the vicinity when performing sampling. - Shut down all heating or cooling systems to minimise the spread of released fibres. - Turn off fans when inside. If outside, then collect samples on a non-windy day. - Do not disturb the material any more than is needed to take a small sample. - Collect the equipment you will need for sampling, including pliers, resealable plastic bags, disposable coveralls, waterproof sealant, plastic drop sheet, water spray bottle, P2 respirator and rubber gloves.
Sample collection	- Wear disposable gloves, respiratory protective equipment (RPE) and a pair of disposable coveralls. - Lay down a plastic drop sheet to catch any loose material that may fall off while sampling. - Wet the material using a fine mist of water containing a few drops of detergent before taking the sample, which will reduce the release of asbestos fibres. - Carefully cut a thumbnail piece from the entire depth of the material using the pliers. - For fibre cement sheeting, take the sample from a corner edge or along an existing hole or crack. - Place the small piece into the resealable plastic bag. - Double bag the sample and add its date and location and an asbestos caution warning. - Tightly seal the container after placing the sample in it. - Carefully dispose of the plastic sheet. - Use a damp paper towel or rag to clean up any material on the outside of the container or around the area sampled. - Dispose of asbestos materials according to state/territory and local procedures. - Patch the sampled area with the smallest possible piece of duct tape to prevent fibre release. - end the sample to a NATA-accredited laboratory or one that is either approved or operated by the relevant regulator.
Cleaning up	- Seal the edges of the part from where the sample was taken with waterproof sealant. - Carefully wrap up the plastic drop sheet with tape and then put this into another plastic trash bag. - Wipe down the tools and equipment with a dampened rag. - Place disposable gloves and coveralls into a trash bag, along with the damp rag and drop sheet. - Seal the plastic bag. - Wash hands. - Keep RPE on until clean-up is completed. - Follow a decontamination procedure (personal washing) upon completion of the task.

2.9.3 Psychological hazards

To assist EH managers in managing psychological hazards in the workplace, it is important that they understand the relationship between psychosocial hazards and injury outcomes. Psychosocial hazards are anything at work that may cause psychological or physical harm. It relates to the design or management of work and work environments and workplace interactions and behaviours that may cause psychosocial harm. Figure C shows the relationship between psychological hazards and injury outcomes.
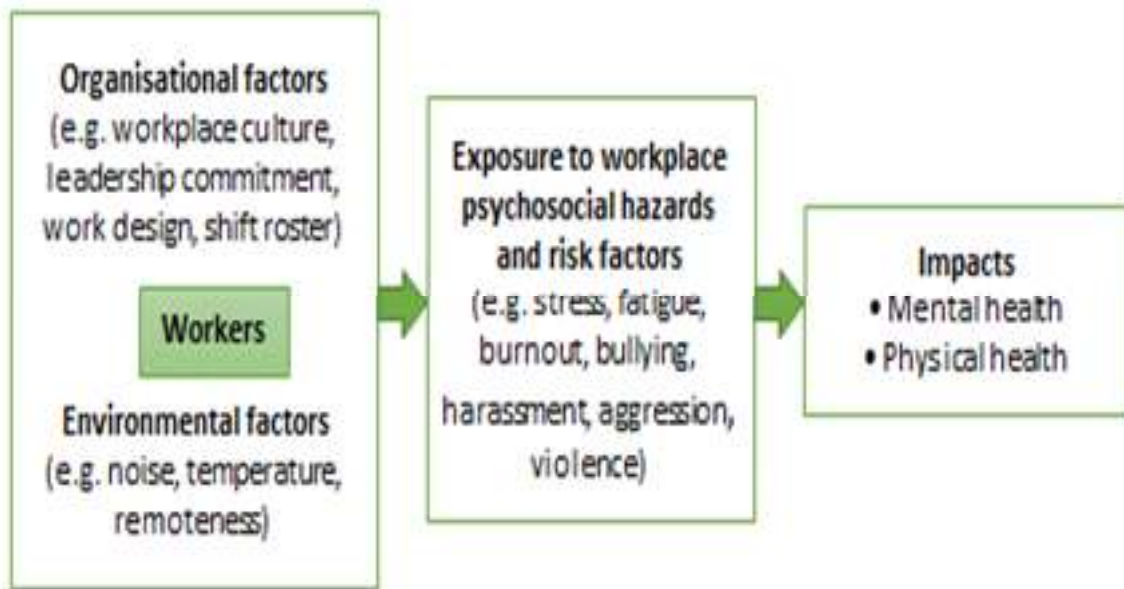
Figure C: Relationship between psychological hazards and injury outcomes (Adapted from: (Work Health and Safety Commission, 2022) Psychosocial hazards can create harm through a worker's experience of a frequent, prolonged and/or severe stress response—such stress is defined as a person's psychological response (e.g., anxiety and tension) and physical response (e.g., releases of stress hormones, and a cardiovascular response) to work demands or threats (Australian Medical Association Limited, 2022). EH managers can follow four risk management steps to address psychological hazards: identify psychological hazards, assess risks, control the risks and review controls.

