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# ► Improving occupational safety and health in small and medium-sized enterprises

PARTICIPANT HANDBOOK





▶ **Improving occupational  
safety and health in small  
and medium-sized enterprises**

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## ▶ ACKNOWLEDGEMENTS

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This document is a product of the International Labour Organization (ILO) Labour Administration, Labour Inspection and Occupational Safety and Health Branch (LABADMIN/OSH), the ILO Sustaining Competitive and Responsible Enterprises programme (SCORE) and the ILO Vision Zero Fund (VZF). The document was produced by Andrew Christian - Technical Specialist on Labour Inspection and Occupational Safety and Health (LABADMIN/OSH), Pranati Mehtha - Technical Officer (SCORE) and Maria E. Munaretto - Technical Officer (VZF), with the support of Evans Lwanga - Technical Officer (VZF Ethiopia) and Kesava Murali Kanapathy - Technical Officer (Better Work).

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## ▶ Acronyms and abbreviations

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- ▶ **AIDS**      Acquired Immunodeficiency Syndrome
- ▶ **GHS**      Globally harmonized system
- ▶ **HIV**      Human Immunodeficiency Virus
- ▶ **HSE**      Health and Safety Executive (United Kingdom)
- ▶ **ILO**      International Labour Organization
- ▶ **JSHC**      Joint safety and health committee
- ▶ **OSH**      Occupational safety and health
- ▶ **OSHMS**      Occupational safety and health management system
- ▶ **SDS**      Safety data sheets
- ▶ **SMEs**      Small and medium-sized enterprises
- ▶ **WISE**      Work improvement in small enterprises
- ▶ **WHO**      World Health Organization

## ► PREFACE

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Companies with the highest occupational safety and health (OSH) standards and a healthy, safe and motivated workforce are also the most successful and competitive; prevention has shown to be cost-effective.

Small and medium-sized enterprises (SMEs) are important contributors to national economies worldwide. However, they tend to have higher rates of occupational accidents and diseases, owing primarily to human and financial resource deficits, lack of awareness on OSH matters and difficulties in access to external support and training. In addition to the serious ethical concerns raised by human suffering, the impact of occupational accidents and diseases affects productivity and economic growth.

The ILO's comprised of this participant's handbook, a trainer's guide and a presentation, builds on the experience of the organization in the fields of OSH and enterprise development. It was jointly developed by the ILO Labour Administration, Inspection and Occupational Safety and Health Branch (LABADMIN/OSH), its Sustaining Competitive and Responsible Enterprises (SCORE) Programme, its Vision Zero Fund programme and SIRAYE: A programme on Advancing Decent Work and inclusive industrialization in Ethiopia.

It is largely based on SCORE's Training Module "Safety & Health at Work- A Platform for Productivity" , and introduces the main OSH principles, concepts, processes and tools in order to help SME workers, employers and managers to establish a safety and health culture with a view to continuous improvement at their enterprises.

To effectively improve OSH in SMEs, cooperation among employers, workers and their respective representatives is needed to ensure positive and continuous evolution; in other words, "OSH is everybody's business".

We hope that many employers and workers in SMEs will find this manual useful in practice.



**Joaquim Pintado Nunes**  
*Chief ILO*  
LABADMIN/OSH



**Michael Elkin**  
*Global manager*  
SCORE



**Ockert Dupper**  
*Global manager*  
VZF

## ▶ 1. OCCUPATIONAL SAFETY AND HEALTH IN SMES: OVERVIEW AND RATIONALE

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Each year, 2.78 million workers die from occupational accidents and diseases and 374 million are affected by non-fatal occupational accidents worldwide.<sup>1</sup> In other words, *over one million workers are injured at work every day*. And this impressive data reflects only the injuries and illnesses that occur in formal, registered workplaces; the actual size of the problem is even more dramatic.

“SMEs” are entities that employ more than 10 but fewer than 250 workers, with some variation in definition across countries.

The available data suggests that these workers are more likely to suffer occupational accidents and ill health than those employed by larger enterprises: accidents are 20 per cent more frequent than in enterprises with more than 100 workers and 40 per cent more frequent than in enterprises with more than 1,000 workers.<sup>2</sup> This disproportion is assumed to be even greater in developing countries undergoing rapid industrialization.

Various factors explain the generally poorer OSH management and insufficient application of OSH regulations in SMEs. These include:

- ▶ lack of in-house safety and health personnel;
- ▶ lack of access to external OSH services;
- ▶ limited experience on the part of employers and workers since SMEs tend to start up and go out of business relatively quickly;
- ▶ limited knowledge of what constitutes “safe” equipment and machinery;
- ▶ lower unionization rates since the presence of trade unions in a workplace is associated with better OSH conditions;
- ▶ perceived cost of improvements since SME employers often fail to make the link between, on the one hand, accidents, ill health and their associated costs and, on the other, OSH, productivity and profits;
- ▶ limited access to information and training opportunities.

Certain sectors, such as construction and small-scale mining, are particularly hazardous owing to the nature of the work, which, in the absence of appropriate risk control measures, entails risks such as falling from a height and entrapment.

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1 ILO: *Safety and Health at Work* (web page), <https://www.ilo.org/global/topics/safety-and-health-at-work/lang--en/index.htm>

2 ILO: Training package on Workplace Risk Assessment and Management for Small and Medium-Sized Enterprises (Geneva, 2013).



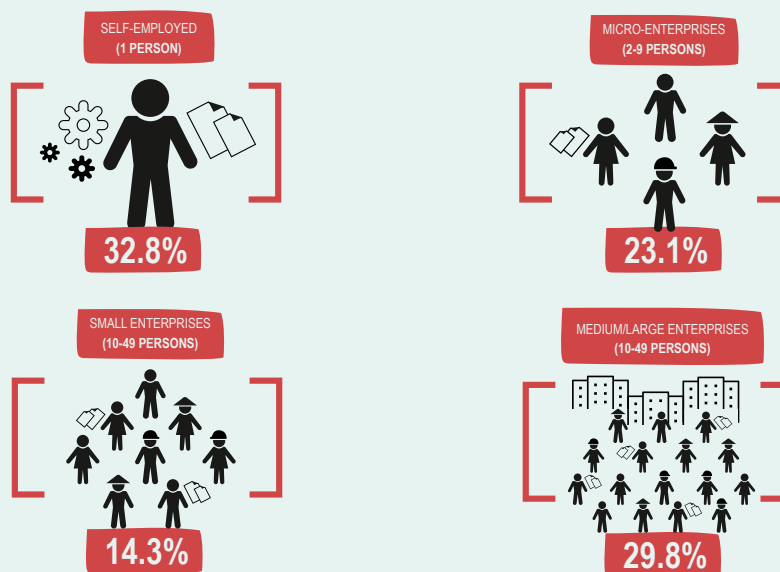
Other sectors that are generally perceived to be less hazardous, such as the textile and ready-made garments factories, are vulnerable to occupational accidents (e.g. fires and building collapse) with consequences that are worsened by inadequate evacuation routes and poor housekeeping. While the occupational risks may differ in each sector, a comprehensive approach to improving OSH conditions may be proposed and adapted to the needs of the enterprise in question.

Continuing progress requires cooperation between employers, managers, workers and their respective representatives; in other words, “OSH is everybody’s business” and its improvement makes sense from the ethical, business and legal points of view.

- ▶ **It’s the right thing to do:** All cultures value human health and wellbeing.
- ▶ **It’s the smart thing to do:** Studies show that the companies with the highest OSH standards and a healthy, safe and motivated workforce are also the most successful and competitive; prevention has been shown to be cost-effective.
- ▶ **It’s the legal thing to do:** Most countries’ legislation requires employers to protect their workers from hazards to their safety and health. Compliance with OSH laws prevents the imposition of economic and other penalties (fines and even imprisonment) on employers, their representatives and, in some cases, workers. As the informal sector and SMEs account for the majority of employment (Figure 1), improving OSH in these sectors is highly effective in improving public, and therefore global health.

▶ **Figure 1. Contribution of different sizes of enterprise to worldwide employment**

The data clearly shows that self-employed workers, together with micro- and small sized enterprises, account for the majority of global employment (about 70 per cent).



Source: Small matters - Global evidence on contributions to employment by the self-employed, micro enterprises and SMEs, ILO, 2019.

## ▶ 2. OCCUPATIONAL SAFETY AND HEALTH DEFINITIONS AND CONCEPTS

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### ▶ OCCUPATIONAL SAFETY

“Occupational” refers to issues related to working life. “Safety” is the condition of being free from hurt, injury or loss.

### ▶ OCCUPATIONAL HEALTH

“Health” is defined in the Preamble to the Constitution of the World Health Organization (WHO) as “a state of complete physical, mental and social well-being and not just the absence of disease or infirmity”.

“Occupational health” is the branch of medicine that deals with the prevention and treatment of work-related injuries and diseases. It is recognized by the WHO as a discipline closely linked to public health and health systems development.

“Occupational safety and health (OSH)” is the discipline that deals with the prevention of work-related injuries and diseases and the protection and promotion of workers’ safety and health. It seeks to improve working conditions and the environment and involves many specialized fields (such as occupational medicine, industrial hygiene, toxicology, education, industrial safety, ergonomics and psychology) and professionals (including occupational health physicians and nurses, industrial hygienists and inspectors).

*Both safety and health issues must be addressed in every workplace.*

### ▶ HAZARD

A “hazard” is anything with the potential to cause injury or damage to a person’s health. The potential for harm is a natural and permanent property of hazards.

Hazards can be found in virtually any workplace and come in many forms, such as:

- ▶ chemicals;
- ▶ electricity;
- ▶ noise;

- ▶ heat;
- ▶ work at height (Figure 3);
- ▶ unguarded machines;
- ▶ bacteria;
- ▶ viruses;
- ▶ stressful work;
- ▶ poor organization of work.

To better understand hazards and their potential effects, we can classify them as “safety hazards” or “health hazards”.

*Safety hazards* (and the resulting risks) are generally more easily identified than *health hazards* and are therefore easier to address. The high level of risk from an unguarded but dangerous machine, such as a die cutting press, and the injury that can result are evident to all whereas health hazards and the resulting risks are often less obvious.

Health problems caused by work can develop unnoticed and, in some cases, may not appear until much later in life.<sup>3</sup> Early diagnosis and treatment may prevent the problem from worsening, and even save the worker’s life. The effects of repeated and often low-dose exposure to a hazard over weeks, months and years must also be taken into consideration. For example:

- ▶ exposure to some chemical pesticides (e.g. insecticides, fungicides and herbicides) may result not only in poisoning (an immediate or “acute” health effect), but also in cancers that can take many years to appear. Such effects are often associated with repeated low-dose exposure;
- ▶ exposure to crop or animal dust can result in asthma, which may take time to develop. This, too, is often associated with repeated exposure and may result in recurrent long-term illness or asthma attacks;
- ▶ carrying heavy or awkward loads on a regular or occasional basis may result in permanent pain, physical disability or impairment in later life.

Permanent disabilities and illnesses are known as “chronic” health problems, meaning that they cannot be fully cured or reversed.

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<sup>3</sup> The period from exposure to onset of mesothelioma (a cancer caused by exposure, generally occupational, to asbestos) can be long, even spanning decades. (“Malignant Mesothelioma Mortality — United States, 1999–2015”, in *Morbidity and Mortality Weekly Report (MMWR)*, Vol. 66(8), 3 March 2017, pp. 214–218. Available at: <https://www.cdc.gov/mmwr/volumes/66/wr/mm6608a3.htm>)



► **Figure 2. Occupational hazards**



Left: A worker filling a bin with toxic chemicals

Right top: An underground mine operator standing by the rig that he controls remotely, away from the noise, heat and dust in the workplace

Right bottom: A technician working in a laboratory where HIV/AIDS testing is carried out

*Chemicals, noise, heat, dust and viruses are all examples of occupational hazards.*

The main exposure routes for hazardous substances, i.e. how they come into contact with or enter the body, are:

- Inhalation of substances such as gases, asbestos fibres, wood dust and mould, which may enter the body through breathing;
- dermal uptake of substances such as solvents, which may enter the body through the skin;
- accidental ingestion of substances such as hazardous chemicals, which, if stored in an unlabelled bottle, may be swallowed.

## ► PSYCHOSOCIAL HEALTH HAZARDS

With new technologies (e.g. extensive digitization), global competitiveness, changes in population and climate and new forms of employment and work (e.g. teleworking), it is more important than ever to anticipate new and emerging work-related safety and health risks and related accidents and diseases.

*Psychosocial risks* deserve particular attention and should be included in enterprise risk assessments since the combination of new work practices and economic crisis increases the risk of work-related stress, violence and harassment.

*Work-related stress* occurs where the demands of a job do not match the worker's capabilities, resources or needs or where the worker's knowledge or ability to cope do not match the expectations of an enterprise's culture. Some workers (e.g. those who work with the public) may experience greater stress than others. Stress can manifest itself in many ways, from feeling ill in the morning to serious health-related problems such as cardiovascular disease, depression, loss of sleep and even suicide. Workers may also react by adopting unhealthy coping mechanisms such as alcohol and drug abuse, unhealthy diet and insufficient physical activity.

*"Violence and harassment in the world of work"* means unacceptable behaviour and practices or threats thereof that aim at, result in or are likely to result in physical, psychological, sexual or economic harm, including gender-based violence and harassment. These behaviours and practices affect a person's psychological, physical and sexual health, dignity, and family and social environment.

*"Gender-based violence and harassment"* means violence and harassment directed at persons because of their sex or gender or affecting persons of a particular sex or gender disproportionately; this includes sexual harassment. Because such violence and harassment disproportionately affect women, enterprises must adopt an inclusive approach that addresses causes and risk factors, including gender stereotypes,<sup>4</sup> discrimination and unequal gender-based power relations or treatment, in order to end violence and harassment at work.

In addition to their impact on health, these factors also affect many aspects of an enterprise, including the quality of services that it provides and its reputation, organization of work, workplace relations and productivity. They therefore have no place in the promotion of sustainable enterprises.

The ILO recognizes the right of everyone to a world of work free from violence and harassment, which can constitute a human rights violation or abuse and a threat to equal opportunity. Violence and harassment are unacceptable and incompatible with decent work.<sup>5</sup> Enterprises must facilitate the prevention of these behaviours and practices by providing a working environment where, with the collaboration of all parties (not only employers, managers and workers, but also contractors, clients and visitors), violence and harassment find no place.

