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Benjamin O. ALLI

FUNDAMENTAL PRINCIPLES OF OCCUPATIONAL HEALTH AND SAFETY



SECOND EDITION

FUNDAMENTAL PRINCIPLES OF OCCUPATIONAL HEALTH AND SAFETY

FUNDAMENTAL PRINCIPLES OF OCCUPATIONAL HEALTH AND SAFETY

Second edition

Benjamin O. ALLI

INTERNATIONAL LABOUR OFFICE • GENEVA

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Editor's note

Since the book was written from an occupational health perspective, its title refers to “**occupational health and safety**”, whereas all relevant ILO instruments and programmes use the term “**occupational safety and health**”. Because this book is an updated edition of an existing text the title has not been changed, but for consistency with current usage the term “occupational safety and health” is used throughout its contents, on the understanding that the terms are equivalent.

PREFACE

Occupational safety and health (OSH) is generally defined as the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment. This domain is necessarily vast, encompassing a large number of disciplines and numerous workplace and environmental hazards. A wide range of structures, skills, knowledge and analytical capacities are needed to coordinate and implement all of the “building blocks” that make up national OSH systems so that protection is extended to both workers and the environment.

The scope of occupational safety and health has evolved gradually and continuously in response to social, political, technological and economic changes. In recent years, globalization of the world’s economies and its repercussions have been perceived as the greatest force for change in the world of work, and consequently in the scope of occupational safety and health, in both positive and negative ways. Liberalization of world trade, rapid technological progress, significant developments in transport and communication, shifting patterns of employment, changes in work organization practices, the different employment patterns of men and women, and the size, structure and life cycles of enterprises and of new technologies can all generate new types and patterns of hazards, exposures and risks. Demographic changes and population movements, and the consequent pressures on the global environment, can also affect safety and health in the world of work.

It is no coincidence that the protection of workers against sickness, disease and injury related to the working environment, as embodied in the Preamble to the Constitution of the ILO, has been a central issue for the

Organization since its creation in 1919, and continues to be so today. Occupational safety and health is a key element in achieving sustained decent working conditions and strong preventive safety cultures. Close to 80 per cent of all ILO standards and instruments are either wholly or partly concerned with issues related to occupational safety and health. A large number of areas of ILO activity include an OSH or OSH-related component, among them employment, child labour, the informal economy, gender mainstreaming, labour statistics, labour inspection and maritime safety, HIV/AIDS and the world of work, and international migration. This breadth of penetration gives a clear indication of the continued importance of occupational safety and health as a core element of ILO activity and of the Decent Work Agenda in particular.

In November 2000 the Governing Body of the ILO decided to apply on an experimental basis an integrated approach to ILO standards-related activities in order to increase their coherence, relevance, impact and currency. OSH was selected as the first area to benefit from this approach, and at its 91st Session (2003) the International Labour Conference (ILC) held a general discussion to this end (ILO, 2003a). The ILC adopted conclusions defining the main elements of a global strategy to bring about measurable improvements in safety and health in the world of work and recommending the development of a new instrument aimed at establishing a promotional framework for occupational safety and health.

As a result, the ILC adopted, at its 94th Session in June 2006, a Convention (No. 187) concerning the promotional framework for occupational safety and health and its accompanying Recommendation (No. 197). The main purposes of the Convention are to ensure that a higher priority is given to occupational safety and health in national agendas and to foster political commitments in a tripartite context for the improvement of occupational safety and health. Its content is promotional rather than prescriptive, and it is based on two fundamental concepts: the development and maintenance of a preventive safety and health culture, and the application at the national level of a systems management approach to occupational safety and health.

This new edition of *Fundamental principles of occupational health and safety* introduces these new ILO instruments promoting occupational safety and health, as well as new approaches, tools and areas of action such as national OSH programmes, national OSH profiles, OSH management systems, HIV/AIDS and the world of work, and technical guidelines for the sound management of chemicals. The book aims to serve as a guide or reference work for the development of OSH policies and programmes. It covers the fundamental principles of occupational safety and health, based on the ILO's philosophy of prevention and protection, which stems from the

Box 1 The ILO's mandate on occupational safety and health

The ILO's mandate for work in the field of occupational safety and health dates from its very foundation:

And whereas conditions of labour exist involving such injustice hardship and privation to large numbers of people as to produce unrest so great that the peace and harmony of the world are imperilled; and an improvement of those conditions is urgently required; as, for example, by the regulation of the hours of work including the establishment of a maximum working day and week ... the protection of the worker against sickness, disease and injury arising out of his employment ...

(Preamble to the *Constitution of the International Labour Organization*)

This was renewed in 1944, when the relevance of the ILO was reasserted at its Philadelphia Conference:

The Conference recognizes the solemn obligation of the International Labour Organization to further among the nations of the world programmes which will achieve: ... (g) adequate protection for the life and health of workers in all occupations; ...

(Declaration of Philadelphia, 1944, para. III)

Organization's mandate in this field (see box 1). The Conventions, Recommendations and codes of practice that make up the set of "core" ILO instruments on OSH embody all the principles, provisions and technical guidance necessary to establish, implement and manage OSH systems. They are presented here in a form that will be useful for those involved in policy-making (governments, and employers' and workers' organizations), those within enterprises who are concerned with the practical implementation of measures to promote and protect the safety and health of workers (managers, supervisors, workers' representatives), and legislators and labour inspectors.

A single work cannot hope to cover all the subject areas in the vast field of occupational safety and health. This book therefore focuses on the key topics essential to the promotion of OSH activities. Part I gives an overview of the key concepts which permeate all OSH activities; Part II presents policy perspectives; and Part III deals with the operational aspects of implementing occupational safety and health.

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A number of statements, policies and checklists are given in this book. These are intended as illustrations and examples. It is worth emphasizing that the normal ILO disclaimer applies to these texts: they are not authoritative or approved by the ILO.

ABBREVIATIONS

ART	anti-retroviral treatment
CCOHS	Canadian Centre for Occupational Safety and Health
CETDG	United Nations Committee of Experts on the Transport of Dangerous Goods
CIS	ILO International Occupational Safety and Health Information Centre
COSHH	Control of Substances Hazardous to Health (UK)
ECOSOC	United Nations Economic and Social Council
EU	European Union
FIOH	Finnish Institute for Occupational Health
GHS	Globally Harmonized System for the Classification and Labelling of Chemicals
HSE	Health and Safety Executive (UK)
ICCT	International Chemical Control Toolkit
ICEM	International Federation of Chemical, Energy, Mine and General Workers' Union
ICOH	International Commission on Occupational Health
ICSC	International Chemical Safety Cards
ICSE	International Classification of Status in Employment
IOHA	International Occupational Hygiene Association
IOMC	Inter-Organization Programme for the Sound Management of Chemicals
IPCS	Joint ILO/WHO/UNEP International Programme on Chemical Safety
NIOSH	National Institute for Occupational Safety and Health (United States)
OECD	Organization for Economic Cooperation and Development