2.9.3.1 Workplace violence

Work-related violence and aggression are a major concern for the EH workforce. EHOs deal directly with people that access environmental health services, such as food business owners,

developers, builders and private residents, and are therefore likely to experience verbal and physical abuse. A conflict situation is often not realised until it escalates into serious physical violence. The EH manager and the executive leadership must be committed to raising awareness of workplace violence and provide support to reduce the occurrence of incidents relating to conflict. An antagonistic situation may quickly escalate from a simple misunderstanding to physical aggression. The EH manager must identify potential conflict situations and establish a mechanism to address these in order to reduce the incidence of work-related violence and aggression. It is important that the EH manager search for causes and effects of conflict: caused by EHOs and caused by customers/public. Some of the underlying causes of conflict are presented in Table 9.

Table 9: Potential underlying causes and effects of work-related conflict within the EH workforce (adapted from Bonehill, 2010)

Caused by EHOs	Caused by customers/public	Caused by disagreements within the EHOs' team
• **EHO not adequately trained in customer service delivery** • **EHO unable to interpret customer needs and wants** • **EHO not communicating waiting time and delay to customers** • **Unable to deal with complaints effectively and ethically** • **Finds it difficult to balance regulatory requirements and customers' needs** • **Poor communication (e.g., about change in service, procedure, legislation, or application/permit fees)**	• Preconceived ideas and expectations • Unreasonable expectations • Overly dependent on environmental health services • Reluctance to take advice • Unwilling to compromise • Cultural differences and misunderstandings • Lack of knowledge and understanding of legislative procedures • Fear of losing control • Out of comfort zone • Drug or alcohol abuse • Personal problems • Personality traits; for example, arrogant, selfish, rude, prejudiced and temperamental	• Telling someone else about another individual • Everyone having their own ideas • Viewing things differently • Having diverse expectations • Reacting to situations in a variety of ways • Differences due to factors such as age, gender, background and experience • Different priorities • Inappropriate management style • Differences in experience, qualification and capability

The EH manager must adopt a risk-based approach to identify potential conflict situations and determine preventive strategies. The risk of work-related violence among the EH workforce can be reduced through an effective policy, risk assessment and effective training. It is the responsibility of the EH manager to develop a conflict risk assessment tool and an action plan

in collaboration with EHOs. Tailored conflict management training should be offered to all EHOs, and refresher training programs must be scheduled every 24 months.

2.9.4 Physical hazards

To facilitate the reporting and registration of physical hazards, it is suggested that a basic classification system be used (see Table 10). EH managers can further subdivide these hazards into different categories, if necessary, depending on the degree of danger and the frequency of occurrence. The EH manager must identify potential physical hazards and develop an appropriate assessment tool to manage the risk. This guideline document focuses on the common physical hazards that affect EHOs.

Table 10: Classification of physical hazards

Types of physical hazards
• **Body stressing or musculoskeletal disorders, which often develop from performing hazardous manual tasks**
• **Gravitational, which includes slips, trips and falls**
• **Confined spaces**
• **Electricity**
• **Heat**
• **Heights**
• **Noise**
• **Radiation**
• **Vibration**