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<sup>4</sup> Preconceived ideas whereby women and men are arbitrarily assigned characteristics and roles that are determined and limited by their gender, e.g. "A woman should not be a pilot" or "Men don't have to do housework".

<sup>5</sup> ILO: See Article 16 of the Violence and Harassment Convention, 2019 (No. 190), available at: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100\\_ILO\\_CODE:C190](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C190)

## ► RISK

A “risk” is a combination of the likelihood (high or low probability) that a hazard will actually result in injury or illness, together with an indication of how serious the harm could be.

$$\text{Risk} = \text{probability of harm} \times \text{severity of harm}$$

Exposure to a *hazard* presents safety and health risks to workers: a toxic chemical, e.g. a pesticide, is a hazard but if it is produced in a perfectly enclosed system, no one is exposed; therefore, during manufacture it does not present a risk to human health. However, when it is sprayed on a field, unprotected workers may be exposed to it through inhalation (breathing), skin contact (dermal absorption) and/or accidental ingestion (swallowing).

### ► Figure 3. Exposure to hazards



House painters working without a working platform, guard rails or harness in Antananarivo, Madagascar, 2017. These workers may fall from a height and are therefore at risk of serious injury or death.

Falling bodies and objects (e.g. the ladder, the paint bucket or tools) may also harm passers-by or co-workers.

Weather conditions should also be considered when working at height since extreme temperatures and humidity (e.g. wet, slippery surfaces) can make this activity even more dangerous.

## ► RISK MATRICES

Risk matrices are tables used to evaluate existing risks on the basis of their likelihood of occurrence (probability, chance of happening) and the severity of their consequences (harm to safety or health).

## ► HOW TO USE A RISK MATRIX

To estimate the level of risk, select its likelihood (vertical column) and severity (horizontal rows) in the following table. The *risk level* is the intersection between those two factors: Risk = Likelihood x Severity.

For example if, at an enterprise, flammable materials are stored and handled with a lack of preventive measures, this would mean the *likelihood* of fire is “probable”, and its anticipated *severity* is “very harmful”. Therefore, the risk is classified as “high risk”, in the red zone, and immediate action to prevent it is needed.

## ► SAMPLE RISK MATRIX

Probability (likelihood) of event happening	Potential Severity or consequences of the event		
	Slightly harmful	Moderately harmful	Very harmful
Low probability	Low risk	Low risk	Medium risk
Probable	Low risk	Medium risk	High risk
Highly probable	Medium risk	High risk	High risk

Risk matrices can also be used to evaluate residual risk (the risk remaining despite the control measures currently in place).

*Risks that fall into the red zone have the highest priority and must be addressed first as they are the most likely to occur and their potential consequences in terms of harm to safety and/or health can be very serious.*

It is good practice to define what we mean by each level of severity, likelihood and risk. This is a 3x3 matrix; in other words, there are three levels for each of the three factors.

For the *likelihood* (probability) of an event happening:

- 1. **Low:** the chance of someone being harmed would be unlikely in the present circumstances.
- 2. **Probable:** there is a strong likelihood of someone being injured or becoming ill when working in the present circumstances.

- ▶ **3. Highly probable:** work situations in which it is almost certain that someone will suffer with injury or illness in the present circumstances.

For the *severity* of harm:

- ▶ **1. Slightly harmful:** Injury or illness requiring, at most, minor first aid treatment. It does not keep anyone off work for more than a couple of days, if at all;
- ▶ **2. Moderately harmful:** More serious injury or illness causing temporary incapacity from which the person can recover (e.g. a broken arm or minor fracture). The injury or illness keeps the victim off work and unwell for a substantial period of time;
- ▶ **3. Very harmful:** Potential death or serious injury or illness with long-term or permanent consequences (e.g. amputation or noise-induced hearing loss). The event is life-changing.

The matrix shows three levels of risk as the intersection between the level of harm and the probability of its occurrence:

- ▶ **1. Low risk:** A slight risk of minor injury or illness;
- ▶ **2. Medium risk:** the severity of injury or ill health are serious, or the probability is raised, even when less serious harm can be expected to result.
- ▶ **3. High risk:** it is probable or highly probable that there would be moderate or serious injury or illness or death.

In general, *high and medium* risks are unacceptable and require that remedial action, including the provision of information and training, be taken as soon as possible.

*Low risks* may not be a priority but could also be considered for remedial action as soon as possible, even while action is being taken to address higher-risk situations.

Although risk matrices are widely used in a variety of situations (e.g. enterprises, climate change studies and security research), they have significant limitations. Different persons may arrive at different ratings for the same risk because not everyone perceives its likelihood and/or severity in the same way. It is therefore essential to provide a clear description of each factor (likelihood, severity and risk level).

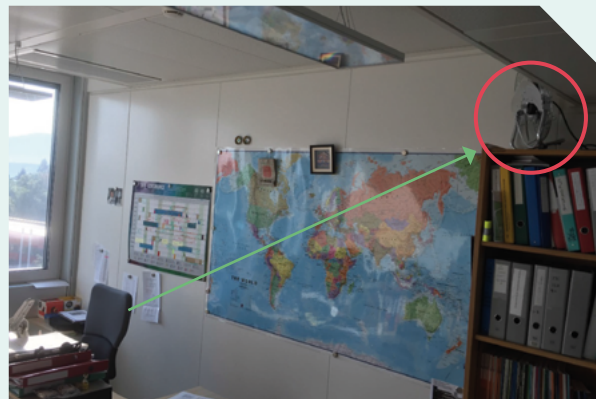
If properly handled, risk matrices can be practical and easy to use. As with all steps of this process, risk assessment by a team rather than one or two persons is likely to produce more balanced results by facilitating discussion of any controversial issues.

## ► HAZARD VERSUS RISK

Hazards and risks are different concepts and the difference between them may lead to confusion. It is important to remember that while hazards are linked to a specific substance or process, risks arise from the probability of injury and the severity of the potential consequences. The level of risk varies according to the measures used to control it.

For example, pesticides are toxic and therefore hazardous, and spraying them may present serious health risks to farmers or farmworkers. But where their application is properly controlled, these risks can be reduced to acceptable levels. In other words, the same hazard can present different levels of risk.

- **Figure 4. The same hazard (an unguarded fan) at the same workplace, but its location presents different levels of risk**



Left: On the desk, the unguarded fan presents an obvious risk.

Right: Placing the fan on top of the bookshelf reduces the risk.

“Acceptable risk” is the degree to which a person, organization or society is willing to tolerate a factor that has the potential to result in illness or injury (whether physical or psychological). Risk acceptance is a complex matter as different persons and societies have different ideas about what is acceptable. Technical, ethical, political and economic (what is the value of life or health?) and even psychosocial considerations are taken into account.

When deciding on the acceptability of a risk, it is important to consider the gender, age and health of the workers for whom the assessment is being conducted and to value their input.



## ► OCCUPATIONAL ACCIDENTS

An “occupational accident” is an occurrence arising out of or in the course of work which results in a fatal or non-fatal injury.

Like other undesired workplace events, occupational accidents are generally caused by various factors, some more evident than others, which form a causation chain leading to the accident.

### ► Figure 5. Occupational accident

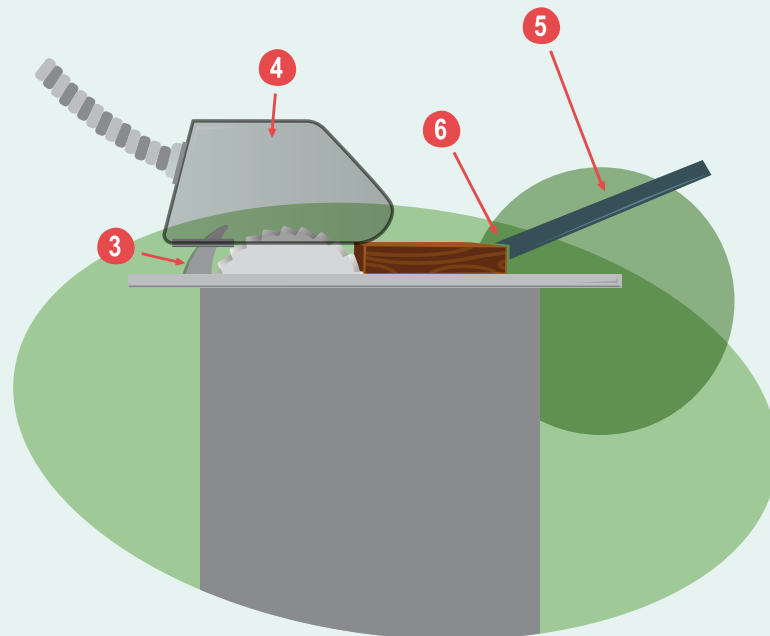
#### CIRCULAR SAW BENCHES

CIRCULAR SAWS SHOULD HAVE:

A riving knife **3**

A top guard, which can be lowered as close as possible to the work piece **4** These prevent wood being ejected towards you and you touching the saw blade when you use a circular saw blade.

To prevent cuts when you use a circular saw you must keep your hands away from the blade. If you need to approach within 30cm of the saw blade use a push stick **5** that is at least 45cm long and has a bird's mouth **6** This will ensure that your hand is kept away from the rotating blade.



A young operator is injured when his hand comes into contact with the unguarded blade on the circular saw bench which he is operating.

*Generally speaking, many factors contribute to occupational accidents, including (among other things) age, job experience, training, workplace stress, fatigue, productivity rhythms, unguarded machinery, unsafe work procedures, supervision and OSH management.*

*Commuting accidents* may also be considered occupational accidents.

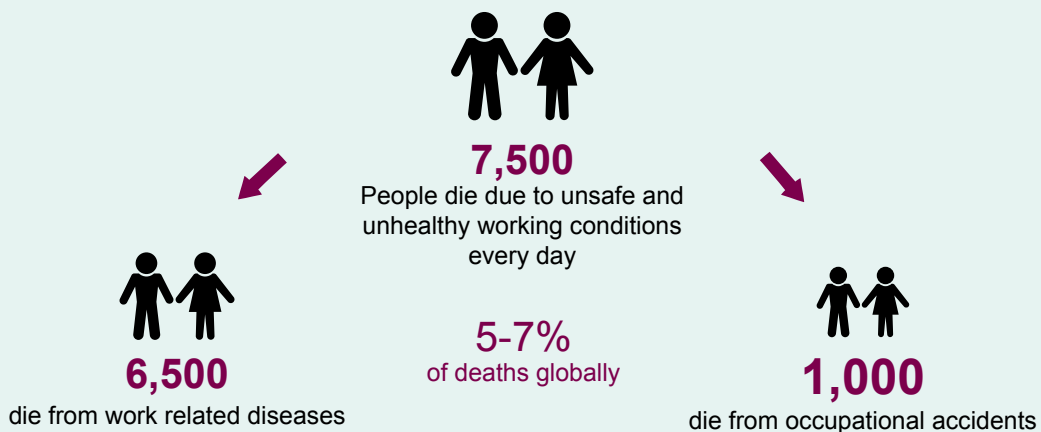
Mobility to and from work significantly impacts women’s access to the world of work, and studies show that safety and security problems (e.g. harassment and assault) may discourage them from using public transportation. Night shifts may present a higher risk for all workers (male and female) and their needs and concerns should be taken into consideration by the enterprise’s management: if public transportation cannot offer safe conditions, the enterprise should provide it or make arrangements to prevent commuting-related risks to safety and security.

## ► OCCUPATIONAL DISEASES

The term “occupational disease” means any disease contracted as a result of exposure to risk factors arising from work activity, such as noise-induced hearing loss, silicosis (a lung disease caused by the inhalation of dust containing free crystalline silica), asthma (from exposure to wood dust or chemicals) and musculoskeletal disorders (caused by repetitive forceful work).

It is important to note that non-occupational diseases can also be affected by work; for example, high blood pressure may be worsened by work-related stress.

► **Figure 6. Global deaths resulting from occupational diseases and accidents (per day)**



Most deaths caused by unsafe and unhealthy working conditions are the result of work-related diseases. A safe and healthy workplace can prevent occupational diseases and accidents.

## ► DANGEROUS OCCURRENCES

A “dangerous occurrence” is a readily-identifiable event defined under national laws and regulations with the potential to cause injury or disease to persons at work or to the public.

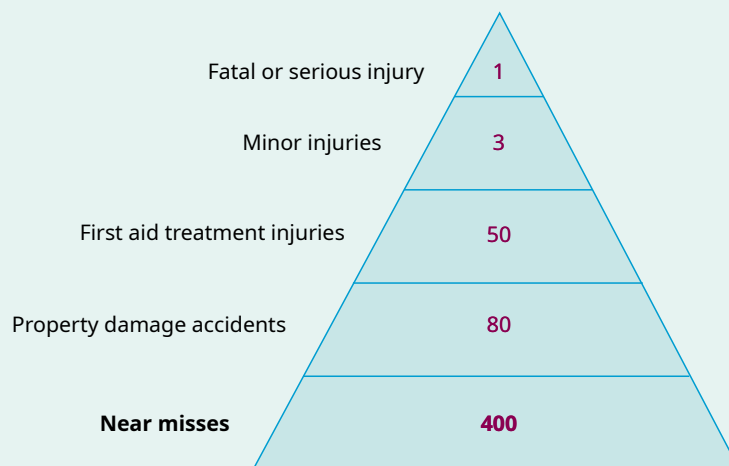
## ► NEAR MISSES

“Near misses” are incidents, not defined under national laws and regulations, in which there was no injury or property damage but the potential for injury existed. In other words, these are incidents that could have caused harm to workers or the general public (e.g. a brick falling from scaffolding without hitting anyone).

Accidents, diseases and near misses should be investigated and analysed in order to:

- determine why they happened (the cause);
- identify the controls needed to prevent their recurrence (so that they don't happen again);
- prevent future injury or loss of productivity;
- gather and preserve evidence for claims.

### ► Figure 7. Near misses



For every fatal or serious accident, there were 400 near misses where lessons could have been learned, thus preventing fatalities or serious injuries in the future.