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OEL	occupational exposure limit
PIACT	French acronym for the ILO's International Programme for the Improvement of Working Conditions
SMEs	small and medium-sized enterprises
STEL	short-term exposure limit
TLV	threshold limit value
TWA	time-weighted average
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNEP	United Nations Environment Programme
UNITAR	United Nations Institute for Training and Research
US-OSHA	US Occupational Safety and Health Administration
WHO	World Health Organization

PART I

OVERVIEW

OCCUPATIONAL HAZARDS AND RISKS: THE PROBLEMS AND THE ILO RESPONSE

1

An unacceptable situation

The human, social and economic costs of occupational accidents, injuries and diseases and major industrial disasters have long been cause for concern at all levels from the individual workplace to the national and international. Measures and strategies designed to prevent, control, reduce or eliminate occupational hazards and risks have been developed and applied continuously over the years to keep pace with technological and economic changes. Yet, despite continuous if slow improvements, occupational accidents and diseases are still too frequent and their cost in terms of human suffering and economic burden continues to be significant. A recent ILO report estimated that 2 million occupational fatalities occur across the world every year (ILO, 2003b), the highest proportions of these deaths being caused by work-related cancers, circulatory and cerebrovascular diseases, and some communicable diseases. The overall annual rate of occupational accidents, fatal and non-fatal, is estimated at 270 million (Hämäläinen, Takala and Saarela, 2006). Some 160 million workers suffer from work-related diseases and about two-thirds of those are away from work for four working days or longer as a result. After work-related cancers, circulatory diseases and certain communicable diseases, accidental occupational injuries are the fourth main cause of work-related fatalities. Recent data from the ILO and from the World Health Organization (WHO) indicate that overall occupational accident and disease rates are slowly declining in most industrialized countries (ILO, 2003a) but are level or increasing in developing and industrializing countries:

- According to the European Statistics on Accidents at Work (ESAW), every year in the 15 Member States of the European Union (EU) before

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the enlargements of 2004 and 2007 about 5,000 workers were killed in accidents at work and about 5 million workers were victims of accidents at work leading to more than three days' absence from work (EU, 2004).

- In India and China, the rates of occupational fatalities and accidents are similar at, respectively, 10.4 and 10.5 per 100,000 for fatalities, 8,700 and 8,028 for accidents.
- In sub-Saharan Africa, the fatality rate per 100,000 workers is 21 and the accident rate 16,000. This means that each year 54,000 workers die and 42 million work-related accidents take place that cause at least three days' absence from work.
- In Latin America and the Caribbean, about 30,000 fatalities occur each year and 22.6 million occupational accidents cause at least three days' absence from work.

The economic costs of these injuries and deaths are colossal, at the enterprise, national and global levels. Taking into account compensation, lost working time, interruption of production, training and retraining, medical expenses, and so on, estimates of these losses are routinely put at roughly 4 per cent of global GNP every year, and possibly much more. Overall spending on compensation for a group of OECD countries was estimated at US\$122 billion for 1997 alone, with 500 million working days lost as a result of accidents or health problems. If property losses from accidents, and more specifically major industrial accidents, are included, recent studies suggest that insured losses are in the vicinity of US\$5 billion annually and are on the increase (Mitchell, 1996). Moreover, these figures are based mainly on acute and intensive events and do not include uninsured losses, delayed losses associated with acute events such as oil and other toxic chemical spills, or the environmental impact and losses caused by chronic industrial pollution. The total annual cost to the EU of work-related injuries and ill health in 2001 was estimated at between €185 billion and €270 billion, or between 2.6 per cent and 3.8 per cent, of the EU's GNP. In comparison, the cost of occupational accidents in Viet Nam for 2006 was estimated at US\$3 billion (Government of Viet Nam, 2006). Box 2 illustrates the costs of occupational safety and health in an industrialized country.

Occupational and industrial accidents are all caused by preventable factors which could be eliminated by implementing already known and available measures and methods. This is demonstrated by continuously reduced accident rates in industrialized countries. The application of preventive strategies therefore offers significant human and economic benefits.

Box 2 The burden and cost of occupational accidents and diseases in the United Kingdom

The Health and Safety Executive (HSE) has developed a methodology to calculate the costs of workplace accidents and diseases to individuals, employers and society. Each year:

- over 1 million injuries and 2.3 million cases of ill health occur;
- around 40 million working days are lost;
- over 25,000 individuals lose their jobs because of injury or ill health.

The estimated costs of this toll are:

- to individuals, US\$20–28 billion;
- to employers, US\$8–16 billion;
- to society, US\$40–60 billion.
- of a fatality: US\$3 million
- of a major injury: US\$80,000
- of an average case of ill health: US\$17,000

Source: Annual data based on 2005 statistics published by the HSE: <http://www.hse.gov.uk/costs/>; HSE, "Costs to Britain of workplace accidents and work-related ill health" (interim update), data based on 2000–2001 statistics: <http://www.hse.gov.uk/economics/costing.htm>.

Variations in performance

There are significant variations in occupational safety and health performance between countries, economic sectors and sizes of enterprise.

Countries

The incidence of workplace fatalities varies enormously between countries. There appears to be a significant difference between developed and developing countries:

- a factory worker in Pakistan is eight times more likely to be killed at work than a factory worker in France;
- fatalities among transport workers in Kenya are ten times those in Denmark;
- construction workers in Guatemala are six times more likely to die at work than their counterparts in Switzerland (World Bank, 1995).

Economic sectors

OSH performance varies significantly between economic sectors within countries. Statistical data show that, worldwide, the highest rates of occupational deaths occur in agriculture, forestry, mining and construction. The ILO has estimated, for example, that tropical logging accidents cause more than 300 deaths per 100,000 workers. In other words, three out of every 1,000 workers engaged in tropical logging die annually or, from a lifetime perspective, on average every tenth logger will die of a work-related accident. Similarly, certain occupations and sectors, such as meat packaging and mining, have high rates of work-related diseases, including fatal occupational diseases.

Sizes of enterprise

Generally, small workplaces have a worse safety record than large ones. It seems that the rate of fatal and serious injuries in small workplaces (defined as those with fewer than 50 employees) is twice that in large workplaces (defined as those with more than 200 employees).

Groups at particular risk

Some groups seem to be particularly at risk or to find that their specific problems are overlooked. For example:

- The special position of women workers needs attention. The gender division of labour has an impact on women's safety and health in the workplace, which goes well beyond reproductive hazards. As one union points out:

Health and safety is male dominated. 86% of Health and Safety Inspectors are male. Resources are traditionally invested far more on "male" industries, rather than areas of industry where women work. Safety standards are based on the model of a male worker. Tasks and equipment are designed for male body size and shape. This can lead to discrimination in a number of areas. (GMB, 1998)
- There are many home-based workers, in both developed and developing countries. Some countries regard them as ordinary employees, subject to normal safety and health legislation. In other countries, they are not included in legislation. But countries that ratify the Home Work Convention, 1996 (No. 177), must ensure protection in the field of occupational safety and health equal to that enjoyed by other workers.
- Part-time workers are another group who may suffer from not being covered by safety and health provisions. This is why the Part-Time Work Convention, 1994 (No. 175), stipulates that "measures shall be taken to

ensure that part-time workers receive the same protection as that accorded to comparable fulltime workers in respect of: ... (b) occupational safety and health” (Article 4).