2.9.4.1 Body stressing or musculoskeletal disorders

Work-related musculoskeletal disorders (MSDs) are caused by multiple interactions between several causal factors. These include physical factors (e.g., repetitive tasks, heavy lifting, adverse posture), psychosocial factors (e.g., low work control/demand, low supervisor support, lack of recognition) and organisation factors (e.g., high workload, long working hours) (Macdonald & Oakman, 2015). Figure D is a composite model of the complex interactions of several causal factors that eventually lead to MSDs. It is important that EHOs and EH managers understand the causes of MSDs and establish an assessment tool to reduce their occurrence.
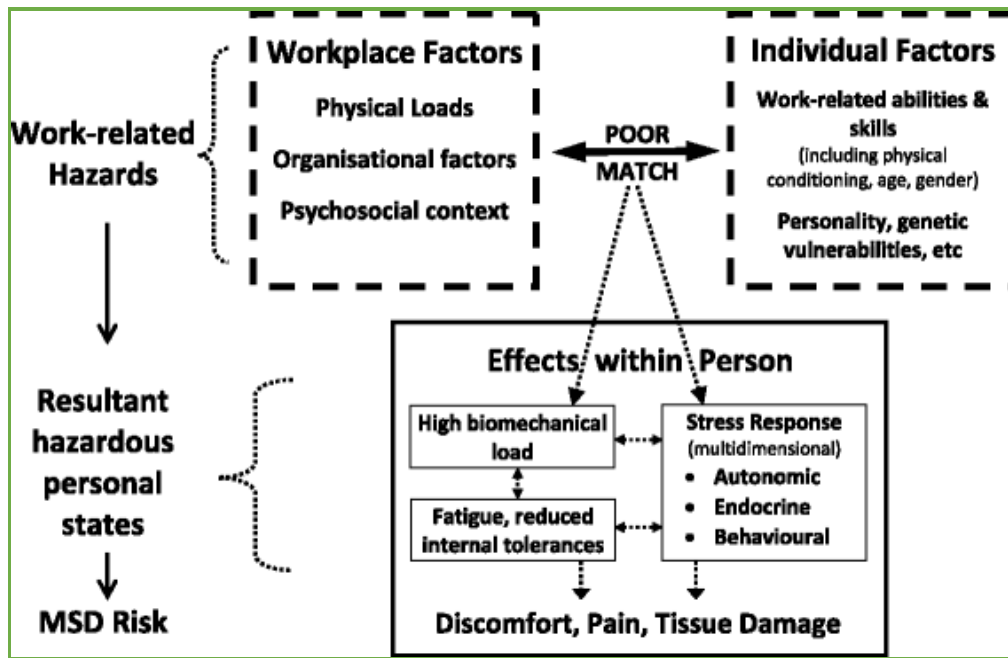
Figure D: A model of causation for musculoskeletal disorder risk (from Macdonald & Oakman, 2015)

2.9.4.2 Display screen equipment

EHOs need to perform a significant portion of their work on a computer. An ergonomic workstation is imperative to reduce their fatigue, injuries and stress. A thorough risk assessment of the workstation, including the software in use, and trip and electrical hazards, must be conducted. Furthermore, the assessment should include the sitting and typing postures and the use of sit and stand desks, monitor arms and laptop stands. In addition, the EH manager should implement a work program to ensure that EHOs take adequate breaks. An example of an appropriate ergonomic workstation setup is provided in Figure E.
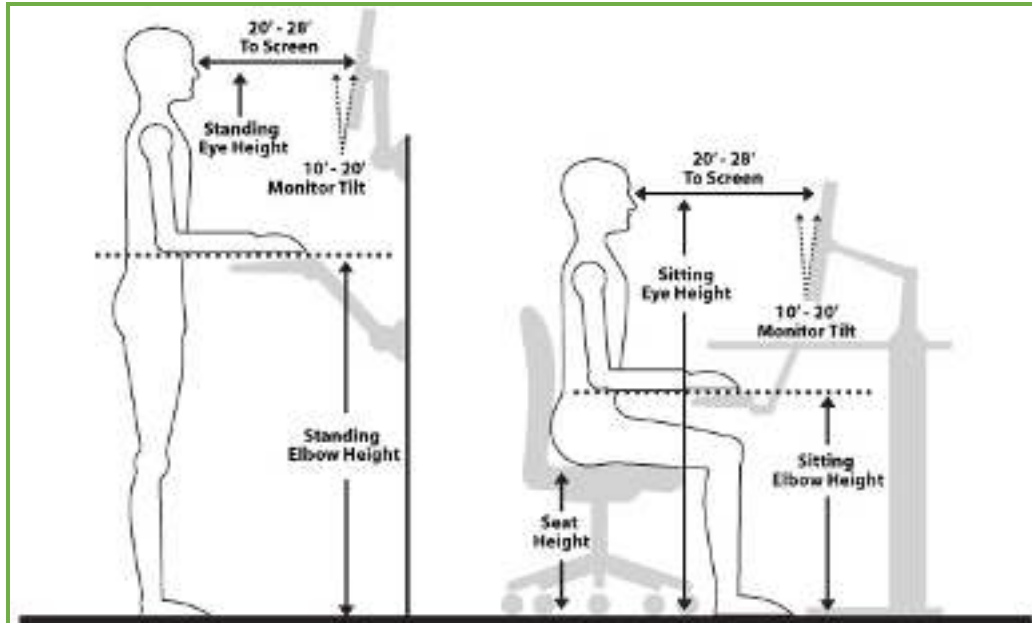
Figure E: Example of ergonomic workstation setup (from Ergomaker, 2021) Manual handling

EHOs carry out various manual handling tasks, which may include lifting, carrying, pushing and pulling of objects, as part of their everyday job. To manage the risk associated with manual handling, a manual handling activity assessment can be conducted. First, a list of such activities that EHOs typically perform must be developed. Then, an assessment must be conducted to determine activities that present a foreseeable risk and the hierarchy of control that can be applied to manage the risk. Table 11 provides an example of an assessment tool that EH managers can use.