Collecting information on near misses and dangerous occurrences (“incidents”) can be useful in preventing occupational accidents and diseases and should therefore be investigated in order to answer the following questions (the “5Ws and 1H”):

- ▶ **Who** was injured, suffered ill health or was otherwise involved in the event under investigation?
- ▶ **Where** did the incident occur?
- ▶ **When** did the incident occur?
- ▶ **What** happened at the time of the incident?
- ▶ **How** did the incident occur?
- ▶ **Why** did the incident occur?

Employers need to record information not only on occupational accidents and diseases, but also on dangerous occurrences and near misses. Reporting them to the competent authorities is normally a legal requirement. The report should include the essential information on how the person was injured or came to be ill so that the event or condition can be analysed, the circumstances understood and the necessary steps taken in order to prevent its recurrence.

Employers must ensure that workers understand their obligation to report to their supervisors any hazardous situation or abnormality observed in the workplace. Workers and their representatives should be aware of any reported cases and the circumstances under which they occurred so that they can help to improve working conditions. This information is valuable not only for prevention, but also for statistical purposes and studies.

It is important for enterprises to have a “no-blame culture” for reporting incidents since they might otherwise not be reported and an accident might occur. Having a form on which to record incidents makes it easier to take corrective action. A sample workplace incident report form is provided in Appendix I.

*Remember that occupational accidents, diseases and other undesired events are preventable!*

## ▶ PREVENTATIVE SAFETY AND HEALTH CULTURE

It is important to remember that occupational accidents and diseases do not affect all workers equally.

Young workers (aged 15–24), women and migrant workers are particularly vulnerable to occupational injuries and illnesses, especially when they work in hazardous sectors, such as construction and agriculture, and under precarious conditions, such as the informal economy. Different needs in the workforce must be considered in order to achieve safety and health for all.

► **Figure 8. Information on vulnerable workers**

## A FOCUS ON THE MOST VULNERABLE WORKERS

Safety + Health for All develops interventions to address OSH issues for categories of workers that face pressing needs, such as:

- Workers in hazardous sectors such as construction and agriculture;
- Workers in small and medium enterprises;
- Workers that are disproportionately vulnerable to injury and disease including informal and migrant workers, female workers, and young workers (ages 15–24).

### Construction & Agriculture

The construction and agriculture sectors are some of the world's largest and most dangerous sectors. At least 60,000 construction workers and 170,000 agricultural workers die each year. Agricultural and construction workers suffer the most from climate change and related heat stress.

Percentage of working hours to be lost due to heat stress in 2030 by occupation:



### Young Workers

Workers between 15 and 24 suffer the highest rate of work-related injuries.

**40%**

higher non-fatal injury incidence in the EU than older workers

### Migrant Workers

**164** million people migrated for work from 2013–17

Most migrants are employed in the three "D" jobs (dirty, dangerous and demeaning) in often informal and/or unregulated sectors such as agriculture, construction or domestic work with little respect for labour rights and other protections.

### Women Workers are

**26%** less likely to be employed than men

Women's jobs are often concentrated in the lowest paid jobs and often working as temporary or seasonal workers. The precarious nature of many women's work makes them especially vulnerable to sexual harassment and violence.

### Workers in the Informal Economy

**>60%** of the world's employed population works in the informal economy.

Informal economy workers often work in the most hazardous jobs, conditions and circumstances across all economic sectors including construction and agriculture.

Only **9%** of all SMEs and micro-enterprises worldwide operate in the formal economy.

### Pregnant and nursing workers

Many countries have legal measures in place to shield pregnant and nursing women from work-related risks, including by requiring dangerous substances to be identified and prohibiting their use. Where a significant workplace risk exists, legislation often requires employers to mitigate those risks by transferring the woman to other tasks or allowing her to take maternity leave sooner.

All forms of discrimination against pregnant and nursing workers should be prohibited.

The protection of maternal health is included in Sustainable Development Goal 3: Ensure healthy lives and promote wellbeing for all at all ages.



## ► PREVENTION<sup>6</sup>

“Prevention” means stopping something from happening.

A growing number of countries are now giving higher priority to OSH and the prevention of accidents and ill health rather than reacting after they have occurred. Perhaps most importantly, many more stakeholders – governments, employers, workers and others – now accept that the burden of occupational accidents and ill health is much greater than previously believed. It is now widely recognized that occupational accidents and diseases have a major impact on enterprises’ productivity, competitiveness and reputation, as well as on the livelihoods of individuals and their families. Moreover, occupational accidents and ill health place an intolerable humanitarian and economic burden on a country, damaging its reputation for good business and undermining sustainable economic growth. In short, *prevention pays*.

The ILO Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)<sup>7</sup> describes a national *preventative safety and health culture* as one “in which the right to a safe and healthy working environment is respected at all levels, where government, employers and workers actively participate in securing a safe and healthy working environment through a system of defined rights, responsibilities and duties, and where the principle of prevention is accorded the highest priority”.

*To summarize, exposure to hazards at work can cause occupational accidents and ill health or disease. OSH is the discipline that prevents, anticipates and controls or minimizes workplace risks, including psychosocial risks, by maintaining and promoting workers’ safety and health and a safe and healthy working environment.*

<sup>6</sup> The cost-effectiveness of prevention has been demonstrated by several studies, e.g. Lahiri S et al., “The Cost Effectiveness of Occupational Health Interventions: Prevention of Silicosis”, in *American Journal of Industrial Medicine*, Vol. 48(6), December 2005, pp. 503–514, preprint available at: [https://www.who.int/quantifying\\_ehimpacts/global/8silicosis.pdf](https://www.who.int/quantifying_ehimpacts/global/8silicosis.pdf)

<sup>7</sup> ILO: Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), Article 1(d). Available at: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C187](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C187)



## ▶ 3. RISK ASSESSMENT

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Owners/managers of SMEs and workers can act together to improve OSH in their workplaces. Work-related injuries and ill health can ruin lives and affect productivity, and small businesses are particularly vulnerable to the impact of occupational accidents and work-related ill health.

To pursue safe and healthy workplaces and promote productivity and competitiveness, enterprises can take a number of steps, including by adopting safety and health policies, establishing OSH committees and training programmes and conducting risk assessments, which are key to managing risks at the enterprise level.

The term “risk assessment” means a careful examination of potential work-related causes of injury or ill health. It allows employers to determine whether they have implemented suitable risk control measures, or whether they should do more to reduce risk to an acceptable level for both workers and members of the public. The aim is to ensure that no one is injured or falls ill.

The outcome of a risk assessment should help employers to choose which form of risk control measure is most appropriate. Workers and others (including visitors) have a right to be protected from potential harm caused by an employer’s work activities. Laws may not expect employers to eliminate risk but require them to reduce it as far as reasonably practicable<sup>8</sup> in order to protect safety and health in the workplace.

Risk assessment is a valuable tool that gives employers and businesses a means to be proactive, identify hazards and take action to remedy problems *before* they cause an accident or ill health. In other words, risk assessment can help to make the workplace safer, healthier and more productive.

This should not be a complex procedure since employers and workers know their own workplaces, and it is useful to help them find cost-effective, practical ways to control risks at work. Another advantage is that risk assessment may be applied to any type of risk, including psychosocial risk (workplace stress).

*The responsibility to conduct risk assessments lies with employers (who may designate one or more competent persons for this task) under the laws of most countries. These designated persons should have a good knowledge of the workplace and work processes, know where to find and how to make use of good practices and have the employer’s authority behind them. They should also have the ability to identify hazards and levels of risk, an understanding of the necessary risk controls and how to put them into practice, and the authority to do so.*

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<sup>8</sup> See Article 16 of the Occupational Safety and Health Convention, 1981 (No. 155). Available at: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C155](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C155)

Where this expertise is not available in-house, competent external persons can help. In such a case, the employer should verify that they are familiar with specific work activities and have the ability to assess them.

Risk assessments in SMEs do not normally need to be conducted by safety and health experts, but the persons selected to conduct them should have:

- ▶ an understanding of the general approach to risk assessment;
- ▶ the capacity to apply this to the workplace and the task at hand. This may require:
  - ▶ identifying safety and health problems;
  - ▶ assessing and prioritizing the need for action;
  - ▶ suggesting options for eliminating or reducing risks, explaining their relative merits and evaluating their effectiveness; and
  - ▶ promoting and communicating safety and health improvements and good practices;
- ▶ the ability to identify situations in which they are unable to adequately assess a risk so that further assistance can be sought.

Workers' collaboration is fundamental since their observations arise from direct experience. They should receive basic training in risk assessment in order to ensure that the relevant concepts and steps are clear to them.

While workplace inspections can be compared to "snapshots" of the workplace, risk assessment is an ongoing (continuous) process and may be carried out at various levels:

- ▶ for the enterprise as a whole (covering all activities, processes and workers);
- ▶ in a section of the workplace (e.g. a machine repair shop with a specific group of workers);
- ▶ for a hazardous activity or process (e.g. problems with handling heavy loads).

### ► 3.1 THE 5 STEPS OF RISK ASSESSMENT

A practical method of conducting risk assessments is to follow the five steps listed below:



A template to facilitate the recording of risk assessments is provided in Appendix II.

#### **STEP 1: IDENTIFY HAZARDS AND WHY THEY ARE PRESENT**

A risk assessment begins with *identification of the hazards* in a workplace (not only those arising from work activities, but also factors such as the layout of the premises). The goal of this step is to identify anything that can cause harm to persons at the enterprise. If a hazard is not identified it cannot be controlled, so it is crucial that this step be as comprehensive as possible.

For those who work in a place every day, it is easy to overlook hazards. Here are some tips for identifying the ones that matter. The employer, designated worker or external service should:

- ▶ walk around the workplace and look for anything that could reasonably be expected to cause harm;
- ▶ determine which work activities and processes are the most dangerous/hazardous and where they are located. It may be helpful to make a checklist; in any case, it is important to take notes for use when the written risk assessment is prepared;
- ▶ ask the workers or their representatives about the dangers they encounter in the course of their work and how they think workplace accidents and ill health can be prevented. They may have noticed things that are not immediately obvious to whoever is conducting the risk assessment;
- ▶ learn from previous accidents and work-related ill health, which can often draw attention to less obvious hazards;
- ▶ remember to think about both hazards that present an immediate danger to safety and health, and those that pose a long-term danger to health (e.g. high noise levels or exposure to harmful substances);
- ▶ contact any trade association of which he or she is a member since many of them can provide useful guidance;
- ▶ check manufacturers' instructions and data sheets, which they can be very helpful in identifying chemical and equipment hazards and putting them into perspective;
- ▶ ask co-workers if they can think of any hazard that has not been identified and any worker at a potential risk that may have been missed.

**OSH checklists** are another valuable tool for identifying hazards and assessing and controlling risks in an organized manner. These are lists of closed-ended (YES or NO) questions that must be answered each time a risk assessment or workplace inspection is conducted. They focus on specific problems (e.g. machine safety, work at height and waste disposal) and, once completed, offer a "snapshot" of the workplace or section thereof that is then used to guide remedial action.

SAMPLE CHECKLIST	Yes	No
Is the workplace generally clean and tidy?		
Are dirt, rubbish and waste removed on a regular basis?		
Are the floors washed and swept on a regular basis?		
Are the ceilings, in particular, kept clean?		
Are worktables and benches kept clear of unnecessary items?		
Are there adequate signs: (1) to encourage good safety practices and housekeeping? (2) to warn persons of hazards in the work area?		
Are all materials, supplies and stock stacked safely?		
Are storage areas appropriately identified/marked?		
Are all aisles, stairs and passageways kept clear of stock, rubbish and obsolete items?		
Are separate containers for the collection of stock and rubbish provided?		
Are floor surfaces level, non-slip (i.e. free of water, oil or other liquid spills) and in good condition?		
Are ramps for the easy movement of materials and workers provided?		
Are passageways/aisles of the requisite width and clearly marked with painted lines?		
Are passageways/aisles kept clear of any obstructions that might hinder the flow of goods and persons?		
Are pedestrian walkways separate and clearly marked to distinguish them from vehicle driveways (e.g. in warehouses)?		
Are fire evacuation procedures displayed and have practice evacuations been conducted?		
Have fire emergency equipment, fire exits, etc. been checked and maintained at regular intervals?		

In other words, checklists are a simple way to ensure that attention is paid to critical OSH problems at the enterprise.

Whoever is carrying out the risk assessment should establish the area to be checked, which may be the whole enterprise or some of its sections.

A walk through the workplace and careful observation are needed before the checklist is completed.

After reading each checkpoint on the checklist (below) and interacting with the workers, decide whether to check the box “Do you propose action?”

Check the box under YES if action is needed and under NO if an adequate corrective measure is already in place.

Use the space under “Remarks” to write down your suggestion or its location. Then select the items where improvement would yield the greatest benefits and mark them as PRIORITY.

A small-group discussion should follow in order to agree on the improvements that should be made immediately.

**SAMPLE CHECKPOINT ON A CHECKLIST:**

**Work Station and Work Tools**

Put frequently used tools, switches and materials within easy reach.

Do you propose action?

No  Yes  Priority

Remarks \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Checklists have many advantages: they draw attention to significant safety and health issues, provide a written record of each checkpoint and the problems noted, can be used as a basis for hazard reports and discussions or tailored to each workplace (with additional checkpoints added as needed), facilitate an organized approach to good practices and reinforce team spirit. They also have limitations: since they are not exhaustive and do not cover all potential problems, items not included in the checklist may be ignored or overlooked.

Regardless of the tools selected, the search for workplace hazards should begin with what could be reasonably expected to cause harm. In the following example, three examples of hazards in the woodworking industry are listed (first column):



Step 1	Step 2	Step 3		Step 4		
What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom	Action by when	Completed
Exposure to wood dust						
Machinery						
Manual handling						
<b>Step 5: Monitor and review the risk assessment and update it when necessary</b>						

All relevant activities (e.g. production, planned preventative maintenance and breakdown maintenance) and areas must be addressed.

Workers should be actively involved in this process, including by explaining (directly or through their representatives) the dangers of their work, how they think that they could be injured and what near misses they have had. Their knowledge of the workplaces makes this a very important point since others might overlook or ignore potential hazards.

#### Tools for helping to identify hazards:

- Previous workplace inspections or surveys
- Written or verbal hazard/accident reports
- Personal observations
- The safety and health committee, if one exists
- Warning labels or signs
- Manufacturers' safety data sheets
- Manufacturers' manuals or instructions

### THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

The GHS is an internationally harmonized (single) system developed by the United Nations in order to inform and protect persons involved in the production, handling, transport, use and disposal of chemicals. It also includes their environmental risks.