- In 2000, economically active migrants were estimated to number some 81 million. For many of them, working conditions are abusive and exploitative: forced labour, low wages, poor working environment, a virtual absence of social protection, the denial of freedom of association and union rights, discrimination, xenophobia and social exclusion all rob workers of the potential benefits of working in another country (ILO, 2004). The safety and health risks associated with such conditions are compounded by the kinds of work that most migrants do, namely hazardous and risky jobs, particularly in agriculture and construction. In Europe, occupational accident rates are about twice as high for migrant workers as for native workers, and there is no reason to believe that the situation is any different in other parts of the world. Language barriers, exposure to new technology, family disruption, poor access to health care, stress and violence are some of the specific problems faced by migrant workers that make them particularly vulnerable to safety and health risks at the workplace.
- Workers in the informal economy are much more likely than formal workers to be exposed to poor working environments, low safety and health standards, and environmental hazards, and to suffer poor health or injury as a result. Most informal workers have little or no knowledge of the risks they face and how to avoid them. The very nature of the informal economy makes it almost impossible for governments to collect the vital statistics needed to take appropriate remedial action, and, since much informal work takes place in homes, inspectorates cannot investigate working conditions or get information and advice to the people who need it. The extension of fundamental rights and social protection to workers in the informal economy has been a major concern for the ILO in recent years. Following the preparation of a report on the subject (ILO, 2002a), a general discussion was held at the 90th Session of the ILC in 2002, which resulted in the adoption of a resolution (ILO, 2002b) and a basis for a future plan of action. The ILO has already started to develop tools and methodologies to begin the process of improving the working conditions and environment of informal workers through training, raising awareness and other means.
- Many children are still involved in hazardous work, although the numbers are falling: the worldwide total was estimated at 126 million in 2004, a

considerable drop from an estimated 171 million in 2000. The decrease was particularly strong among children aged 5 to 14. This improvement can be attributed to the wide ratification of the Worst Forms of Child Labour Convention (No. 182), 1999, and the implementation of its provisions and those of its accompanying Recommendation (No. 190), 1999. More boys than girls continue to work in dangerous jobs. About 69 per cent of boys work in agriculture, 22 per cent in services and 9 per cent in industry.

- The ageing of the world workforce raises many concerns, including some relating to occupational safety and health. The ILO has always been committed to the protection of ageing workers, and has been active specifically in elaborating international labour standards in invalidity, old age and survivors' insurance. The most comprehensive instrument on this subject is the Older Workers Recommendation, 1980 (No. 162), which aims to protect the right of older workers to equality of treatment and stresses the measures that should be implemented to protect their needs, including the identification and elimination of occupational hazards and working conditions that hasten the ageing process and reduce their working capacity. The ILO contribution to the 2002 Second World Assembly on Ageing (ILO, 2002c) stressed this fact and called for measures to promote the adaptation of working conditions for older workers.¹
- The accident rate of contract workers is on average twice that of permanent workers. Many employers seem to believe that by subcontracting certain tasks, they subcontract their safety responsibilities. This is not the case.
- Drivers are particularly at risk. International estimates suggest that between 15 and 20 per cent of fatalities caused by road accidents are suffered by people in the course of their work, but these deaths are treated as road traffic accidents rather than work-related fatalities.

Despite this worrying situation, international awareness of the magnitude of the problem remains surprisingly modest. The inadequate dissemination of knowledge and information hampers action, especially in developing countries. It also limits the capacity to design and implement effective policies and programmes. The fatality, accident and disease figures are alarming but investment decisions continue to be made in disregard of safety, health and environmental considerations. In the scramble for capital, the pressures of globalization and increasingly stiff competition tend to deflect attention from the long-term economic benefits of a safe and healthy working environment. While the international press reports major industrial accidents, the many

work-related deaths that occur every day go virtually unrecorded. Workers continue to face serious risks. To reduce the human suffering, financial loss and environmental degradation associated with these risks, there is a need for increased and sustained action to protect occupational safety and health.

Major OSH instruments

The means used by the ILO to promote occupational safety and health include international labour standards, codes of practice, the provision of technical advice and the dissemination of information. By these means it aims to increase the capacity of member States to prevent occupational accidents and work-related diseases by improving working conditions.

One of the main functions of the ILO, from its foundation in 1919, has been the development of *international labour standards*. These cover labour and social matters, and take the form of Conventions and Recommendations. Conventions are comparable to multilateral international treaties which are open for ratification by member States and, once ratified, create specific binding obligations. A government that has ratified a Convention is expected to apply its provisions through legislation or other appropriate means, as indicated in the text of the Convention. The government is also required to report regularly on the application of ratified Conventions. The extent of compliance is subject to examination and public comment by the ILO supervisory machinery. Complaints about alleged non-compliance may be made by the governments of other ratifying States or by employers' or workers' organizations. Procedures exist for investigating and acting upon such complaints.

In contrast, Recommendations are intended to offer non-binding guidelines which may orient national policy and practice. They often elaborate upon the provisions of Conventions on the same subject or upon a subject not yet covered by a Convention. Although no substantive obligations are entailed, member States have certain important procedural obligations in respect of Recommendations, namely, to submit the texts to their legislative bodies, to report on the resulting action, and to report occasionally at the request of the ILO Governing Body on measures taken or envisaged to give effect to the provisions.

Conventions and Recommendations adopted by the ILC, taken as a whole, are considered as an *international labour code* which defines minimum standards in the social and labour field.

ILO standards have exerted considerable influence on the laws and regulations of member States in that many texts have been modelled on the relevant provisions of ILO instruments. Drafts of new legislation or amendments are often prepared with ILO standards in mind so as to ensure compliance with ratified Conventions or to permit the ratification of other

Conventions. Indeed, governments frequently consult the ILO, both formally and informally, about the compatibility of proposed legislative texts with international labour standards.

In addition to labour standards, the ILO also develops codes of practice. These contain practical recommendations, sometimes highly technical and scientifically detailed, to be used as guidance on implementing the labour standards or on addressing a particular issue. ILO codes of practice, like labour standards, are developed in a tripartite context, but through a meeting of experts nominated by the Governing Body rather than the ILO's constituents. Once the meeting of experts has drawn up the code, the Governing Body is invited to approve its publication. Codes of practice are not legally binding. Traditionally, these codes have been drafted in the form of model regulations, which provide a framework for implementation of policy at the national level. Their use and function seem to be evolving, however, and an emerging trend is to place increased focus on their potential to provide technical, hands-on advice addressed directly to enterprises. Thus today they are relevant not only to national authorities and services, but also to employers, workers and enterprises in both private and public sectors.

The ILO Conventions and Recommendations on occupational safety and health embody principles which define the rights of workers in this field as well as allocating duties and responsibilities to the competent authorities, to employers and to workers. OSH standards broadly fall into six groups, according to their scope or purpose (box 3).

In a periodic review of the need to revise existing labour standards, 35 of the standards relating to occupational safety and health were considered up to date, ten were in need of revision² and two were considered as no longer fully up to date but still relevant in certain respects. Since March 2002 four new instruments – one Protocol, one Convention and two Recommendations – have been adopted. A full up-to-date list of the ILO OSH standards indicating their status, as well as the list of codes of practice, is provided in Annex II.