Table 11: Example of manual handling activity assessment tool (adapted from Bonehill, 2010)

No.:	Date:	Name of Assessor:	
Initial assessment (✓)	Reassessment (✓)	Location:	
1. **Brief description of activity being assessed**			
2. **Task involved in activity (brief description)**			
Lifting:		Carrying:	
Pushing:		Pulling:	

3. **Person performing the activity (name & job title)**	4. Individual needs/vulnerable persons
5. **Activity presents a foreseeable risk** **Yes/No** **(if yes, go to 6; if no, go to 10)**	6. Activity can be avoided Yes/No (if yes, go to 7; if no, go to 8)
7. **Avoided (specify; then go to 10)** **Eliminated:** **Mechanised:**	8. Overall assessment of risk (risk rating) Low/Medium/High (go to 9 – full assessment required)
9. **Date of full assessment**	10. Date to review activity (specify)
Assessor's position:	Assessor's signature:

2.9.4.4 Gravitational, which includes slips, trips and falls

Slips, trips and falls comprise a common hazard within the EH workforce. For example, these may occur on kitchen floors and in cold rooms when inspecting a food establishment, when investigating incidents of environmental pollution in various outdoor environments and when accessing risky development/construction sites. Various factors contribute to slips, trips and falls, including individual factors (e.g., EHO not wearing appropriate footwear), environmental factors (e.g., changes in levels, uneven floor surfaces, wet/slippery floors, unsuitable floor covering) and organisation factors (e.g., layout of workplace; the management views slips, trips and falls as low risk; inadequate control and supervision). Slips, trips and falls can be managed similarly to other workplace hazards. The first step is to identify hazards, assess the risk and implement appropriate control measures. The EH manager must work in collaboration with EHOs to develop a slips, trips and falls management tool that can be used both in the office and the outdoor work environments.

2.9.4.5 Working alone

The field-based work setting that EHOs have to operate in, and the expectation placed on them to deliver environmental services, require them to frequently work alone, without the support of their colleagues or direct supervision for long periods, in often difficult and hostile environments. Working alone creates additional OHS risks for EHOs, and it is the responsibility of the EH manager to establish a mechanism to manage those risks. A list of potential hazards associated with lone working by EHOs is provided in Table 12. Working

alone is discussed under physical hazards because most of the associated hazards/risks are physical in nature. Hence, the EH manager should develop an assessment tool to assess and control those potential risky situations associated with lone working.

Table 12: Potential risks associated with lone working for EHOs

Potential risks in lone working for EHOs
• **Personal security**
• **Theft and criminal damage to equipment/vehicles**
• **Violence and aggression**
• **Working on private property**
• **Environmental issues (e.g., heat, cold, difficult terrain)**
• **Manual handling**
• **Attack by animals (e.g., dogs)**
• **Road traffic accident**
• **Long working hours (weekend, late hours)**
• **Medical history of EHO**
• **Remoteness of site (poor or no communication reception)**

2.9.5 Investigating, recording and reporting incidents

This section should cover the process of incidents and accidents within the EH workforce, the investigation of these occurrences, the legal requirements and the recording process. Incidents and accidents, whether major or minor and whether they cause damage to property, or injury and/or ill-health to EHOs, should be reported and thoroughly investigated to allow appropriate action for preventing a recurrence. Incident investigation should be led by the EH manager or the principal EHO. Under this section, the EH manager should:

- Outline the type of accidents and incidents that EHOs must report.
- Develop a simple but comprehensive system for incident reporting and recording.
- Develop a comprehensive process for incident investigation (see Figure F).
- Develop a method to generate a report that analyses the trends in performance and the prevalence of the types of incidents.
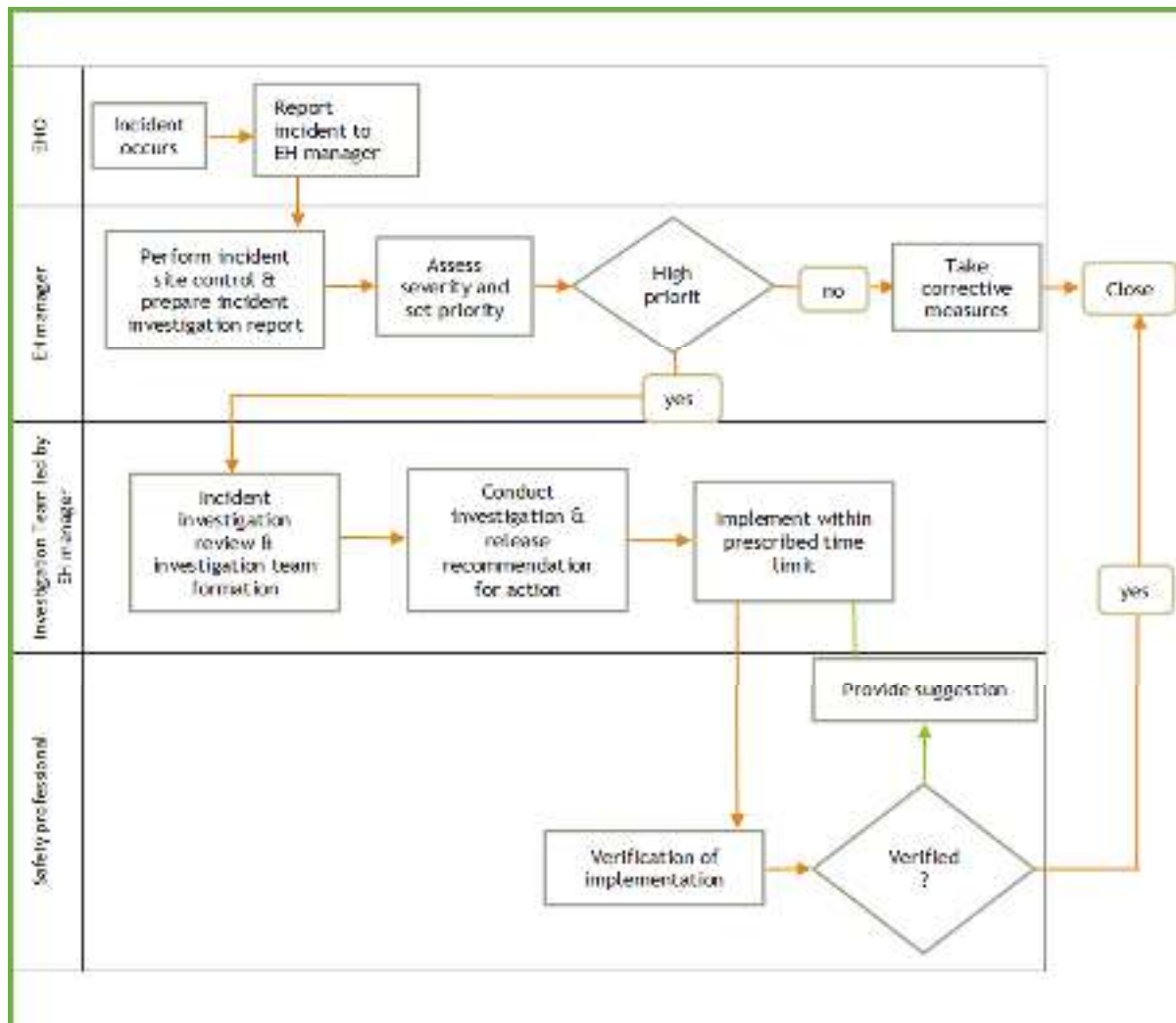
Figure F: Draft incident investigation process for the EH workforce (adapted from Verma et al., 2014)