Countries that have adopted the GHS are “speaking the same language” in the classification of chemicals because their labels and safety data sheets (SDS) have the same characteristics and requirements. The hazard information provided on GHS labels and SDS is particularly useful for transport and other workers, emergency responders and consumers.

The information on GHS SDS must cover, in order, the following points:<sup>9</sup>

1. identification;
2. hazard identification;
3. composition/information on ingredients;
4. first aid measures;
5. fire-fighting measures;
6. accidental release measures;
7. handling and storage;
8. exposure controls/personal protection;
9. physical and chemical properties and safety characteristics;
10. stability and reactivity;
11. toxicological information;
12. ecological information;
13. disposal considerations;
14. transport information;
15. regulatory information;
16. other information.

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<sup>9</sup> A sample GHS SDS for 2-propanol is available at:  
<https://www.fishersci.ca/shop/msdsproxy?productName=A426P4&productDescription=2-propanol-histological-fisher-chemical-5#page=1&zoom=auto,-99,798>

The six types of information that must be provided on GHS labels are summarized below:

► **Figure 9. Six Elements of a GHS-Compliant Label**



- ① Product identifier / Ingredient Disclosure
- ② Signal word
- ③ Hazard Statement

- ④ Precautionary Statements
- ⑤ Supplier Identification
- ⑥ Pictograms

**Product identifier:** the chemical identity of the substance and its shipping name

**Signal words:** indicate the level of severity of the hazard, including “Danger” (more serious) and “Warning” (less serious)

**Hazard statements:** phrases (and codes) describing the nature and, where appropriate, the degree of the hazard, e.g. “Causes skin irritation”

**Precautionary statements and pictograms:** phrases and/or pictograms indicating recommended measures to be taken in order to minimize or prevent the harmful effects of exposure to, or improper storage or handling of, a hazardous product. There are 5 types of precautionary statement: general, prevention (e.g. “do not spray on an open flame or other ignition source”), response (in the event of spillage or exposure), storage, and disposal

**Supplier information:** detailed contact information (name, address and phone number) for the manufacturer or supplier

**Pictogram:** a graphical composition including a symbol, shape, border, background and colour that is intended to convey specific information

► **Figure 10. GHS pictograms**



**EXPLOSIVE**



**FLAMMABLE**



**OXIDIZING**



**COMPRESSED GAS**



**HARMFUL/IRRITANT**



**DANGEROUS  
FOR THE ENVIRONMENT**



**HEALTH HAZARD**



**CORROSIVE**



**TOXIC**

Up-to-date information on the safety and health hazards and risks associated with products and agents used in the workplace should be obtained from labels and SDS.

A “label” is a display affixed to a container and includes the name of the substance and basic information on its safe use and handling. Labels provide an immediate warning of the hazards to which workers may be exposed. All hazardous chemicals introduced into or used in the workplace must be in labelled containers.

Employers and workers must be aware of the hazards presented by the chemicals used in the workplace and the protective measures to be taken. The hazards of storage are minimized by the packaging but in the event of a spill or other accident, workers and emergency responders need to know what mitigation measures are appropriate.

In many countries, manufacturers and suppliers are required to provide professional users with an SDS indicating the properties of the substance; the danger to health and the environment; the hazards arising from its properties, use, storage, transportation and disposal; and guidance on the protection of workers (e.g. firefighting and other measures to be taken following accidental release and first aid measures if necessary).

In short, the SDS describes the hazards presented by a chemical and how it can be safely handled, used, transported, stored and disposed of. SDS may be used together with labels, safety bulletins, training and other communications.

*Workers and their representatives should have the right to receive SDS and similar information in forms and languages that they can easily understand.*

## VISUAL REPRESENTATION OF HAZARDS

A simple way to help hazard identification is to draw a map of your workplace and its layout, then marking on it the various hazards (Hazard Map).

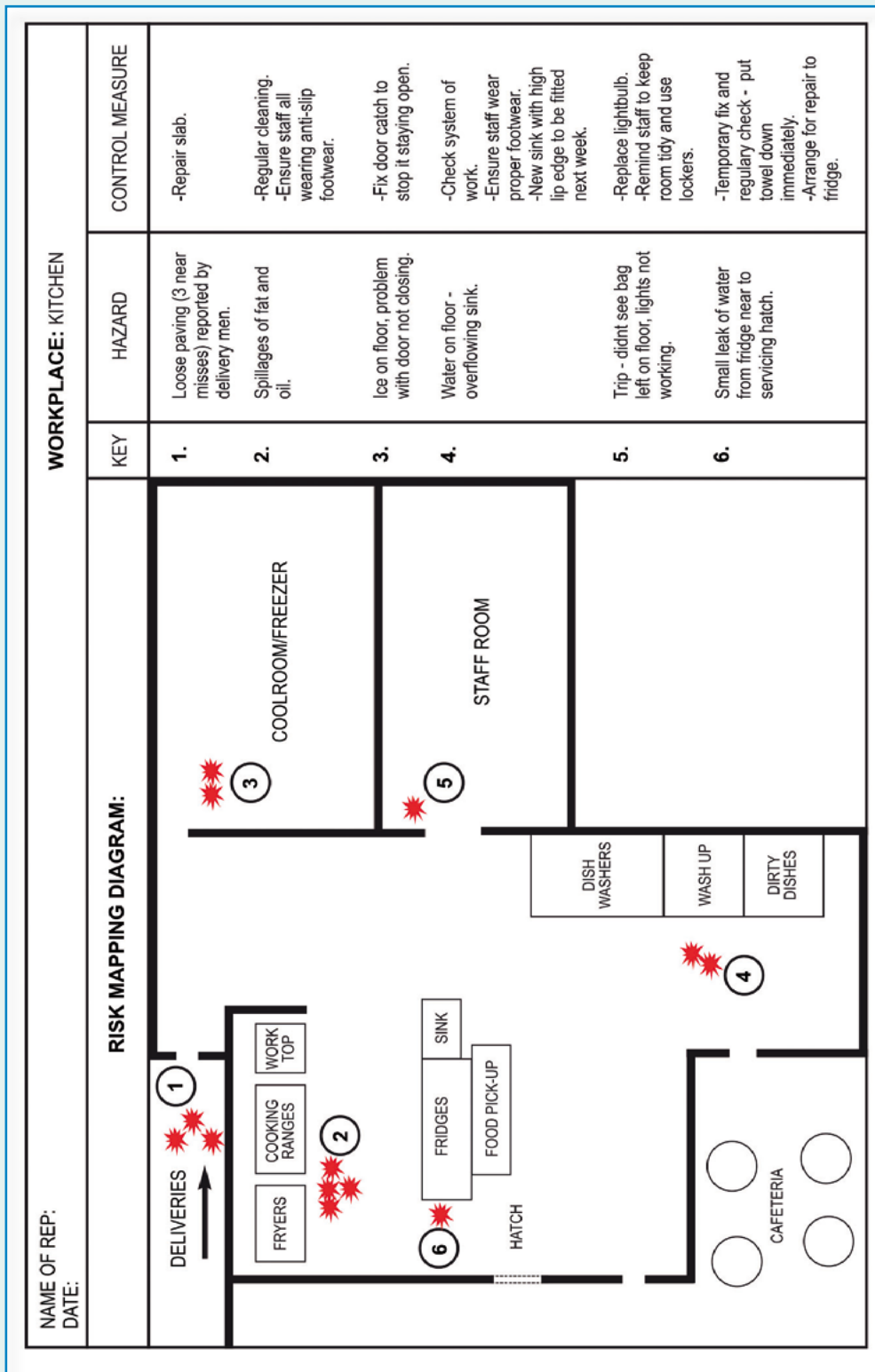
Draw a map of your workplace and accurately mark its main features, including doors, windows, stairs and passageways. Then mark on it any potential hazards and risks, showing the location of each hazard in the enterprise as a whole or in selected sections or departments. Hazards are usually indicated by coloured circles or shapes; different risks may be marked in different colours.

Having hazards clearly located makes it easier to eliminate them wherever possible. Collaboration with workers is key since their experience and knowledge of the workplace facilitates detailed identification and location of hazards through this simple, low-cost method.

Mapping provides an overview of the status of OSH at the enterprise and makes it easier to identify appropriate risk control measures. The hazard map should be kept on hand and updated whenever significant changes (e.g. new machine guards on existing machines) are introduced.

In the example provided below, all of the reported slips and trips are marked and their causes (e.g. water or ice on the floor) indicated. You may also wish to include the normal location of key personnel (e.g. first aid staff or members of the firefighting team).

► **Figure 11. Slips and trips mapping in an enterprise kitchen**



Source: United Kingdom Health and Safety Executive (HSE). Slips and trips mapping tool: An aid for safety representatives.<sup>10</sup>

10. Available online at: <https://www.hse.gov.uk/slips/mappingtool.pdf>



## OTHER SOURCES

Information on workplace hazards may also be obtained from suppliers, trade associations and OSH organizations, scientific journals, databases on toxicity and health effects, and international sources of information.

Records of previous accidents and work-related diseases are another valuable source of information. In many countries, the statistics on occupational accidents and diseases at the enterprise level must be shared with workers and/or their representatives).

As stated above, hazards to health are generally less evident than hazards to safety. For this reason, additional care is needed in order to identify them properly (e.g. high levels of noise and exposure to hazardous solvents in the printing industry or to pesticides in agriculture). Psychosocial hazards (e.g. poor interpersonal relations at work or workplace stress) should also be identified and assessed.

## STEP 2: IDENTIFY WHO MIGHT BE HARMED AND HOW

Having identified the hazards, the assessors must identify the persons at risk and determine when, where and how these hazardous agents could harm workers and others.

For each hazard identified in step 1, they should determine and write down who might be harmed and how. This is important since different hazards may require different control measures. The process involves identifying *groups* of workers (e.g. persons working in the repair workshop or cleaning staff) and other persons (e.g. truck drivers, clients and visitors) rather than single individuals who might be exposed and the illnesses or injuries that could result (e.g. shelf stackers may suffer back injury from repeated lifting of boxes).

It is also essential to assess the different hazardous situations that might arise; for instance, in construction work, passers-by could be harmed by falling objects while their unauthorized presence inside the construction site may present different risks (e.g. falling into excavated areas and being hit by suspended loads or moving vehicles).

For each identified group, it is necessary to state how they might be harmed (what injury or ill health might result). If the number of persons exposed is known, it should be indicated (in brackets in the table below).

This sample table illustrates step 2 where the hazard is exposure to wood dust:<sup>11</sup>

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11. It should be borne in mind that the sample risk assessment (above) identified three hazards – exposure to wood dust, machinery and manual handling – in step 1. For each of these hazards, all of the other steps in this risk assessment model must be followed.

Step 1	Step 2	Step 3		Step 4		
What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom	Action by when	Done
Exposure to wood dust	All workers (n. 35) are at risk of respiratory diseases, such as asthma, from inhaling wood dust. Machinery operators (n. 15) are at higher risk of exposure. Hardwood dust exposure can cause cancer, particularly of the nasal cavity (nose area).					
<b>Step 5: Record your findings, monitor and review, update as necessary</b>						

As noted above, some workers have greater safety and health vulnerabilities with new or young workers, pregnant or nursing women and persons with disabilities at particular risk. Moreover, even where exposure to hazardous chemicals presents a risk to all workers, it may affect men and women differently not only for biological/reproductive reasons, but also owing to different patterns of exposure to chemicals at home or elsewhere (e.g. use of solvents for spot cleaning or frequent use of cosmetics) and to the concentration of women in certain economic sectors (agriculture, services and informal work). Pregnant and nursing workers need to be especially protected in order to preserve the health of both mother and child from hazards such as lead and mercury.

### STEP 3: EVALUATE RISKS: IDENTIFY AND DECIDE ON THE SAFETY AND HEALTH RISK CONTROL MEASURES

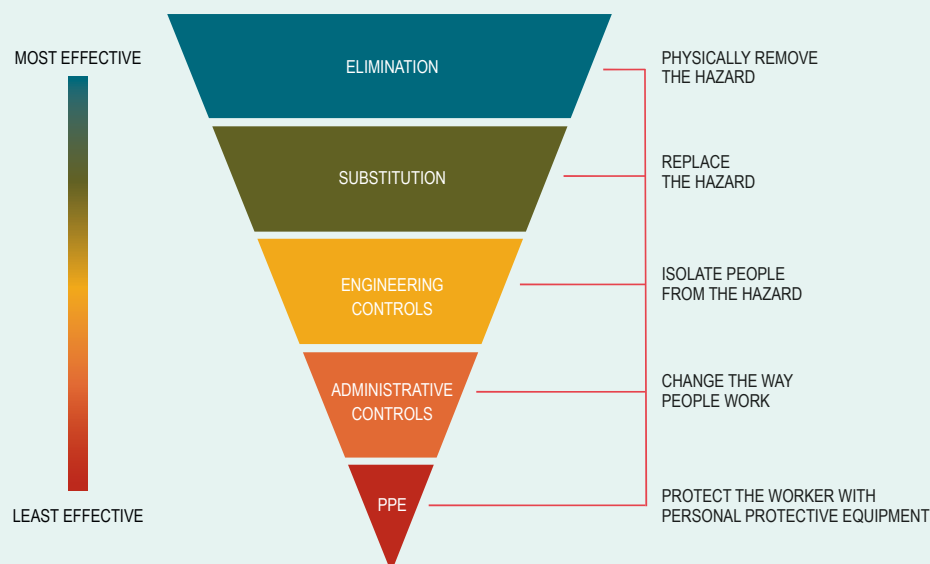
Steps 1 and 2 identified the hazard and the persons at risk. Step 3 assesses *the level of risk* based on the controls currently in place and using the risk matrix. If that level is medium or high, it is unlikely to be acceptable and further controls will be needed in order to reduce it to an acceptable level.

Likelihood	Severity		
	Slightly harmful	Moderately harmful	Very harmful
Low probability	Low risk	Low risk	Medium risk
Probable	Low risk	Medium risk	High risk
Highly probable	Medium risk	High risk	High risk

Many countries' legislation requires employers to make every effort to protect workers and others from harm. This can be achieved by comparing what is being done with good practice.