The ILO policy on occupational safety and health is essentially contained in three international labour Conventions and their accompanying Recommendations (see Annex III for the text of the relevant sections of these instruments):

- The Promotional Framework for Occupational Safety and Health Convention (No. 187), and its accompanying Recommendation (No. 197), 2006, provide for the establishment of a permanent process of continuous improvement of occupational safety and health and the building of a preventive safety and health culture. This requires governments, in consultation with the most representative organizations

Box 3 Scope and purpose of OSH standards

Conventions and Recommendations on occupational safety and health may serve several purposes, acting as:

- fundamental principles to guide policies for promotion, action and management;
- general protection measures, for example, guarding of machinery, medical examination of young workers or limiting the weight of loads to be transported by a single worker;
- protection in specific branches of economic activity, such as mining, the building industry, commerce and dock work;
- protection of specific professions (for example, nurses and seafarers) and categories of workers having particular occupational health needs (such as women or young workers);
- protection against specific risks (ionizing radiation, benzene, asbestos); prevention of occupational cancer; control of air pollution, noise and vibration in the working environment; measures to ensure safety in the use of chemicals, including the prevention of major industrial accidents;
- organizational measures and procedures relating, for example, to labour inspection or compensation for occupational injuries and diseases.

of employers and workers, to take active steps towards achieving progressively and maintaining a safe and healthy working environment by elaborating or updating a national policy, developing or upgrading a national system and implementing national programmes on occupational safety and health.³ This process must take into account the principles set out in the instruments of the ILO relevant to the Convention and must include a mechanism to consider what measures could be taken to ratify OSH-related ILO Conventions.

- The ILO Occupational Safety and Health Convention, 1981 (No. 155), and its accompanying Recommendation (No. 164), provide for the adoption of a national occupational safety and health policy, as well as describing the actions to be taken by governments and within enterprises to promote occupational safety and health and improve the working environment. The Convention is supplemented by the Protocol of 2002 to the Occupational Safety and Health Convention (No. 155), which calls for the establishment and periodic review of requirements and

Fundamental principles of occupational health and safety

procedures for the recording and notification of occupational accidents and diseases, and for the publication of related annual statistics.

- The ILO Occupational Health Services Convention (No. 161) and Recommendation (No. 171), 1985, provide for the establishment of occupational health services at the enterprise level, designed to ensure the implementation of health surveillance systems and to contribute towards implementing the OSH policy.

By the end of October 2007, just one member State had ratified Convention No. 187, while 50 member States had ratified Convention No. 155 and 26 had ratified Convention No. 161. The practical impact of these instruments, however – at least of Conventions No. 155 and No. 161 – has been much wider than the number of ratifications might suggest, because many countries, although unable to proceed to ratification, have implemented the principles embodied in these instruments. This was confirmed by the results of a survey of member States on activities related to ILO standards in the area of occupational safety and health, carried out in 2002 to assess the

Box 4 Major ILO instruments concerning occupational safety and health in general

Roughly half of the 188 Conventions and 199 Recommendations adopted by the International Labour Conference between 1919 and 2007 address, directly or indirectly, issues of occupational safety and health. General provisions are contained in the following up-to-date instruments:

- Protection of Workers' Health Recommendation, 1953 (No. 97)
- Occupational Safety and Health Convention (No. 155), and Recommendation (No. 164), 1981
- Occupational Health Services Convention (No. 161), and Recommendation (No. 171), 1985
- Prevention of Major Industrial Accidents Convention (No. 174), and Recommendation (No. 181), 1993
- List of Occupational Diseases Recommendation, 2002 (No. 194)
- Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155)
- Promotional Framework for Occupational Safety and Health Convention (No. 187), 2006, and Recommendation (No. 197), 2006

Box 5 Examples of ILO instruments concerning specific risks and substances

- Radiation Protection Convention (No. 115), and Recommendation (No. 114), 1960
- Occupational Cancer Convention (No. 139), and Recommendation (No. 147), 1974
- Working Environment (Air Pollution, Noise and Vibration) Convention (No. 148), and Recommendation (No. 156), 1977
- Asbestos Convention (No. 162), and Recommendation (No. 172), 1986
- Chemicals Convention (No. 170), and Recommendation (No. 177), 1990

Box 6 Examples of ILO instruments concerning safety and health in specific branches of economic activity

- Hygiene (Commerce and Offices) Convention (No. 120), and Recommendation (No. 120), 1964
- Occupational Safety and Health (Dock Work) Convention (No. 152), and Recommendation (No. 160), 1979
- Safety and Health in Construction Convention (No. 167), and Recommendation (No. 175), 1988
- Safety and Health in Mines Convention (No. 176), and Recommendation (No. 183), 1995
- Safety and Health in Agriculture Convention (No. 184) and Recommendation (No. 192), 2001

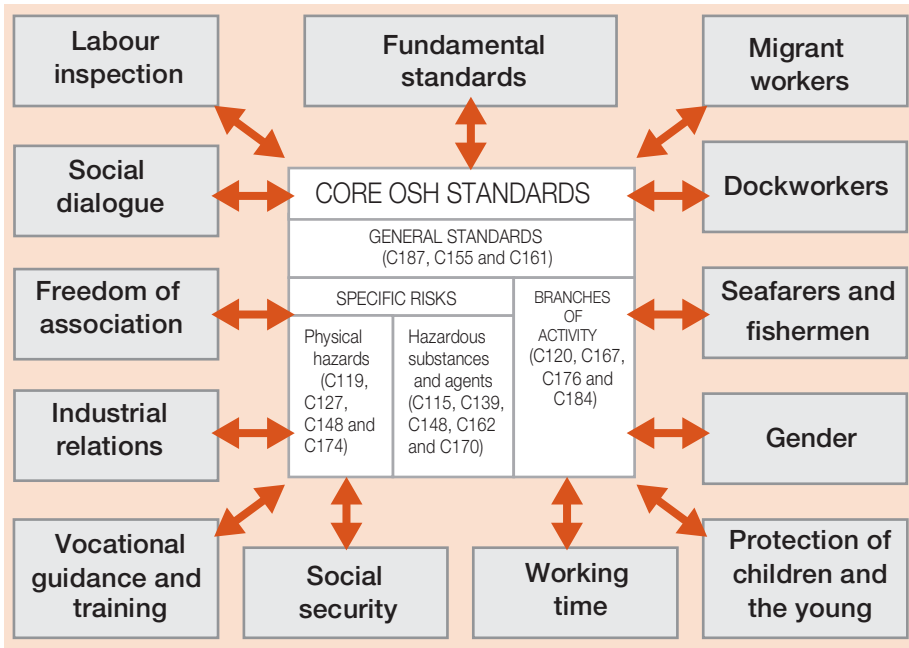
coherence, relevance and impact of ILO OSH instruments. Boxes 4, 5, 6 list and 7 the most important ILO instruments relating to the various aspects of occupational safety and health. For a full list of relevant instruments, see Annex II.