2.9.6 Hierarchy of control

This section of the guideline should address the levels of control. After hazards have been identified and assessed, EH managers must discuss and adopt appropriate control measures. The first option is to eliminate the hazard, which provides the highest level of protection for EHOs. If the elimination of a hazard is not practical, other reliable control measures can be considered (Figure G). The concept illustrated in Figure G groups the levels of control into three main categories: totally eliminate hazards, control hazards or control the individual.
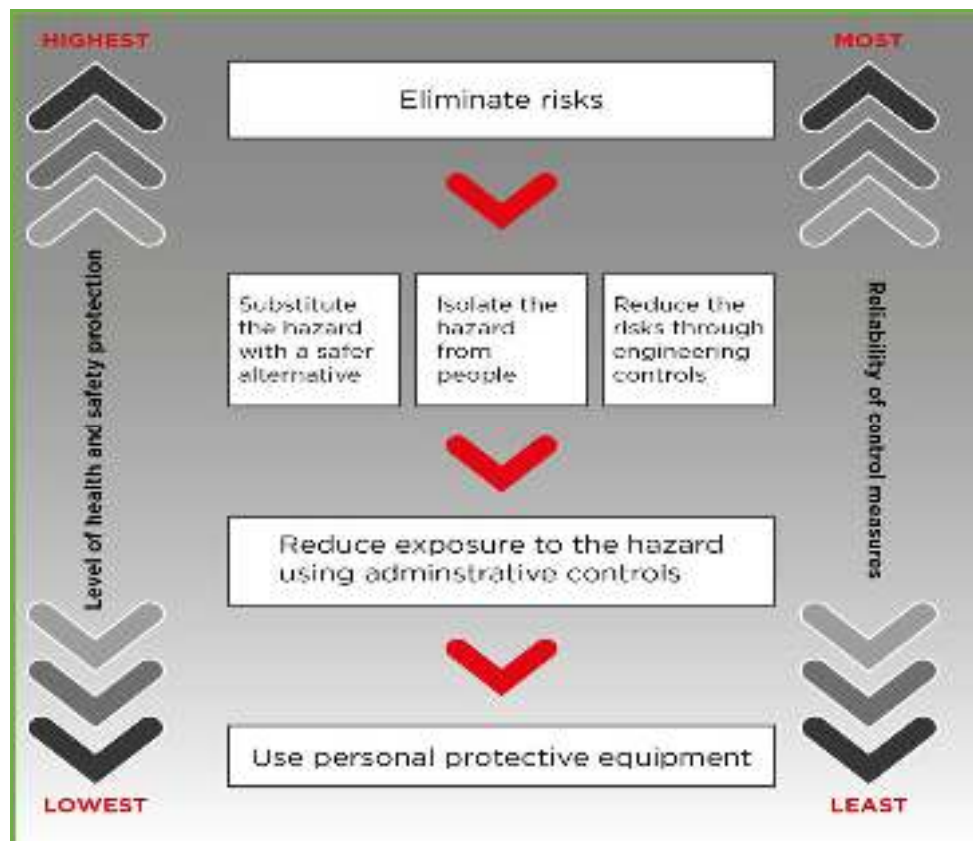
Figure G: Hierarchy of control measures (Safe Work Australia, 2018b)

2.9.6.1 Personal protective equipment

Personal protective equipment (PPE) is clothing or equipment that EHOs must use to protect themselves against foreseeable risks during the course of their work. In this section of the guideline, the range of PPE relevant to EHOs' work must be listed. Since PPE is provided as a last line of defence, there should be a risk assessment process to determine the need for it. Hence, a PPE risk assessment process must be developed to ensure the appropriate PPE is selected that is fit for purpose and will provide adequate protection. Figure H is an example of such a process that can be adopted.

In addition, this section must outline the responsibility of EHOs as regards compliance with PPE use. EHOs must use the PPE provided to them as a result of the risk assessment process. They are responsible for its appropriate cleaning/decontamination, disposal and storage and must report any problems or defects in it.

The EH manager must ensure that where fitted respirators are required for EHOs, these are correctly fitted. Only fit testing can guarantee that the respiratory protective equipment (RPE) fits correctly and will provide the intended protection. In Australia, fit testing is mandatory

under *Selection, use and maintenance of respiratory protective equipment* (AS/NZS 1715), which also details the different fit testing methods (Department of Mines, Industry Regulation and Safety, 2021). All fit testing must be carried out by a competent person, and it should be repeated on a regular basis based upon the risk assessment.
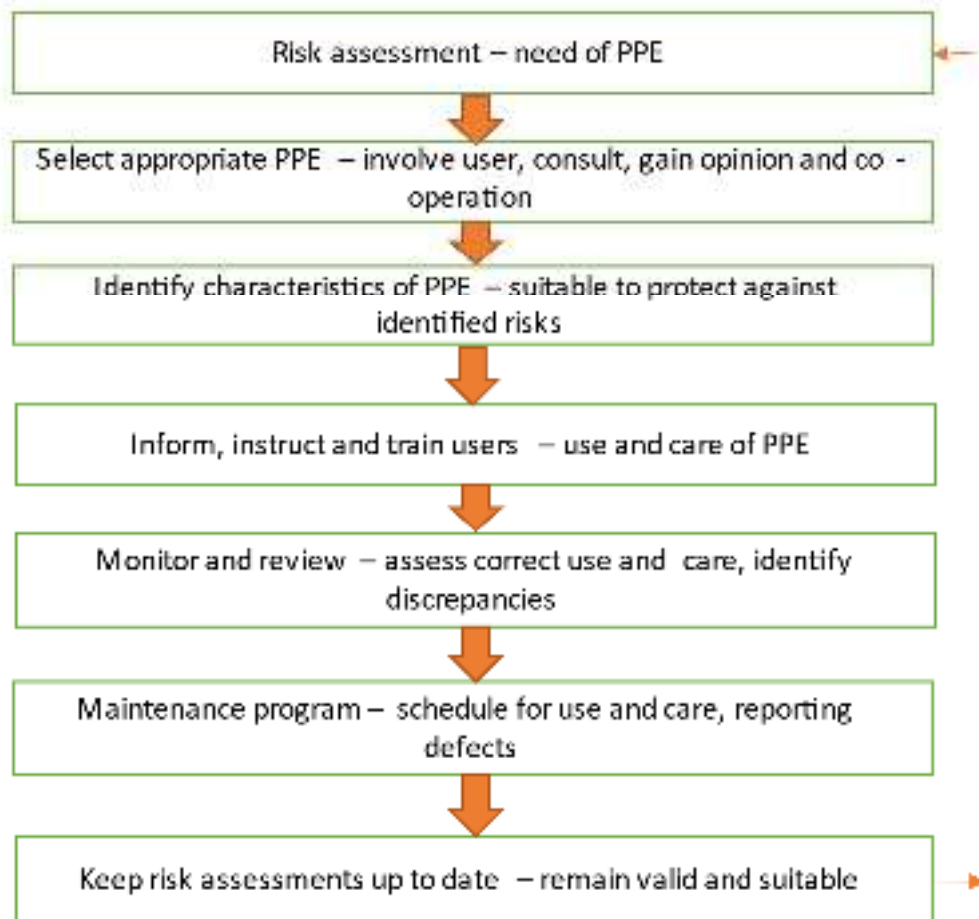
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┌─────────────────────────────────────────────────────────────┐
│              Risk assessment – need of PPE                    │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│  Select appropriate PPE  – involve user, consult, gain       │
│                  opinion and co - operation                   │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│  Identify characteristics of PPE  – suitable to protect      │
│              against identified risks                         │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│     Inform, instruct and train users   – use and care of PPE │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│  Monitor and review  – assess correct use and  care,         │
│              identify discrepancies                           │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│  Maintenance program – schedule for use and care,            │
│              reporting defects                                │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│  Keep risk assessments up to date  – remain valid and        │
│              suitable                                         │
└─────────────────────────────────────────────────────────────┘
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Figure H: Personal protective equipment assessment process (adapted from Bonehill, 2010)