A logical and effective strategy for reducing the level of risk is the Hierarchy of Controls, which provides guidance to both employers and workers. Its principles are illustrated below. Measures at the top of the triangle are more effective than those at the bottom and should thus be preferred wherever possible.

► **Figure 12. Hierarchy of controls**



This order of priorities should be followed in controlling risks:

- 1: elimination of hazards;
- 2: substitution of hazards;
- 3: engineering, technology, equipment, tools;
- 4: safe work methods, practices, organization, information and training, hygiene and welfare;
- 5: personal protective equipment (PPE).

The reason for deciding on and implementing these risk control measures in the order in which they are listed in the Hierarchy is to identify and decide on *collective* risk controls that protect the work area and all of the workers before considering *individual* risk controls that simply protect the individual who wears or uses them.<sup>12</sup>

As the order or priorities moves towards the bottom of the triangle, the effectiveness and sustainability of the control measures decrease and the degree of participation, supervision, training and surveillance required increases.

**The use of PPE, which is widespread in workplaces, should be the last line of defence against hazards and risks as it is the least effective (bottom of the triangle, in red).**

The following table shows the risk assessment template with step 3 completed, indicating the existing and suggested control measures according to the Hierarchy of Controls.

Step 1	Step 2	Step 3		Step 4		
What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom	Action by when	Done
Exposure to wood dust	All workers (n. 35) are at risk of respiratory diseases, such as asthma, from inhaling wood dust. Machinery operators (n. 15) are at higher risk of exposure.  Hardwood dust exposure can cause cancer, particularly of the nasal cavity (nose area).	<ul style="list-style-type: none"> <li>• Dust is vacuumed regularly.</li> <li>• Good washing facilities and showers are available.</li> <li>• Disposable dust masks are provided and regularly replaced.</li> </ul>	<ul style="list-style-type: none"> <li>• Fit each dust-causing machine with dust extraction equipment (local exhaust ventilation).</li> <li>• Remind staff never to sweep dry wood dust but to use a vacuum cleaner instead.</li> <li>• Ensure that machine operators are properly trained in the use and basic maintenance of dust extraction equipment.</li> </ul>			
<b>Step 5: Record your findings, monitor and review, update as necessary</b>						

12. This principle of eliminating or substituting for the hazard, followed, if these control measures are not applicable or sufficient, by protection of the workplace with individual protection as a last resort, is common to the various control hierarchies used in practice.

We shall now examine in greater detail each of the control measures listed in the Hierarchy of Controls, together with examples of their practical application at the enterprise level.

## RISK CONTROL MEASURES

### Elimination or substitution of hazards

Common sense suggests that *eliminating (getting rid of) a hazard* is the most effective risk control measure. Eliminating or (when elimination is impossible) substituting the hazard effectively reduces the risk of anyone being exposed, and thus of being seriously harmed, to zero or as near to zero as possible. Examples include:

- ▶ farming organically in order to avoid using a toxic pesticide;
- ▶ switching to a less toxic pesticide or substituting a pesticide that would normally be sprayed to one applied in granular form;
- ▶ selecting a less risky substance or work process, e.g. a water- rather than a solvent-based paint;
- ▶ replacing machine tools with intrinsically safer alternatives, e.g. using a pneumatic tool instead of an electrical one;
- ▶ substituting asbestos for safer alternatives (of which there are many);
- ▶ replacing a noisy machine with a quieter one;
- ▶ on tall buildings, redesigning windows so that they can be cleaned from the inside rather than relying on potentially hazardous external access.

If the measures identified can be implemented through elimination, the risk assessment for the hazard in question *stops here*; the risk has been reduced to zero or as close to zero as possible. Consequently, for this hazard only, there is no need to identify, decide on and put into place any further control measures.

If, however, it is determined during the risk assessment that elimination is not possible, it is time to consider other measures, starting with the next lower level of the Hierarchy of Controls (substitution/engineering controls etc.).

### Engineering controls

These come in many forms, depending on the hazard, and have the advantage of providing collective protection not only of the individual, but for all in the work area.

For example, in controlling exposure to substances that are hazardous to health, engineering controls may range from small, on-gun solder fume extractors to dust hoods, fume cupboards, glove boxes, spray booths and, finally, large-scale industrial installations.

All of these controls have the same requirements:

- ▶ collect or prevent access to the hazard;
- ▶ conduct it away from the worker reliably; and
- ▶ keep exposure below the prescribed limits.

Further examples of this type of control measure are:

- ▶ guarding of machinery – if adequate protection is not provided by the manufacturer or if the machine is built to an older standard, improved guarding may be needed;
- ▶ fitting noisy machines with a soundproof enclosure in order to reduce noise levels, even if some risk remains;
- ▶ completely isolating and/or enclosing hazardous processes such as X-ray equipment or the solvent-gluing section of a workshop;
- ▶ placing a handrail around a high work platform;
- ▶ using something as simple as a wheelbarrow or handcart to move heavy loads;
- ▶ placing work surfaces or workbenches at the right height for the persons working there and providing suitable seating;
- ▶ using tools, e.g. spades, shovels and brushes, that are the right length for the users so that they do not have to bend unnecessarily.

Some of these controls are more easily introduced at the design stage of an enterprise/work process. They may be expensive but should be regarded as an investment in OSH.

► **Figure 13. Engineering control measures**



These range from simple and inexpensive, such as the circular saw bench guard on the left, to the expensive spray paint booth on the right (which captures paint overspray with a curtain of water).

The video “Example of machinery guarding and others safety features” shows different types of engineering control.<sup>13</sup>

### Administrative controls

Administrative controls may also be introduced in order to reduce exposure to hazards.

*Safe working methods and practices* are simple, cost-effective ways of controlling workplace risks. Many work accidents and illnesses occur simply because the employer has not thought through and implemented safe work methods, practices and organization and because managers, supervisors and workers are not well informed about or properly trained in correct safety and health procedures. Organizing jobs safely is the responsibility of employers and their managers and supervisors in cooperation with the workforce. Not only are risk control measures often simple and easy to put into operation; they also promote business efficiency.

Examples include:

► **Organizational practices**

Organizing the work may include:

- lengthening rest breaks;

13. ILO: *Machinery, plant and equipment* (web page), <https://www.ilo.org/global/topics/labour-administration-inspection/resources-library/publications/guide-for-labour-inspectors/machinery-plant-equipment/lang--en/index.htm>



- ▶ providing additional relief workers;
- ▶ introducing exercise breaks in order to vary body motions;
- ▶ rotating workers through different jobs;
- ▶ limiting exposure to hazardous operations through scheduling or by reducing employee exposure or implementing other rules;
- ▶ providing effective training programmes.

### ▶ Safe work procedures

Work procedures should meet the requirements of national legislation and, except for the simplest tasks, be written down. This is especially important for maintenance, testing, examination and repair of plant and equipment, transfer of chemicals – including loading and unloading – and identification of the contents of containers, including potential hazards and corresponding precautions.

Work procedures must be developed and followed for all workplace hazards (e.g. operation of machinery, vehicles and work at height) to protect workers against the hazards identified in the risk assessment. Such a procedure should be devised *after* other appropriate measures for eliminating and minimizing risks (such as use of the appropriate chemicals, technology and engineering controls for a specific purpose) have been chosen and should incorporate the most effective use of the control measures provided.

It should be clear who is in charge of the work and the specific tasks to be included (as well as the responsibilities of each person involved where there is an overlap) and to provide for the exchange of necessary information at shift changeover.

Where a hazard's potential risk is very high (e.g. during plant and equipment maintenance requiring entry into a confined space), a formal written procedure, referred to as a "permit-to-work" system,<sup>14</sup> is required. A *permit-to-work form* states exactly what work is to be done, how, when and by whom. The person responsible should assess the work and check for safety at each stage and upon completion, and the workers should sign the permit to show that they understand the hazards and the necessary precautions.

For persons working alone, particular attention should be paid to work procedures and to the arrangements in the event of an emergency with special provisions made where appropriate. Procedures for the emergency shut-down of chemical processes should be established.

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14. These are often needed for maintenance activities and are sometimes referred to as "lock out / tag out procedures" (Lock Out, Tag Out (LOTO) or Lock Out, Tag Out, Try Out (LOTOTO)). Locking and tagging is a safety procedure used in industry and research settings to ensure that dangerous machines are properly shut off and cannot be started up until after the completion of maintenance or repair work.

Frequent checks on work procedures should be conducted at the same time as the checks and reviews on information and training. They should be included in the review of control measures with appropriate action taken. The review should include:

- ▶ changes in staff, materials, equipment, location and operating procedures;
- ▶ procedures followed outside normal working hours;
- ▶ adequacy of supervision;
- ▶ whether systems and practices are followed as intended;
- ▶ arrangements for leaving a job that cannot be finished.

Among other organizational risk control measures, employers need to ensure that workers do not smoke or work under the influence of alcohol or other drugs.

*Emergency prevention, preparedness and response plans* should be established and maintained. They should identify the potential for accidents and emergencies and provide for prevention of the associated OSH risks. The arrangements should be tailored to the size and nature of the enterprise and should include:

- ▶ all necessary information, internal communication and coordination so that everyone will be protected in the event of an emergency at the worksite;
- ▶ notification of and communication with the competent authorities and the local and emergency response services;
- ▶ first aid and medical assistance, firefighting and evacuation of everyone at the worksite; and
- ▶ information and training for all of the enterprise's staff at all levels, including regular emergency prevention, preparedness and response exercises.

For instance, workers in underground mines must be physically able and trained to use emergency shafts. This is not an easy task as the metal stairs may be slippery due to the presence of water, lighting may be limited and escape through these evacuation systems can be very fatiguing. Miners who are physically unable to use the evacuation systems should not be authorized to work underground.

Emergency prevention, preparedness and response arrangements should be established in cooperation with external emergency services and other bodies where applicable.

It is important that all staff, as well as external parties, know how to evacuate the area, where the emergency exits and escape routes are located, and what procedures trained personnel should follow in order to stop processes and equipment safely during an emergency.

## Maintenance

The workplace, equipment, machines, tools and facilities should be maintained, in an efficient state, in efficient working order and in good repair, at all times. Proper maintenance contributes to work safety. Regular (scheduled) maintenance can prevent unexpected failures (e.g. periodic maintenance of fire extinguishers ensures that they can be operated when needed while failure to do so can allow a small fire to spread, causing serious harm to persons and property).

There are two main types of maintenance:

- ▶ planned preventive maintenance involving periodic checks and repairs; and
- ▶ breakdown maintenance (also called corrective or reactive maintenance): making unplanned repairs to workplace facilities or equipment after sudden breakdown or failure. This is usually more hazardous than scheduled maintenance as there may be pressure to complete the repairs quickly so that the work can resume.

Risk assessments tend to consider normal operational conditions. During maintenance, particularly where unplanned, hazardous conditions with potentially serious or even fatal consequences may arise. Thus, maintenance activities must also be risk-assessed to ensure that the appropriate control measures are in place.

Maintenance can expose workers to all kinds of hazards. Great caution is needed in order to prevent, for example:

- ▶ falls from height (e.g. while performing maintenance on roofs or raised parts of machinery);
- ▶ the fall of heavy items (e.g. while lifting heavy loads wrongly owing to time constraints);
- ▶ being trapped or crushed by a moving part or machine (e.g. while entering the action area of a malfunctioning robot);
- ▶ exposure to asbestos (e.g. while removing asbestos panels).

A careful risk assessment must be conducted in order to analyse and control any specific risks since operating under malfunctioning/failure conditions may render the equipment less predictable. The potential severity of maintenance accidents is seen from the fact that in recent years, they accounted for 25–30 per cent of all manufacturing industry fatalities in the United Kingdom.<sup>15</sup> Training and experience are vital for employees and contractors who install and

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15. See the United Kingdom Health and Safety Executive (HSE) guidelines on hazards during maintenance: <https://www.hse.gov.uk/safemaintenance/hazards.htm>

maintain equipment and must be verified (including by checking work permits) before these activities are performed.

### First aid and medical assistance

Accidents can happen even with safety and health measures in place. “First aid” is the immediate care given to victims of accidents or health emergencies (e.g. heart attacks) before healthcare workers arrive.

Every factory should have a well-stocked first aid box and at least one responsible person trained in first aid available during working hours. (National legislation should establish the first aid requirements for enterprises.) Generally speaking, the organization of first aid procedures should take into account, at a minimum, the nature of the enterprise’s activity, the hazards, the number of workers employed, the layout of the plant and the availability of other healthcare resources/facilities. If possible, workplaces should also have an infirmary (sickroom) where injured or ill workers can lie down and be treated in a quiet, safe environment. This room could also be used for nurses’/doctors’ visits and check-ups.

Common accidents such as minor cuts and burns, bruises and sprains may be treated on-site while a clear plan for more serious events should be prepared by occupational health physicians and their collaborators. Examples of cases that require medical or hospital care include:

- ▶ eye injuries: these require specialized attention in hospital since attempted removal of a foreign body (metal or wood chip) from the eye by untrained personnel can cause serious harm, and even loss of vision;
- ▶ extensive/deep burns;
- ▶ deep cuts.

Emergencies such as heart attacks, poisoning and electrical shocks require immediate medical care/hospitalization.<sup>16</sup>

While large enterprises have their own ambulances, smaller ones must make arrangements to ensure the safe transport of injured/ill workers to hospitals and other healthcare facilities.

It is recommended that workers be trained in first aid and basic life support techniques in the event that they are requested to assist healthcare staff, and to prevent well-intentioned actions that can have serious or even deadly consequences if performed by unskilled workers (e.g. moving a worker after a fall from a height may cause or worsen damage to the spine, leading to paralysis and even death). On the other hand, unless the airways are kept free of obstruction by the tongue, an unconscious person may choke to death.

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16. In cases of cardiac arrest (a heart attack causing the heart to stop), treatment (defibrillation) administered within four minutes raises the survival rate from 5 per cent (without treatment) to 40–50 percent. (“First Aid”, in ILO: Encyclopaedia of Occupational Health and Safety, 26 January 2011. Available at: <https://www.iloencyclopaedia.org/part-ii-44366/first-aid-a-emergency-medical-services/item/118-first-aid>)

Many enterprises offer periodic first aid training in order to ensure that they have a number of adequately trained employees on staff.<sup>17</sup> Emergency drills should also be planned with a view to rapid response to an earthquake or fire.