In addition, international labour standards covering general conditions of employment, social security, and the employment of women, children and other categories of workers also have a bearing on safety, health and the working environment. Moreover, a series of Conventions and Recommendations specifically covers the health, safety and welfare of seafarers. Figure 1 shows how the ILO's core OSH standards relate to these other measures.

Box 7 **Examples of recent ILO codes of practice on occupational safety and health**

- *Prevention of major industrial accidents*, 1991
- *Safety and health in construction*, 1992
- *Safety in the use of chemicals at work*, 1993
- *Recording and notification of occupational accidents and diseases*, 1995
- *Guidelines on occupational safety and health management systems*, 2001
- *Ambient factors in the workplace*, 2001
- *HIV/AIDS and the world of work*, 2001
- *Safety and health in the non-ferrous metals industries*, 2003
- *Safety and health in underground coalmines*, 2008

Figure 1 **How the core OSH standards relate to ILO standards on other issues**



Source: ILO.

Notes

¹ Working Party on Policy Regarding the Revision of Standards of the Committee on Legal Issues and International Labour Standards (LILS/WP/PRS). See GB.285/ESP/6/1 and GB.283/LILS/WP/PRS/1/1. The International Labour Office published a guide on international labour standards in 2005: see ILO, 2005a.

² In the proposals for the agenda of the 90th Session (2002) of the International Labour Conference (GB.276/2), possible ways to revise these instruments were submitted to the Governing Body.

³ For definitions of “national policy”, “national system” and “national programme”, see Article 1 of the Convention, reproduced in Annex III.

KEY PRINCIPLES IN OCCUPATIONAL SAFETY AND HEALTH

2

A number of key principles underpin the field of occupational safety and health. These principles and the provisions of international labour standards are all designed to achieve a vital objective: that work should take place in a safe and healthy environment.

Core OSH principles

Occupational safety and health is an extensive multidisciplinary field, invariably touching on issues related to scientific areas such as medicine – including physiology and toxicology – ergonomics, physics and chemistry, as well as technology, economics, law and other areas specific to various industries and activities. Despite this variety of concerns and interests, certain basic principles can be identified, including the following:

- *All workers have rights.* Workers, as well as employers and governments, must ensure that these rights are protected and must strive to establish and maintain decent working conditions and a decent working environment. More specifically:
 - work should take place in a safe and healthy working environment;
 - conditions of work should be consistent with workers' well-being and human dignity;
 - work should offer real possibilities for personal achievement, self-fulfilment and service to society (ILO, 1984).
- *Occupational safety and health policies must be established.* Such policies must be implemented at both the national (governmental) and enterprise levels. They must be effectively communicated to all parties concerned.

Fundamental principles of occupational health and safety

- *A national system for occupational safety and health must be established.* Such a system must include all the mechanisms and elements necessary to build and maintain a preventive safety and health culture. The national system must be maintained, progressively developed and periodically reviewed.
- *A national programme on occupational safety and health must be formulated.* Once formulated, it must be implemented, monitored, evaluated and periodically reviewed.
- *Social partners (that is, employers and workers) and other stakeholders must be consulted.* This should be done during formulation, implementation and review of all policies, systems and programmes.
- *Occupational safety and health programmes and policies must aim at both prevention and protection.* Efforts must be focused above all on primary prevention at the workplace level. Workplaces and working environments should be planned and designed to be safe and healthy.
- *Continuous improvement of occupational safety and health must be promoted.* This is necessary to ensure that national laws, regulations and technical standards to prevent occupational injuries, diseases and deaths are adapted periodically to social, technical and scientific progress and other changes in the world of work. It is best done by the development and implementation of a national policy, national system and national programme.
- *Information is vital for the development and implementation of effective programmes and policies.* The collection and dissemination of accurate information on hazards and hazardous materials, surveillance of workplaces, monitoring of compliance with policies and good practice, and other related activities are central to the establishment and enforcement of effective policies.
- *Health promotion is a central element of occupational health practice.* Efforts must be made to enhance workers' physical, mental and social well-being.
- *Occupational health services covering all workers should be established.* Ideally, all workers in all categories of economic activity should have access to such services, which aim to protect and promote workers' health and improve working conditions.
- *Compensation, rehabilitation and curative services must be made available to workers who suffer occupational injuries, accidents and work-related diseases.* Action must be taken to minimize the consequences of occupational hazards.

- *Education and training are vital components of safe, healthy working environments.* Workers and employers must be made aware of the importance of establishing safe working procedures and of how to do so. Trainers must be trained in areas of special relevance to particular industries, so that they can address the specific occupational safety and health concerns.
- *Workers, employers and competent authorities have certain responsibilities, duties and obligations.* For example, workers must follow established safety procedures; employers must provide safe workplaces and ensure access to first aid; and the competent authorities must devise, communicate and periodically review and update occupational safety and health policies.
- *Policies must be enforced.* A system of inspection must be in place to secure compliance with occupational safety and health measures and other labour legislation.

Clearly, some overlap exists among these general principles. For example, the gathering and dissemination of information on various facets of occupational safety and health underlies all the activities described. Information is needed for the prevention as well as the treatment of occupational injuries and diseases. It is also needed for the creation of effective policies and to ensure that they are enforced. Education and training demand information.

While these key principles structure occupational safety and health programmes and policies, the above list is by no means exhaustive. More specialized areas have corresponding principles of their own. Moreover, ethical considerations regarding such matters as individuals' rights to privacy must be taken into consideration when devising policies.

These basic principles are discussed in the following chapters of this book and in other ILO publications (see e.g. ILO, 1998a).

Rights and duties

The responsibilities of governments, employers and workers should be seen as complementary and mutually reinforcing in the common task of promoting occupational safety and health to the greatest extent possible within the constraints of national conditions and practice.

Workers' rights

It is increasingly recognized that the protection of life and health at work is a fundamental workers' right (see box 8); in other words, decent work implies safe work. Furthermore, workers have a duty to take care of their own safety,

Box 8 Safety and health at work – A human right

The right to safety and health at work is enshrined in the United Nations Universal Declaration of Human Rights, 1948, which states:

Everyone has the right to work, to free choice of employment, to just and favourable conditions of work ...

(Article 23)

The United Nations International Covenant on Economic, Social and Cultural Rights, 1976, reaffirms this right in the following terms:

The States Parties to the present Covenant recognize the right of everyone to the enjoyment of just and favourable conditions of work, which ensure, in particular: ... (b) Safe and healthy working conditions ...

(Article 7)

as well as the safety of anyone who might be affected by what they do or fail to do. This implies a right to adequate knowledge, and a right to stop work in the case of imminent danger to safety or health. In order to take care of their own safety and health, workers need to understand occupational risks and dangers. They should therefore be properly informed of hazards and adequately trained to carry out their tasks safely. To make progress in occupational safety and health within enterprises, workers and their representatives have to cooperate with employers, for example by participating in elaborating and implementing preventive programmes.

Employers' responsibilities

Because occupational hazards arise at the workplace, it is the responsibility of employers to ensure that the working environment is safe and healthy. This means that they must prevent, and protect workers from, occupational risks. But employers' responsibility goes further, entailing knowledge of occupational hazards and a commitment to ensure that management processes *promote safety and health at work*. For example, an awareness of safety and health implications should guide decisions on the choice of technology and on how work is organized.