2.9.7 Monitoring review and audit

Auditing and performance review are the final steps in the health and safety management control cycle. In this section, the EH manager should discuss the mechanism and process for the monitoring and auditing of health and safety performance. Monitoring and measurement

constitute an important step in the management of occupational risk and are the basis for ongoing improvement. The EH manager must ask the necessary questions to ensure that the system of controls in place is working effectively and is compliant with relevant legislation. This proactive approach to risk management includes scheduled routine inspections and checks to ensure that standards and policies are being adhered to and that control strategies are being implemented across the workforce.

The health and safety management system comprises three levels of control (Hughes & Ferrett, 2008). The most effective way for the EH manager to review and audit the risk management system is to consider the three levels of control, as shown in Figure I.
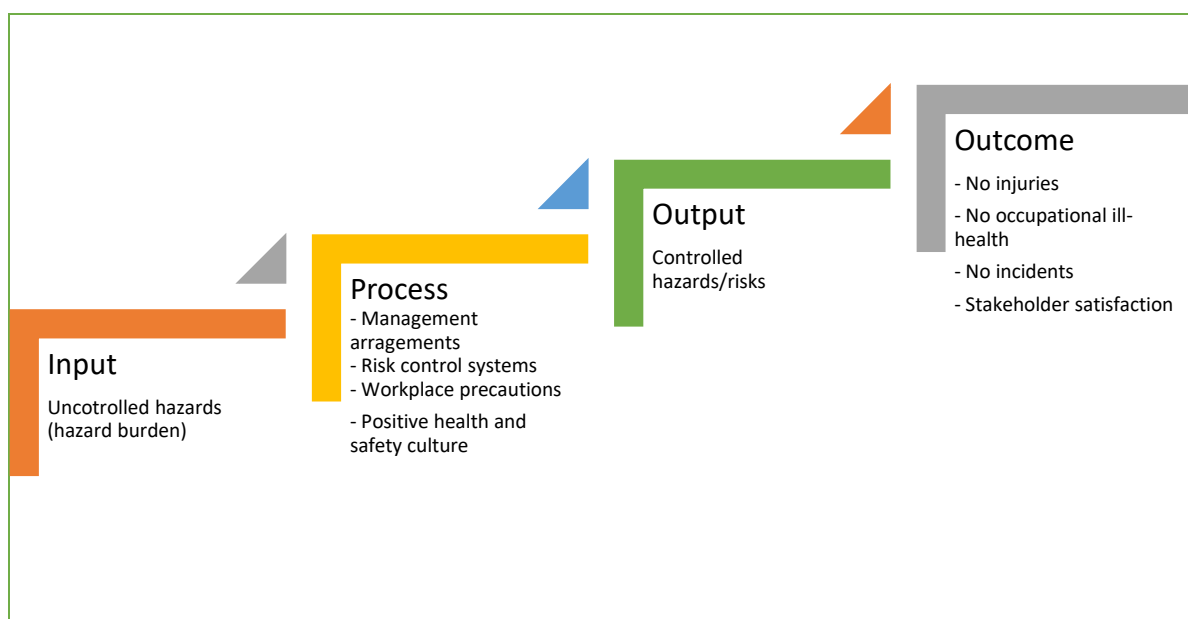