## Housekeeping

Better housekeeping involves, among other things, keeping workplaces tidy and passages clear and wetting dust before sweeping it up.

### ► Figure 14. Examples of housekeeping



Poor housekeeping – a messy workplace is a sign of an inefficient business.



A neat and tidy workplace is a sign of an efficient business.



Do not sweep or use compressed air to clean machines - use an industrial vacuum.

The workplace is the workers' "home" for at least 8 hours a day and should be kept clean and tidy with the cooperation of everyone concerned. Inspectors frequently lament that they find cluttered workplaces, dusty workbenches and piles of boxes blocking passageways, doors and windows. Not only are these bad practices unhygienic (where materials pile up, pests can thrive);

17. The Red Cross offers free first-aid applications: <https://www.redcross.org.uk/first-aid/first-aid-apps#app>

they also hinder the normal flow of production and present serious risks of fire, entrapment inside buildings in the event of an emergency and limited air flow. Conversely, workplaces that introduce regular cleaning programmes using industrial vacuum cleaners not only reduce dust and dirt in the workplace but improve the general working environment and workers' health. They also:

- ▶ reduce maintenance costs since machines remain clean for longer periods;
- ▶ reduce absenteeism through sickness;
- ▶ give the factory a competitive advantage through increased productivity.

**Brief Activity:** Do a walk-through of your enterprise and write down the materials that should be stored properly and safely. Note whether any spaces and surfaces need to be cleaned by removing dust or debris. Keep the whole plant in good order every day and train new workers to do so.

## PERSONAL HYGIENE PRACTICES AND FACILITIES

Adequate washing facilities should be provided so that workers can maintain personal hygiene, including by washing their hands. Good hygiene limits exposure to workplace hazards and the spread of hazardous chemicals and infectious agents.

Washing facilities should be easily accessible, situated so that they are not contaminated by workplace activities and be appropriate to the workers' needs. Sinks should be large enough for workers to wash their forearms and taps should be turned on and off with a single movement (preferably foot-operated).

Changing rooms should be provided where protective clothing is used or there is a risk of contamination of outerwear by hazardous substances (in the past, the families of asbestos miners caught asbestos-related diseases, including cancer, from exposure to fibres on these workers' clothes). Changing facilities should be situated and designed so as to prevent the spread of contamination from protective to personal clothing and from one facility to another. Separate rooms for men and women should be provided.

To reduce the risk of ingesting hazardous substances, workers should eat, chew, drink or smoke only in designated facilities (e.g. canteens/smoking areas). In order to avoid contamination of food and beverages, canteens and rest areas should not be placed close to workshops. They should be kept clean and particular attention should be paid to pest control since leftover food can attract insects and mice. To prevent contamination, any materials used during food preparation should be stored in closed cabinets after use.

Water, sanitation and hygiene are fundamental in maintaining safety and health, particularly during infectious disease outbreaks such as the COVID-19 pandemic. Equal access to and availability of safe drinking water and proper sanitation services are far from achieved at the global level<sup>18</sup> and the workplace is sometimes the only place where workers can find safe drinking – and even running – water.

Toilets must be kept clean and well maintained, have a constant supply of hot/warm and cold running water, soap, hand sanitizer and toilet paper and, wherever possible, be equipped with hand dryers or paper towels since fabric towels, particularly when shared, can spread infection. The number of toilets should be proportional to the workforce and they should be easily accessible to all workers, including those with disabilities. Where possible, there should be separate facilities for women and men and in any case, privacy must be guaranteed (e.g. through the ability to lock the door). Toilets should have proper ventilation and lighting and a location away from potential sources of contamination and should be available to everyone at the enterprise, including catering staff, visitors and truck drivers. On construction sites or in rural settings, portable toilets should be available.

A workplace should be a safe, healthy environment and factors such as *temperature, humidity, ventilation, and lighting* play an important role. Clearly, environments where these factors are not optimal present additional risks for workers and can lead to accidents. Employers are responsible for ensuring safe and healthy environmental conditions, including through the use of natural light and ventilation where possible. Where natural ventilation is not sufficient, adequate systems (e.g. fans or air conditioning units) should be installed and properly maintained (by changing filters and verifying air flow). Work that generates dust or fumes may require localized exhaust ventilation or other engineering controls, such as water-based systems. Employers should ensure that inspections include noise, vibration and hazardous factors (not only obvious ones, such as chemicals, but also less obvious ones, such as radiation).

## SAFETY SIGNAGE

Employers should post safety signs where there is a significant risk that cannot be avoided or controlled through safe systems of work or in any other way. These signs must comply with national regulations and be placed in visible and appropriate places, including on machinery. Because they must be understood by all, their text should be in the official language and translated into local languages if necessary.

Visitors and any other external persons with access to the enterprise should be informed of the meaning of safety signage and the need to respect it; perhaps an explanatory leaflet can be distributed. The pictures should be clear and both text and pictures should be readable from a distance since getting too close to machinery in order to read them may present a life-threatening risk of being hit or crushed.

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18. ILO: *Employment-Intensive Investment Programme (EIIP) Guidance: Technical note on water, sanitation and hygiene (WASH) interventions in response to COVID-19*, 14 May 2020. Available at: [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/documents/publication/wcms\\_744731.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_744731.pdf)



Safety signs must be followed in all places and activities where persons are employed. Where necessary, employers should:

- ▶ use signs to regulate road traffic in workplaces;
- ▶ maintain the safety signs that they provide;
- ▶ provide training on all safety signs posted, explain new and unfamiliar signs to their workers and tell them what to do when they see one.

Workers should follow the instructions indicated by the safety signs and refrain from removing, ignoring or covering them.

The instructions on safety signs also give a clear warning to external parties (e.g. delivery workers and customers). Their use and display in the workplace should be assessed through a walk-through and careful recording of existing safety signs, posters, markings and tags. Any warnings of hazards that have been eliminated should be removed since unnecessary safety signs can distract from those that are relevant.

Their size, colour, image and wording (usually: DANGER, WARNING or CAUTION) must comply with existing national regulations in order to ensure that they are reasonably visible from a distance (usually at least 1.5–2 metres for general safety signs) when correctly installed and convey a clear message.

▶ **Figure 15. Examples of safety signs**



## EDUCATION AND TRAINING

The ILO strongly advocates OSH education and training<sup>19,20</sup> not only at the enterprise level, but in the general education system.

This approach is highly effective in increasing the knowledge and skills of workers and employers and promoting awareness of the importance of safety and health for the world of work.

In many countries that have adopted ILO standards, employers are legally required to provide OSH training, which has produced concrete, measurable results for workers.

OSH education and training can improve workers' safety and health at work. This study of 300 harvesting forestry workers in South Africa shows a significant decrease in the number of occupational injuries following the introduction of OSH education and training programmes in 2005; in the graph on the right, the purple bars indicate the number of injuries per year.

► **Figure 16. Lost time injuries of a forestry company before and after annual safety training that commenced in 2005 (2003-2013)**



Source: Hloni Nkomo, MHSc, Ivan Niranjana, DTech, and Poovendhree Reddy, PhD. *Effectiveness of Health and Safety Training in Reducing Occupational Injuries Among Harvesting Forestry Contractors in KwaZulu-Natal*. Continuing education. *Workplace Health & Safety*, vol. 66, N°10.

19. Convention No. 155 requires Member States to take measures to promote the inclusion of OSH education at all levels of education and training.

20. The ILO Global Commission on the Future of Work calls for “the formal recognition of a universal entitlement to lifelong learning and the establishment of an effective lifelong learning system” (*Work for a brighter future* (Geneva, 2019), p. 20. Available at: [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms\\_662410.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_662410.pdf)).

The advantages of education and training include psychosocial benefits such as motivation, willingness to participate in OSH activities, safer/healthier behaviour and organization of work.

To be successful, training must be supported by employers and managers and embedded into the business. Workers and trade unions should be actively involved and contribute through, among other things, the experience of senior workers who can act as mentors or trainers. The content and materials must be tailored to the specific productive sector and its risks, be balanced in terms of theory and practice and be presented through a participatory approach.

Training should be delivered in a way that is easily understandable and accessible by all participants (in the local languages where necessary and through mobile units in remote rural areas).

Training programmes should:

- ▶ cover all members of the enterprise;
- ▶ be conducted by competent persons;
- ▶ include effective, timely initial and refresher training at appropriate intervals;
- ▶ include the participants' evaluation of their own comprehension and retention of the training;
- ▶ be reviewed periodically; the review should include representatives of the safety and health committee, where one exists, and the training programmes should be modified as necessary to ensure their relevance and effectiveness;
- ▶ be documented where appropriate in light of the size and nature of the enterprise's activity.

Training should be provided to all participants at no cost and should take place during working hours. This ensures that employers fulfil their training responsibilities without placing a burden on their employees in terms of time and money.

### **INTERNAL SUPERVISION BY EMPLOYERS**

Employers must provide adequate and appropriate supervision of their workers.

Supervisors need to know what is expected from them in terms of safety and health. They need to understand the employer's safety and health policy, where they fit in and how the employer wants safety and health to be managed. They may therefore need training in the specific hazards of the enterprise's processes and how the risks are expected to be controlled.

Supervisors need to ensure that workers in their charge understand the risks associated with the work environment and the measures used to control them. New, inexperienced or young persons, as well as those whose first language is not that of the country, are likely to need more supervision than others.

Employers should ensure that their workers know how to raise concerns and that supervisors are familiar with the potential problems arising from unfamiliarity, inexperience and communication difficulties, and supervisors should verify that the risk control measures used are up-to-date and are properly used, maintained and monitored. Employers should have arrangements in place to check that the work of contractors is being done safely.

Effective supervision can help employers to monitor the effectiveness of the training received and to determine whether workers have the necessary capacity and competence to do the job. Where supervisors see a lack of compliance with OSH provisions, they should take action to remediate the situation; for example, a welder working without a protective shield is both putting his or her own safety and health at risk and compromising the employer, who may incur healthcare and raised insurance costs and loss of reputation and company image as a result of the worker's failure to comply.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

The last level of risk control is PPE: individual equipment that offers protection from workplace hazards and reduces the risk of being harmed by them. It can be designed to protect various parts of the body in the form of, for example, helmets, safety goggles, face masks, respirators, earmuffs, aprons, harnesses, gloves, safety shoes and boots.

As stated above (under the Hierarchy of Controls), PPE should only be provided where other, more effective risk control measures are not sufficient to adequately control the risk. In such cases, employers are responsible for providing workers with individual means of protection against a specific hazard (such as noise, dust or a chemical).

PPE must comply with national legislation and meet national or, where relevant, international standards. It should be *suitable* and provide effective protection (e.g. safety shoes to protect kitchen staff in the food industry from falling objects, such as large metal pots and appliances, and prevent slips and burns from hot liquid spills). It should be *correctly sized* for the user (e.g. a selection of protective glove sizes should be offered in order to fit all workers, including women), provided *free of charge* to the worker, and be adequately maintained and replaced as required.

Workers must receive training in the proper use, maintenance, disposal and storage of PPE. Any defects (such as holes in insulating gloves for electrical work) should be reported immediately to the employer or supervisor since they can lead to serious harm if ignored or overlooked.

Remember that PPE should be viewed as the *last* line of defence against hazards.

► **Figure 17. Workers wearing various types of PPE**



#### **STEP 4: RECORD WHO IS RESPONSIBLE FOR IMPLEMENTING WHICH CONTROL MEASURES AND THE TIME FRAME**

In this phase, the safety and health risk control measures selected in Step 3 should be implemented by the employer and responsibility for their implementation assigned, usually to a supervisor or manager or to the enterprise's safety and health committee. A reasonable time frame for implementation should be established and once the control measures are in place, the date should be recorded for future reference since, among other things, it may be requested by inspectors in order to verify compliance with regulations.

To summarize, the following must be clearly established and recorded:

- the person who will take action at the enterprise;<sup>21</sup> that person's full name and job title should also be recorded in the risk assessment table (e.g. Manager: Margaret Chang; Supervisor: Robert Achebe);

21. Employers normally assign these tasks to managers or supervisors, who should have adequate OSH knowledge and skills.

- ▶ the target date by which the action will be taken –e.g. 20/12/2020-;
- ▶ the date on which the risk control measure was implemented: e.g. 01/11/2020.

Step 1	Step 2	Step 3		Step 4		
What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom	Action by when	Done
Exposure to wood dust	All workers (n. 35) are at risk of respiratory diseases, such as asthma, from inhaling wood dust. Machinery operators (n. 15) are at higher risk of exposure  Hardwood dust exposure can cause cancer, particularly of the nasal cavity (nose area)	<ul style="list-style-type: none"> <li>• Dust is vacuumed regularly</li> <li>• Good washing facilities and showers are available</li> <li>• Disposable dust masks are provided and regularly replaced</li> </ul>	<ul style="list-style-type: none"> <li>• Fit each dust-causing machine with dust extraction equipment (local exhaust ventilation)</li> <li>• Remind staff never to sweep dry wood dust but to use a vacuum cleaner instead</li> <li>• Ensure that machine operators are properly trained in the use and basic maintenance of dust extraction equipment</li> </ul>	Manager M. Chang	20/11/2020	15/09/2020
				Supervisor R. Achebe	01/10/2020 (immediately)	01/10/2020
				Manager M. Chang	31/12/2020	30/09/2020

**Step 5: Record your findings, monitor and review, update as necessary**

## STEP 5: MONITOR AND REVIEW YOUR RISK ASSESSMENT AND UPDATE WHEN NECESSARY

Each step of the risk assessment and the relevant information must be recorded and readily available to workers, supervisors and OSH inspectors. The sample table provided above can serve this purpose in a simple manner.

In practice, a risk assessment will identify many hazards for action. Some that are common to different types of enterprises are chemical exposure; noise; slips, trips and falls; vehicles;



electrical problems; and fire. As stated above, risk assessments should be tailored to the needs of each enterprise.

Keeping risk assessments on file shows that all significant hazards have been identified and addressed, taking the number of persons concerned and their vulnerabilities into account, and that the control measures are adequate and the residual risk low. This written record is useful for employers, supervisors, workers and inspectors. It indicates the commitment of everyone at the enterprise to providing a safe and healthy working environment in accordance with the law.