Training is one of the most important tasks to be carried out by employers. Workers need to know not only how to do their jobs, but also how to protect their lives and health and those of their co-workers while working. Within enterprises, managers and supervisors are responsible for ensuring that

workers are adequately trained for the work that they are expected to undertake. Such training should include information on the safety and health aspects of the work, and on ways to prevent or minimize exposure to hazards. On a larger scale, employers' organizations should instigate training and information programmes on the prevention and control of hazards, and protection against risks. Where necessary, employers must be in a position to deal with accidents and emergencies, including providing *first-aid facilities*. Adequate arrangements should also be made for *compensation* of work-related injuries and diseases, as well as for rehabilitation and to facilitate a prompt return to work. In short, the objective of preventive programmes should be to provide a safe and healthy environment that protects and promotes workers' health and their working capacity.

Governments' duties

Governments are responsible for drawing up occupational safety and health policies and making sure that they are implemented. Policies will be reflected in *legislation*, and legislation must be enforced. But legislation cannot cover all workplace risks, and it may also be advisable to address occupational safety and health issues by means of *collective agreements* reached between the social partners. Policies are more likely to be supported and implemented if employers and workers, through their respective organizations, have had a hand in drawing them up. This is regardless of whether they are in the form of laws, regulations, codes or collective agreements.

The competent authority should issue and periodically review regulations or codes of practice; instigate research to identify hazards and to find ways of overcoming them; provide information and advice to employers and workers; and take specific measures to avoid catastrophes where potential risks are high.

The occupational safety and health policy should include provisions for the establishment, operation and progressive extension of occupational health services. The competent authority should supervise and advise on the implementation of a *workers' health surveillance system*, which should be linked with programmes to prevent accident and disease and to protect and promote workers' health at both enterprise and national levels. The information provided by surveillance will show whether occupational safety and health standards are being implemented, and where more needs to be done to safeguard workers.

A concise statement that encapsulates the main purposes of occupational health is the definition provided by the joint ILO/WHO Committee (box 9). As the definition indicates, the main focus in occupational health is on three different objectives:

Box 9 **Joint ILO/WHO Committee's definition of occupational health**

At its first session in 1950, the Joint ILO/WHO Committee on Occupational Health defined the purpose of occupational health. It revised the definition at its 12th session in 1995 to read as follows:

Occupational health should aim at: the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities; and, to summarize: the adaptation of work to man and of each man to his job.

Note: This definition has been adopted by the International Commission on Occupational Health (ICOH) and features in the 2002 update of the International Code of Ethics for Occupational Health Professionals. The code is available at: <http://www.icohweb.org>.

- the maintenance and promotion of workers' health and working capacity;
- the improvement of work and working conditions so that they are conducive to safety and health; and
- the development of work organizations and preventive safety and health cultures in a direction that supports safety and health at work. Such development also promotes a positive social climate and enhances the smooth operation and possibly also the productivity of working enterprises. The term "culture" in this context means an environment reflecting the value systems adopted by the undertaking concerned. Such a culture is reflected in practice in the managerial systems, personnel policy, principles for participation, training policies and quality management of the undertaking.

PART II

NATIONAL FRAMEWORK DESIGN AND IMPLEMENTATION

GENERAL FRAMEWORK FOR OCCUPATIONAL SAFETY AND HEALTH

3

Although effective legal and technical tools and measures to prevent occupational accidents and diseases exist, national efforts to tackle OSH problems are often fragmented and as a result have less impact. Such efforts are also hampered by the inevitable time lag between changes in the world of work or detection of new hazards and risks, and the development and implementation of appropriate responses. The traditional strategies and methods for prevention and control need radical updating to respond effectively to the fast and continuous changes in the workplace. In addition, there is a perpetual need to train new generations of workers as they replace retiring ones. Mechanisms and strategies must therefore be developed to keep occupational safety and health continuously at the forefront of national and enterprise priorities. This is a fundamental requirement for achieving and sustaining decent working conditions and a decent working environment.

This can be done by raising the general awareness of the importance of occupational safety and health in social and economic contexts, and integrating it as a priority element in national and business plans. It is also important to engage all social partners and stakeholders in initiating and sustaining mechanisms for a continued improvement of national OSH systems. The ultimate goal is that the application of principles to protect safety and health by prevention and control of hazards becomes an integral part of working culture and indeed of all social and economic processes. In order to be successful, the development of appropriate responses must make use of the collective body of knowledge, experience and good practice in this area and ensure that this knowledge is kept up to date and disseminated efficiently through good information and education systems. Dynamic management strategies need to be developed and implemented to ensure the coherence, relevance and currency of all the elements that make up a national OSH system.

The Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), and its accompanying Recommendation (No. 197) integrate the two fundamental pillars of the ILO's global strategy to improve safety and health in the world of work, namely the building and maintenance of a national preventive safety and health culture, and the application of a systems approach to the management of occupational safety and health at both national and enterprise levels.

With the objective of promoting continuous improvement of occupational safety and health to prevent occupational injuries, diseases and death, the Convention provides for the development, establishment and implementation of a number of tools for the sound management of occupational safety and health, in consultation with the most representative organizations of employers and workers, as well as other stakeholders engaged in the area of occupational safety and health. These tools include:

- a *national OSH policy*, as defined in the Occupational Safety and Health Convention (No. 155), 1981;
- a *national OSH system*; and
- a *national OSH programme* based on the elaboration and periodic updating of a *national OSH profile*.

A conceptual diagram of a national OSH system, based on the provisions of the ILO's instruments on occupational safety and health, is shown in figure 2 at the end of Chapter 5.

NATIONAL POLICY ON OCCUPATIONAL SAFETY AND HEALTH¹

4

General aims and principles

The promotion of occupational safety and health, as part of an overall improvement in working conditions, represents an important strategy, not only to ensure the well-being of workers but also to contribute positively to productivity. Healthy workers are more likely to be better motivated, enjoy greater job satisfaction and contribute to better-quality products and services, thereby enhancing the overall quality of life of individuals and society. The health, safety and well-being of working people are thus prerequisites for improvements in quality and productivity, and are of the utmost importance for equitable and sustainable socio-economic development.

In order to ensure that satisfactory and durable results are achieved in the field of occupational safety and health, each country should put in place a coherent national policy. Such a policy should be aimed at promoting and advancing at all levels the right of workers to a safe and healthy working environment; at assessing and combating at source occupational risks or hazards; and at developing a national preventive safety and health culture that includes information, consultation and training. By striving to minimize the causes of hazards in the working environment, the policy will reduce the costs of work-related injury and disease, contribute to the improvement of working conditions and the working environment, and improve productivity. The articulation of such a policy will reaffirm a government's commitment to the cause of a safe working environment and enable it to comply with its moral and international obligations.