Figure I: Health and safety risk management approach (adapted from Hughes & Ferrett, 2008)

Apart from reviewing and auditing strategies designed to prevent the occurrence of work-related incidents, failures in risk control also need to be assessed. This provides EH managers with opportunities to learn from failures and to adjust control activities where necessary. EH managers need to have procedures in place, including systems to report hazards, faults, noncompliance, injuries, ill-health and other losses (e.g., property damage) in order to identify and report failures. This section should provide clear guidance on how to investigate these issues.
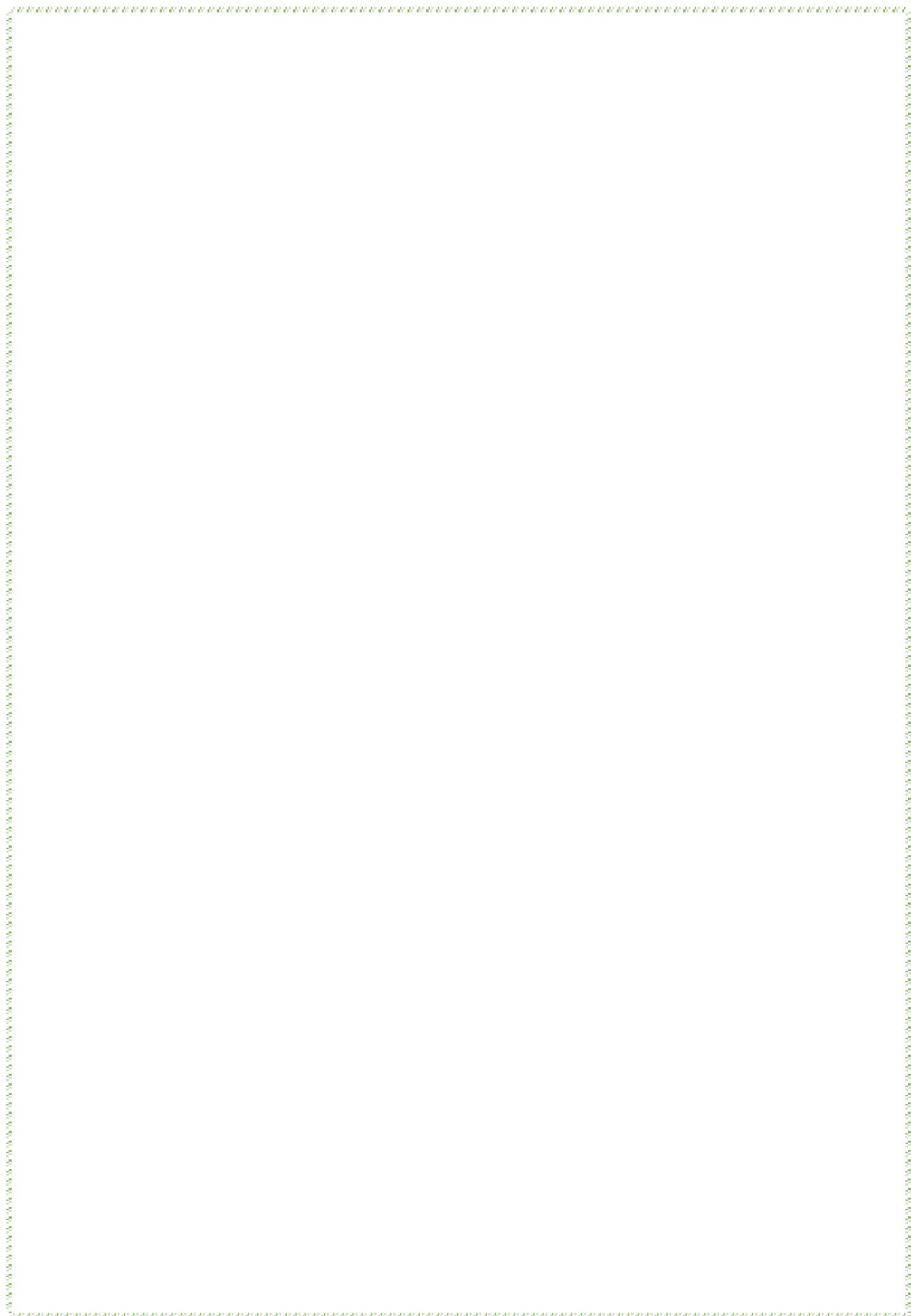
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