### MONITORING THE EFFECTIVENESS OF THE CONTROL MEASURES

It is also important to monitor the effectiveness of risk control measures and ensure that they are maintained. Were the improvements identified during the risk assessment successful, i.e., for each of the hazards identified, were the risks reduced and the target group or groups better protected? Staff members who conduct workplace inspections should verify whether workers are using the controls identified during the risk assessment as already in place or needed. Not only workers and members of the safety and health committee, but also managers and supervisors should conduct this monitoring. Its frequency will depend on the inspection's findings; if effective control measures are in place and the workers understand the hazards and risks, the frequency of monitoring can be reduced. Conversely, if no controls are being used and the enterprise has untrained workers, monitoring will need to occur more frequently.

It is useful to measure the effectiveness of control measures both quantitatively and qualitatively. This can be done through the use of indicators.

“Progress indicators” are measurable, assessable data that make it possible to judge the effectiveness of an enterprise's OSH policy and to see whether its OSH goals are being met. They can be derived from various sources, including occupational accident and disease records, number of completed/revised risk assessments, workplace inspections and public statistics. This type of indicator must be defined and measured during the initial monitoring exercise, and then at intervals so that changes can be tracked over time (e.g. trends in occupational accidents after the introduction of regular OSH training for workers). To be meaningful, progress indicators must be clearly related to their subject, measure both quality and quantity, cover performance in different sectors and be based on good, reliable data; for example, if accidents or diseases are underreported, the data will not reflect reality and the extent of the problem will be underestimated.

By comparing the data over a period of time, the risk assessment team can get an idea of how the enterprise is controlling its risks. It is recommended that the team conducting the assessment set realistic objectives, such as training all new workers within a given time frame, as this will facilitate the development of related indicators (e.g. the number of new workers who achieved the top score when tested on the enterprise's current – including psychosocial and musculoskeletal – risks). Possible subjects of the indicators include workers, the workplace, machinery and working procedures, workplace inspections, control measures, compliance with the law, safety information provided to visitors and voluntary standards.



Other key indicators to track are the existence of a joint worker–management OSH committee and/or policy, the number of risk assessments, workplace inspections, unsafe acts, the condition of emergency exit routes, the use of PPE, accidents and near misses, and investigations thereof.

## REVIEWING AND UPDATING THE RISK ASSESSMENT

Risk assessments are not one-time activities; they must be reviewed and, if necessary, amended at least annually and more frequently in some cases (for instance, whenever new equipment, substances and/or procedures are introduced).

## HEALTH SURVEILLANCE

Occupational health physicians, nurses and other trained workplace health personnel should work actively to promote workers’ health and detect and/or treat occupational injuries and diseases. Health surveillance activities include medical visits (pre-assignment, periodic, as needed, upon resumption of work after a long absence for health reasons and after leaving work) and specific testing and instrumental examinations when needed. Employers are responsible for ensuring that workers receive the medical services required by law.

The results of medical examinations and all other medical information and data are strictly confidential and must not be used to discriminate against a worker. They may, however, be made available to workers and their representatives in a collective, anonymous (de-identified) form for informational purposes (e.g. type and number of occupational accidents per year). Medical records must be kept in a locked place and protected at all times, including when data are processed or stored on computers or digital media. They must be kept for future reference and workers must have the right to access their own records. Occupational medical records are also valuable for use in study and research.

There is no specific template for step 5, but having all five steps recorded and updated is proof of an enterprise’s commitment to improvement in OSH.

Step 1	Step 2	Step 3		Step 4		
What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom	Action by when	Done
<b>Step 5</b>	<b>Monitor and review the risk assessment and update it when necessary</b>					

## ▶ 4. OSH MANAGEMENT SYSTEMS

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Risk assessment is a fundamental pillar of OSH at the enterprise level. Without commitment on the part of employers, managers and workers and a clear picture of the hazards, the risks and the efficacy of control measures, any progress will be sporadic and unlikely to achieve sustained improvement. Risk assessment introduces a systematic approach based on measurably effective action that is beneficial not only to safety and health, but also to productivity.

The ILO has issued guidelines for the promotion of OSH at the national and enterprise levels. These are of direct relevance to SMEs and are intended to:

- (a) provide guidance regarding the integration of OSH management system elements into the [enterprise] as a component of policy and management arrangements; and
- (b) motivate all members of the [enterprise], particularly employers, owners, managerial staff, workers and their representatives, in applying appropriate OSH management principles and methods to continually improve OSH performance.<sup>22</sup>

### ▶ 4.1 OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT SYSTEMS (OSHMS): DEFINITION AND GOALS

#### WHAT IS AN OSHMS?

Management systems are often used in decision-making processes both in business and in daily life, e.g. during the purchase of equipment, expansion of a business or selection of new furniture. The establishment of an OSHMS is based on OSH criteria, standards and performance. It seeks to provide a logical, stepwise method for assessing and improving performance in the prevention of workplace incidents and accidents through the effective management of hazards and risks in the workplace and is used to *decide* what needs to be done and how best to do it; *monitor* progress toward the established goals; *evaluate* the steps taken; and *identify* areas for improvement. It can be adapted to changes in the enterprise and to legislative requirements as needed.

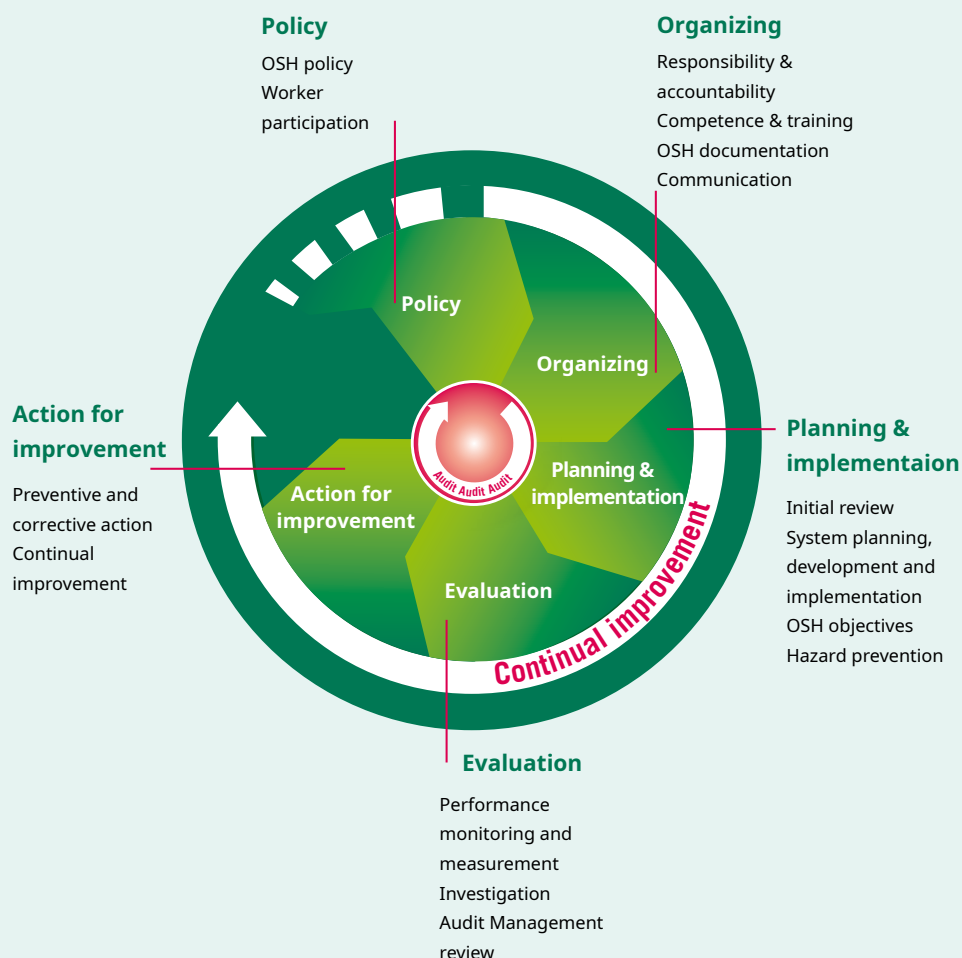
OSH, including compliance with national laws and regulations, is the responsibility and duty of the employer,<sup>23</sup> which should show strong commitment to OSH activities at the enterprise level and make appropriate arrangements for the establishment of an OSHMS. The primary elements of this system are illustrated below.

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22. ILO: *Guidelines on occupational safety and health management systems, ILO-OSH 2001* (web page), section 1: "Objectives". Available at: [https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/WCMS\\_107727/lang--en/index.htm](https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/WCMS_107727/lang--en/index.htm)

23. Workers also have responsibilities, as stated in Article 19(a) of Convention No. 155 "[W]orkers, in the course of performing their work, co-operate in the fulfilment by their employer of the obligations placed upon him".

► **Figure 18. The ILO Guidelines on OSHMS: The continual improvement cycle**



An OSHMS is a logical toolbox that is flexible and can be tailored to the size and activity of the enterprise and be focused on all hazards and risks associated with such activity. The OSHMS approach ensures that:

- prevention and protection measures are implemented efficiently and consistently;
- policies are established;
- commitments are made;
- all workplace factors are considered when assessing hazards and risks;
- management and workers are involved in the process at their respective levels of responsibility.

## ► 4.2 THE ENTERPRISE OSH POLICY

To ensure acceptance of the OSH policy's objectives, the employer should establish it through a process of information exchange and discussion with the workers. The policy should be:

- (a) specific to the [enterprise] and appropriate to its size and the nature of its activities;
- (b) concise, clearly written, dated and made effective by the signature or endorsement of the employer or the most senior accountable person in the [enterprise];
- (c) communicated and readily accessible to all persons at their place of work;
- (d) reviewed for continuing suitability;
- (e) made available to relevant external interested parties, as appropriate.<sup>24</sup>

It should also include, at a minimum, the following key principles and objectives to which the [enterprise] is committed:

- (a) protecting the safety and health of all members of the [enterprise] by preventing work-related injuries, ill health, diseases and incidents;
- (b) complying with relevant OSH national laws and regulations, voluntary programmes, collective agreements on OSH and other requirements to which the [enterprise] subscribes;
- (c) ensuring that workers and their representatives are consulted and encouraged to participate actively in all elements of the OSH management system;
- (d) continually improving the performance of the OSH management system.

The OSHMS should be compatible with or integrated into other management systems in the [enterprise].<sup>25</sup>

The OSH policy should be clearly written and appropriate to the enterprise for which it is intended and should be circulated so that every employee has the opportunity to become familiar with it.<sup>26</sup> Verbal communication should be used where required by a worker's literacy or visual function. The policy should also be prominently displayed throughout the workplace to serve as a constant reminder to everyone.

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24. ILO: *Guidelines on occupational safety and health management systems*, section 3.1: "Occupational safety and health policy".

25. Ibid.

26. A sample policy statement by the United Kingdom HSE is available at: <https://www.hse.gov.uk/simple-health-safety/policy/example-policy-statement.pdf>

## A GENDER-SENSITIVE APPROACH

Recognizing diversity, including gender differences, in the workforce is vital in ensuring the safety and health of both men and women workers. While some progress has been made in this area, the ILO believes that more can and should be done. Gender differences should be considered during the development of OSH policies and prevention strategies.

A gender-sensitive approach acknowledges and makes visible the differences between men and women workers so that OSH risks can be identified and effective solutions implemented; because of the different jobs that they do and their different societal roles, expectations and responsibilities, they may be exposed to different physical and psychological risks in the workplace and may thus require different control measures.

This approach also recognizes that the sexual division of labour, biological differences, employment patterns, social roles and social structures all contribute to gender-specific patterns of occupational hazards and risks that must be taken into account if OSH policies and prevention strategies are to be effective.

## WORKERS' PARTICIPATION AND THE ESTABLISHMENT OF A JOINT SAFETY AND HEALTH COMMITTEE (JSHC)

Workers' participation is a central element of the OSHMS. Employers should ensure that workers and their safety and health representatives are consulted, informed and trained in all aspects of OSH, including emergency arrangements, and that they have the time and resources to participate actively in the organization, planning and implementation, evaluation and improvement of the system.

To that end, employers should ensure the establishment and efficient functioning of a joint safety and health committee (JSHC)<sup>27</sup> and should recognize their workers' safety and health representatives in accordance with national laws and practice. JSHCs are advisory bodies comprising an equal number of management and workers' representatives with the common goal of OSH maintenance and promotion for the entire workforce. They should involve OSH specialists where available and/or mandated by law, and their members should normally be the workers and managers with the greatest knowledge of workplace hazards and risks, as well as OSH principles and regulations. The JSHC provides an opportunity for workers to participate actively in the enterprise's OSH policies and decisions. Records of its meetings and decisions should be kept and it should meet and conduct workplace inspections on a regular basis.

The JSHC is a participatory mechanism and an expression of commitment to OSH. Its existence is associated with a lower incidence of occupational accidents.

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27. The ILO *Guidelines on occupational safety and health management systems* define a "safety and health committee" as "[a] committee with representation of workers' safety and health representatives and employers' representatives established and functioning at organization level according to national laws, regulations and practice" (p. 19).

Studies have shown that participatory workplace approaches result in improved OSH performance through OSHMS, particularly in unionized workplaces. Full worker participation is strongly promoted in all ILO standards on OSH.<sup>28</sup>

OSHMS cannot function properly without effective social dialogue within the JSHC and other mechanisms (e.g. collective bargaining). Workers and their representatives should have an opportunity to participate fully in the management of OSH at the enterprise level through direct involvement and consultation. An OSHMS cannot be successful unless all stakeholders are given well-defined responsibilities for its operation.

For a JSHC to be effective, it is important that adequate information and training are provided and effective social dialogue and communication mechanisms established and that workers and their representatives are involved in the implementation of OSH measures. External stakeholders (e.g. regulators, subcontractors, neighbouring communities and organizations, clients and consumers) should also be involved in the implementation of information and communication measures.

OSH training at all levels, from managers to workers, is a major factor in the implementation of any OSH programme. This training should be provided on an ongoing basis in order to ensure knowledge of the system, and instructions should be updated to reflect any changes in the enterprise.

## ORGANIZING

*Responsibility and accountability:* The employer should have overall responsibility for the protection of workers' safety and health, provide leadership for OSH activities and ensure that OSH is a line management responsibility that is known and accepted at all levels.