Policy formulation and review

In order to ensure that a national OSH policy is comprehensive, measures

Box 10 **Key features of a national policy on occupational safety and health**

- The formulation of the policy should reflect tripartite participation, i.e. there should be inputs from employers' and workers' organizations as well as from government and others involved in the area of occupational safety and health.
- The policy should be consistent with national development objectives and policies as a whole.
- The policy should promote the right of workers to decent, safe and healthy working conditions and environment.
- The policy should include ways of promoting adequate public awareness and eliciting political endorsement at the highest level of government.
- The policy should promote the development of a national preventive safety and health culture that includes information, consultation and training.
- The policy should include a plan for mobilizing the necessary institutional and financial resources.
- Coordination among all concerned institutions should be fostered as an inherent element of the policy.
- All available means of action should be used consistently.
- The policy should encourage voluntary compliance at enterprise level.
- The policy should be reviewed regularly.

should be taken to ensure tripartite participation, which is to say participation by government, employers' and workers' organizations, in its formulation, practical implementation and review. There must be coherence in terms of policy content, as well as during implementation. Although the substance and approach of these policies can vary according to national conditions and practice, there are nevertheless some basic features that are generally desirable: these are summarized in box 10.

It should also be borne in mind that if a policy is to be successfully implemented, local conditions and practices must be taken into account when the policy is being formulated. Examples of policies established in a European country and in a developing country are shown in boxes 11 and 12 respectively.

Box 11 Tripartite formulation of a national OSH policy in Italy

The Italian Ministry of Labour unveiled its proposed Safety at Work Charter in December 1999 at a national conference. The Charter's contents and aims were worked out jointly with official OSH agencies, trade unions and employers' organizations.

The Charter sets out to promote the practical application of legislation through tripartite consultations to identify the best and most efficient ways of preventing work-related accidents and diseases by applying the highest safety standards for workers.

The government and social partners settled on a joint approach at the conference. The Charter's measures cut across a range of areas:

1. Completing existing legislation and bringing it into line with European Community directives.
2. Completing the national health plan for 1998–2000, under which a package of safety and health at work information, training, assistance and monitoring measures will be rolled out. Tighter coordination is planned between all relevant government agencies.
3. Providing incentives for business such as cuts in compulsory employment accident and occupational disease insurance premiums, and training measures for young workers.
4. Increasing the number of workers' safety representatives and expanding their role in all workplaces. Smaller firms will be covered by district area workers' representatives.
5. The use of a more preventive approach in enforcement machinery, with better circulation of statistics.

Source: Newsletter of the Trade Union Technical Bureau (TUTB).

Improving occupational safety and health is a dynamic process and the objectives are long-term. The implementation of any well-thought-out programme may thus be expected to extend over several years. Significant developments or phenomena need to be identified, and the necessary action taken by government as well as within enterprises to avoid possible disasters. Because the occupational safety and health situation evolves, the policy itself should be reviewed at appropriate intervals. This review may be an overall

Box 12 Indonesian national OSH policy and strategy

National policy

- Enhancing coordination based on mutually supportive partnership.
- Empowering entrepreneurs, workers and the government so that they are able to apply and enhance OSH culture.
- The government plays a role as both facilitator and regulator.
- The application of OSH management systems as an integral part of company management.
- Understanding and application of sustainable OSH norms.

National strategy

- Increasing the commitment of employers and workers in the field of OSH.
- Enhancing the roles and functions of all sectors in the implementation of OSH.
- Enhancing employers' and workers' ability, understanding, attitude, and behaviour in relation to OSH culture.
- Implementing OSH through risk management and the management of risky behaviour.
- Developing OSH assessment systems (OSH system audit) in the world of business.
- Accompanying and strengthening micro-, small and medium-sized enterprises in applying and enhancing OSH culture.
- Improving the application of an integrated OSH information system.
- Instilling understanding of OSH from an early age to higher education.
- Enhancing the role of professional organizations, universities, practitioners and others in society in improving the understanding, ability, attitude, and behaviour associated with OSH culture.
- Enhancing the integration of OSH in all scientific disciplines.

Source: National Occupational Safety and Health Council, 2006.

assessment of the policy or else focus on particular areas. The objectives of a policy review are to:

- identify major problems;
- devise effective methods of dealing with them;
- formulate and establish priorities for action; and
- evaluate the results.

The nature and extent of OSH problems vary from country to country, resulting in part from differences in the level of economic development, and in technological and social conditions. For example, while a developing country may be grappling with the basic OSH hazards related to agriculture, an industrialized country may be confronted by hazards resulting from an advanced technology such as the production of nanomaterials or from new patterns of work organization leading to stress. Similarly, within countries the incidence of work-related accidents and diseases, including fatal ones, is higher in certain occupations and sectors than in others. Consequently, national policies should establish priorities for action with regard to the specific problems faced within the country concerned. Such priorities may also vary according to other factors including the severity or extent of the particular problems, the available means of action, the economic situation of the country, sector or enterprise in question, the effects of changing technology and social conditions. It should, however, be stressed that adverse socio-economic conditions must not be used as a pretext for inaction.

Policy instruments

Given the complexity and extent of occupational safety and health problems, and the many sources of occupational hazards and work-related diseases, no single intervention would be sufficient in itself to constitute an effective OSH programme. In order to have an impact, action has to proceed at various levels. The practical measures adopted may vary, depending on the degree of technological, economic and social development of the country concerned, and the type and extent of the resources available. It is possible, however, to give a broad outline of the essential components of a national policy.

In general, a national occupational safety and health policy should provide detailed strategies in the following areas, which will be discussed below:

- national laws, labour codes and regulations;
- role and obligations of the competent authority;

- policy coordination; and
- education and training.

National laws, labour codes and regulations

Appropriate legislation and regulations, together with adequate means of enforcement, are key policy instruments for the protection of workers. They form a basis for efforts to improve working conditions and the working environment. The inspection mechanism should make use, among other things, of a workers' health surveillance system, which may be run by the government, the community or the enterprise.

Labour legislation lays down minimum standards which are compulsory and applicable to everyone. As employers and plant managers have to fulfil these stipulations by adopting appropriate techniques, and as the efficacy of safety measures ultimately rests on their application by workers, it is imperative that representative organizations of employers and workers be consulted at the various stages in the preparation of laws and regulations.

It has been recognized, in countries with good safety records, that it is more effective to stipulate the duties of those with primary responsibility for OSH measures in general terms, rather than to attempt to regulate a multitude of hazards in minute detail. This approach is important because technology is developing at an increasingly rapid pace, and it often proves difficult for the legislation to keep abreast of progress. More recent legislation has therefore avoided setting out detailed requirements, but rather has defined general objectives in broad terms.

The trend in major industrialized countries is to restrict the number of statutory instruments and to promote the publication by government agencies or specialized professional bodies of directives, codes of practice and voluntary standards, which are more flexible and can be updated more easily. This approach fosters prevention but does not in any way preclude the enactment of specific regulations where strict measures are required to control serious occupational hazards.

Standards, specifications and codes of practice issued by national standards organizations or professional or specialized institutions are generally not binding, but in some cases they have been given the force of law by the competent authority. This practice, which is more common in countries where such organizations and institutions are public bodies rather than private concerns, considerably lightens the legislator's task, but it may increase the burden on the OSH administrators unless they can rely on approved bodies or institutions for the application and monitoring of these standards and specifications.