*Competence<sup>29</sup> and training:* The OSH competence requirements should be defined by the employer and arrangements should be established and maintained to ensure that the relevant persons are competent to fulfil their safety and health responsibilities.

*Documentation:* OSH documentation should be established, maintained, reviewed and revised as necessary in light of the size of the enterprise and the nature of its activities.

These documents should be communicated and readily accessible to all appropriate or affected workers. They may cover the OSH policy and assigned responsibilities; significant workplace hazards and risks and arrangements for their prevention and control (risk assessments); records of OSH activities (workplace inspections); work-related injuries, ill-health, disease, and incidents; national OSH laws and regulations; health surveillance data; records of exposure and monitoring of the working environment; and technical and administrative procedures, instructions and other relevant internal guidance documents.

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28. Particularly in Convention No. 155, the Occupational Safety and Health Recommendation, 1981 (No. 164) and the ILO *Guidelines on occupational safety and health management systems*.

29. The ILO *Guidelines on occupational safety and health management systems* define a competent person as "a person with suitable training, and sufficient knowledge, experience and skill, for the performance of the specific work" (p. 19).

*Communication:* Arrangements and procedures for receiving, documenting and responding appropriately to internal and external communications related to OSH; ensuring the internal communication of OSH information between relevant levels and functions in the workplace; and ensuring that the concerns, ideas and input of workers and their OSH representatives are received, considered and addressed should be established and followed.

## PLANNING AND IMPLEMENTATION

*Initial review:* The OSHMS management system and arrangements should be evaluated through an initial review in order to provide a baseline for measuring continuous improvement. Where no such system exists, the initial review should serve as a basis for its establishment. The review should be carried out by competent persons in consultation with workers and/or their representatives as appropriate.

*System planning, development and implementation:* The purpose of planning is to create an OSHMS that supports:<sup>30</sup>

- ▶ at a minimum, compliance with national laws and regulations;
- ▶ the elements of the [enterprises] OSH management system; and
- ▶ continuous improvement in OSH performance.

Arrangements for adequate and appropriate OSH planning should be based on the outcome of the initial review, subsequent reviews or other available data. These planning arrangements should facilitate the protection of safety and health at work and cover the development and implementation of all aspects of the OSHMS.

*Occupational safety and health objectives:* On the basis of the OSH policy and the initial or subsequent reviews, measurable OSH objectives and requirements specific to the workplace should be established. They should be consistent with national laws and regulations, focused on continuous improvement in workers' OSH protection, realistic and achievable, documented and communicated to all relevant functions and levels, periodically evaluated and updated as necessary.

Hazards and risks to workers' safety and health should be identified, risk assessments conducted on an ongoing basis and prevention and protection measures implemented following the Hierarchy of Controls. Hazard prevention and control procedures or arrangements should:

- ▶ be adapted to the hazards and risks encountered in the enterprise;
- ▶ be reviewed on a regular basis and modified as needed;

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30. ILO: *Guidelines on occupational safety and health management systems*, section 3.8: "System planning, development and implementation".



- ▶ comply with national laws and regulations and reflect good practice;
- ▶ reflect the current state of knowledge, including information and the reports of labour inspectorates, occupational safety and health services and other bodies as appropriate.

## EVALUATION

Procedures for monitoring, measuring and recording OSH performance on a regular basis should be developed, established and periodically reviewed. Responsibility and authority for monitoring at different levels of the management structure should be allocated and management held accountable.

Investigations of work-related injuries, ill health, diseases and incidents and their impact on OSH performance should identify and document any failures in the OSHMS. They should be carried out by competent persons with the appropriate participation of workers and their representatives. Where a JSHC exists, it should review the outcome of the investigation and make appropriate recommendations. The investigation data and recommendations should then be communicated to the appropriate parties for corrective action, included in the management review and considered for continuous improvement.

## AUDITING

“Auditing” is the monitoring of a process by a competent independent person or team. Periodic audits help to determine whether the OSHMS and its elements are in place and whether they are adequate and effective in protecting workers’ safety and health and preventing incidents. They provide a means of measuring the system’s performance over time and propose corrective action and new objectives for further improvement.

Arrangements for conducting periodic audits of each element of the OSHMS should be established in order to assess the overall performance and effectiveness of the system. An audit policy and programme, including a designation of auditor competency, the audit’s scope, the frequency of audits, audit methodology and reporting, should be developed.<sup>31</sup>

## PROGRESS INDICATORS<sup>32</sup>

OSH progress indicators should not be limited to those that measure trends in occupational accidents and diseases or the presence and management of hazards and risks at the enterprise. They should also measure aspects of the OSHMS, such as the establishment and performance

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31. A sample auditing template (“Safety and health program audit tool”) used by the United States of America Department of Labour Occupational Safety and Health Administration (OSHA) is available at: [https://www.osha.gov/shpguidelines/docs/SHP\\_Audit\\_Tool.pdf](https://www.osha.gov/shpguidelines/docs/SHP_Audit_Tool.pdf)

32. See above under Monitoring the effectiveness of control measures.

of the JSHC (e.g. the number of regular meetings and decisions taken), updating of training materials, compliance issues resolved, health promotion programmes, observance of voluntary safety standards, and awareness campaigns.

Management reviews should be conducted periodically in order to evaluate the overall OSHMS strategy and determine whether it meets planned performance objectives and workplace needs. These reviews should be based on data collected and action taken during the period under consideration and on identification of the aspects and priorities that should be modified in order to improve performance and achieve objectives.

### ► 4.3 TOWARDS CONTINUOUS IMPROVEMENT IN OSH

**Preventive and corrective action:** Arrangements for preventive and corrective action resulting from OSHMS performance monitoring and measurement, audits and reviews should be established and maintained. Where evaluation shows that prevention and protection measures are inadequate, the work activity should be reassessed and corrective measures taken (following the Hierarchy of Controls), completed and documented in a timely manner.

Arrangements for continuous improvement of the OSHMS and its various elements should take into account the system's objectives and the information and data gathered under each of its elements, including the outcomes of assessments, performance measurements, investigations, audit recommendations and management reviews; changes in national laws, regulations and collective agreements; new information; significant technical or administrative modifications in workplace activities; and the outcomes of health protection and promotion programmes. OSH processes and performance should also be compared with other efforts to improve safety and health performance.

OSHMS are a logical and useful tool for the promotion of continuous improvement in OSH performance at the enterprise level. Mechanisms for promoting their application vary from legislative requirements to voluntary adoption. Key elements of their successful application include management commitment and active worker participation in the joint implementation process. More and more countries are integrating OSHMS into their national OSH programmes in order to promote the development of sustainable mechanisms for OSH improvement in enterprises.

As awareness of the need to improve OSH for all spreads at the international level, including through global supply chains,<sup>33</sup> a new vision is challenging the old belief that occupational accidents and diseases are inevitable. The Vision Zero Fund<sup>34</sup> works towards the goal of zero fatal and serious work-related injuries and diseases by improving OSH practices and conditions.

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33. The term "global supply chains" refers to the cross-border organization of the activities required to produce goods or services and bring them to consumers through inputs and various phases of development, production and delivery.

34. The ILO Vision Zero Fund "brings together governments, employers' and workers' organizations, companies, and other stakeholders to jointly advance towards the vision of achieving zero severe and fatal work-related accidents, injuries and diseases in global supply chains" (<https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/departments-and-offices/governance/labadmin-osh/programmes/vzf/lang--en/index.htm>).

► **Figure 19. Challenging the old belief that occupational accidents and diseases are inevitable**



## ▶ LIST OF IDEAS FOR IMPROVEMENT

Risk assessment	
1.	
2.	
3.	
4.	
5.	

Setting up an occupational safety and health management system (OSHMS) in the workplace	
1.	
2.	
3.	
4.	
5.	

- ▶ Identify urgent, high-risk issues.
- ▶ Identify “low-hanging fruit” by asking:
  - ▶ How likely is this improvement to be achieved?
  - ▶ Can I start implementing it immediately?
  - ▶ Can I implement it without a major investment?
  - ▶ Will initial results be visible within a month?
- ▶ For each improvement idea, award 0, 1 or 2 stars\* for each of the above questions.
- ▶ Pick six to ten improvements.
- ▶ Discuss and agree with your whole team.
- ▶ Use the stars to get an indication of “quick win” improvements.
- ▶ Record priority improvement ideas and the necessary action using the enterprise Improvement plan (EIP) template (see below).

### ▶ SAMPLE ENTERPRISE IMPROVEMENT PLAN (EIP)

Ref.	Project and sub-activities	Person responsible	Progress indicator	Start date	Scheduled completion date	Actual completion date	Comments
<b>Establish a joint safety and health committee (JSHC)</b>							
1.1	Arrange meetings of section union representatives with three directors to establish the membership of the JSHC	Personnel Director	<ul style="list-style-type: none"> <li>Two meetings held and decisions recorded</li> <li>At least 90% attendance at each meeting</li> </ul>	10/1/11	10/3/11	26/2/11	Union represen-tatives to hold section meetings, seeking interested workers from each section
1.2	Identify budget and work-time allocation for committee work	Personnel Director	A written proposal presented to a meeting of union representatives and directors	10/1/11	10/3/11	21/2/11	Proposals being considered and to be finalized at a future meeting
<b>Risk Assessment</b>							
2.1	Identify a factory section for pilot risk assessment	Production manager/ OSH supervisor	<ul style="list-style-type: none"> <li>Two meetings held and decisions recorded</li> </ul>	10/1/11	12/1/11	14/2/11	Report to go to the next meeting of directors and union represen-tatives
2.2	Complete risk assessment for production line	Production manager/ OSH supervisor	Risk assessment template complete and action taken	15/1/11	28/1/11	21/2/11	

Examples

## ▶ USEFUL LINKS

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International Labour Office (ILO). 2014. *A 5 step guide for employers, workers and their representatives on conducting workplace risk assessments* (Geneva). Available at: [https://www.ilo.org/global/topics/safety-and-health-at-work/resources-library/publications/WCMS\\_232886/lang--en/index.htm](https://www.ilo.org/global/topics/safety-and-health-at-work/resources-library/publications/WCMS_232886/lang--en/index.htm).

----. *Action Checklist: Fire Safety* (Geneva). Available at: [https://www.ilo.org/wcmsp5/groups/public/--ed\\_protect/---protrav/---safework/documents/publication/wcms\\_194782.pdf](https://www.ilo.org/wcmsp5/groups/public/--ed_protect/---protrav/---safework/documents/publication/wcms_194782.pdf).

----. 2012. *Encyclopaedia of Occupational Health and Safety* (Geneva). Available at: <https://iloencyclopaedia.org/>.

----. 2013. *Training package on workplace risk assessment and management for small and medium-sized enterprises* (Geneva). Available at: [https://www.ilo.org/global/topics/safety-and-health-at-work/resources-library/training/WCMS\\_215344/lang--en/index.htm](https://www.ilo.org/global/topics/safety-and-health-at-work/resources-library/training/WCMS_215344/lang--en/index.htm).

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----. 2017. Wise Action Checklist, in *Global Manual for WISE: Work Improvements in Small* (Geneva), p. 8. Available at: [https://www.ilo.org/wcmsp5/groups/public/--ed\\_protect/---protrav/---safework/documents/instructionalmaterial/wcms\\_621054.pdf](https://www.ilo.org/wcmsp5/groups/public/--ed_protect/---protrav/---safework/documents/instructionalmaterial/wcms_621054.pdf).

----. 2020. *Occupational Safety and Health – A Guide for Labour Inspectors and other stakeholders* (Geneva). Available at: <https://www.ilo.org/global/topics/labour-administration-inspection/resources-library/publications/guide-for-labour-inspectors/lang--en/index.htm>.

World Health Organization (WHO). 2020. *Health topics: Occupational health* (Geneva). Available at: <https://www.who.int/health-topics/occupational-health>.



## ▶ APPENDICES

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## ► APPENDIX I: SAMPLE WORKPLACE INCIDENT REPORT FORM

### Instructions

Fill out this form to report a workplace incident resulting in injury or a disease, dangerous occurrence or near miss. Return the completed form to: \_\_\_\_\_

This form serves to document (*select all that apply*):

**Occupational  
accident**

**Occupational  
disease**

**Dangerous  
occurrence**

**Other near  
miss**

**Individual affected** – *To be filled out by the person injured / involved if possible.*

Name of the person completing the report: \_\_\_\_\_

Gender \_\_\_\_\_ Date of Birth \_\_\_\_\_ Date of entry into position \_\_\_\_\_

Role \_\_\_\_\_ Unit \_\_\_\_\_

Supervisor's name: \_\_\_\_\_

Date and time of the incident: \_\_\_\_\_

Where exactly did the incident occur? \_\_\_\_\_

Persons involved: \_\_\_\_\_

Describe what happened in as much detail as possible.

- For instance:
- the name of any substance involved;
  - the name and type of any machine or vehicle involved;
  - the events that led to the incident;
  - the part played by any person or persons.

In the case of a personal injury, give details of what the person was doing. Describe any action that has since been taken to prevent a similar incident. Use a separate piece of paper if necessary.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Witnesses: \_\_\_\_\_

**To be completed only in the case of an occupational accident or disease**

Type of injury/disease: \_\_\_\_\_

Cause of lost time, injury or first aid: \_\_\_\_\_

Was medical treatment necessary? If so, name of the hospital /physician:  Yes  No

\_\_\_\_\_  
Employee signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Supervisor signature

\_\_\_\_\_  
Date



What are the hazards?	Who might be harmed and how?	What are the current control measures?	What is the residual risk?	Do you need to do anything else to control this risk?	Action by who?	Action by when?	Done

The ILO would like to acknowledge that this template has been adapted from information published by the Health and Safety Executive, United Kingdom and licensed under the United Kingdom Open Government Licence v1.0

▶ **APPENDIX III:**

Action checklist for fire safety [https://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---safework/documents/publication/wcms\\_194782.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_194782.pdf)

▶ **APPENDIX IV:**

*Global Manual for WISE: Work Improvements in Small Enterprises*, Action Checklist, page 8:  
[https://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---safework/documents/instructionalmaterial/wcms\\_621054.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/instructionalmaterial/wcms_621054.pdf)

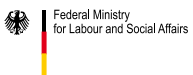




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International Labour Organization  
Route des Morillons 4 CH-1211  
Geneva 22 Switzerland  
ilo@ilo.org