Role and obligations of the competent authority

The formulation of a national OSH policy should reflect the respective functions and responsibilities of public authorities, employers, workers and others, and should recognize the complementary character of those responsibilities. Having said that, is the responsibility of the national designated competent authority to identify the major problems and draw up a realistic policy, taking into account the resources and means available. In doing so, the competent authority must set priorities on the basis of the urgency and importance of the problems to be overcome in that particular country.

In order to give effect to OSH policy, and taking account of the available technical means of action, the competent authority or authorities in each country will need to:

- review from time to time the OSH legislation and any other related provisions issued or approved, e.g. regulations or codes of practice, in the light of experience and advances in science and technology;
- issue or approve regulations, codes of practice or other suitable provisions on occupational safety and health, taking account of the links existing between safety and health on the one hand, and hours of work and rest breaks, on the other;
- undertake or promote studies and research to identify hazards and find means of overcoming them;
- provide specific measures to prevent catastrophes, ensuring that action is coordinated and coherent at all levels, with particular attention to areas of potentially high risk for workers and the population at large;
- provide information and advice, in an appropriate manner, to employers and workers, and promote or facilitate cooperation between them and their organizations, with a view to eliminating hazards or reducing them as far as practicable;
- ensure that national laws and regulations, and other approved provisions (for example, guidelines developed by national organizations), are clear, consistent and comprehensive, and reflect national conditions; and
- verify that national legislation takes into account the applicable provisions of international labour standards, especially Conventions Nos. 155 and 161 and their accompanying Recommendations.

With regard to ensuring that the policy is implemented within enterprises, the competent authority or authorities should:

Fundamental principles of occupational health and safety

- set the conditions governing the design, construction and layout of undertakings with a view to avoiding or minimizing hazards;
- ensure that hazards are avoided or controlled when operations begin, or when major alterations or changes are made;
- verify the safety of technical equipment used at work;
- see to it that the procedures defined by the competent authority are enforced;
- identify work processes, substances and agents which are to be prohibited, limited or made subject to authorization or control, taking into consideration the possibility of simultaneous exposure to several substances or agents;
- establish and apply procedures for the notification of occupational accidents and diseases by employers and, when appropriate, insurance institutions and others directly concerned, and produce annual statistics on occupational accidents and diseases;
- hold inquiries in cases of accidents, diseases or any other injuries which arise in the course of or in connection with work and appear to reflect a serious situation;
- publish information on measures taken in pursuance of the national OSH policy, and on accidents, diseases and injuries which arise in the course of or in connection with work; and
- introduce or extend systems to examine chemical, physical and biological agents, and ergonomics and psycho-social factors, with a view to assessing the risk to the health of workers, in so far as is practicable in current national conditions.

Policy coordination

In order to ensure coherence in formulating and applying the national OSH policy, there must be coordination between the various authorities and bodies designated to implement the policy. There should also be close cooperation between public authorities, representative employers' and workers' organizations, and any other concerned bodies, with a view to making arrangements that are appropriate to national conditions and practice. Such arrangements might include the establishment of a central body to take overall responsibility for implementation of policy measures.

The main purposes of these joint efforts should be to:

- fulfil the requirements regarding policy formulation, implementation and periodic review;
- coordinate efforts to carry out the functions assigned to the competent authority;
- coordinate related activities that are undertaken nationally, regionally or locally by public authorities, employers and their organizations, workers' organizations and representatives, and other individuals or bodies concerned; and
- promote the exchange of views, information and experience nationwide, within particular industries, or in specific branches of economic activity.

If the goals of OSH policy are to be achieved, employers and workers must be continuously involved in its implementation and review. National tripartite seminars can be an effective means of associating employers and workers in the policy-making process. The consensus developed by such seminars increases the commitment to implement the agreed measures.

Education and training

Education and training provide individuals with the basic theoretical and practical knowledge required to carry out their trade or occupation successfully and to fit into the working environment. Because of the importance of occupational safety and health, measures should be taken to include these subjects in education and training at all levels in all trades and professions, including higher technical, medical and professional education. OSH training should meet the needs of all workers, and should be promoted in a manner that is appropriate to national conditions and practice.

The idea is to incorporate OSH principles related to the student's needs into the teaching of all trades and professions. It is therefore important to ensure that OSH matters are integrated in the curricula and teaching materials of trades and occupations at a level in line with the future functions and responsibilities of the people being taught. In general, individuals have great difficulty in modifying acquired habits or abandoning ingrained actions and reflexes. Schooling or apprenticeship should therefore inculcate safe working methods and behaviour at an early stage, so that they are followed throughout working life.

Vocational training, whether in the enterprise or at school, often leaves workers poorly prepared to deal with the hazards of their trade. Where they

have learnt to work with defective or badly guarded machines and tools, it would be surprising if they were later to be much concerned about safety. If, on leaving school, they are unaware of the importance of good personal hygiene, they are scarcely likely to practise it in the workshop. If people are to be taught how to earn their living, they should also be taught how to protect their lives.

The need to give appropriate training in occupational safety and health to workers and their representatives in the enterprise should thus be stressed as a fundamental element of OSH policy, and should be stated explicitly in the policy document. Workers should be provided with adequate training in terms of the technical level of their activity and the nature of their responsibilities. Employers should also learn how to gain the confidence of their workers and motivate them; this aspect is as important as the technical content of training.

The need to train labour inspectors, OSH specialists and others directly concerned with the improvement of working conditions and the working environment cannot be overemphasized and should be reflected in the policy document. The training should take into account the increasing complexity of work processes, often brought about by the introduction of new or advanced technology, and the need for more effective methods of analysis to identify and measure hazards, as well as action to protect workers against them.

Employers' and workers' organizations should take positive action to carry out training and information programmes with a view to preventing potential occupational hazards in the working environment, and to controlling and protecting against existing risks such as those due to air pollution, noise and vibration. The public authorities have the responsibility to promote training and to act as a catalyst by providing resources and specialized personnel where necessary. Such support is essential in developing countries.

Initial training, even under the best of conditions, cannot cover all foreseeable and unforeseeable situations. Consequently, occupational safety and health training is a long-term task, and one that is never completely finished.

Notes

¹ This chapter is based mainly on the Promotional Framework for Occupational Safety and Health Convention (No. 187), 2006, the Occupational Safety and Health Convention (No. 155), and Recommendation (No. 164), 1981, and the Safety and Health in Mines Convention, 1995 (No. 176).

NATIONAL SYSTEM FOR OCCUPATIONAL SAFETY AND HEALTH

5

A national OSH system comprises all the infrastructures, mechanisms and specialized human resources required to translate the principles and goals defined by the national policy into the practical implementation of national OSH programmes. In turn, one of the main aims of national OSH programmes should be to strengthen national OSH systems. An OSH system must respond to the effects of both socio-economic and technological changes on working conditions and environment, and so is not built just once but must be to be strengthened, reorganized and reoriented through a permanent cyclical process of reviews, performance evaluations, and readjustments of objectives and programmes or creation of new ones to meet new needs.

While legislation, tripartite collaboration, inspection and enforcement are the core components of any national OSH system, other elements are needed to make the system function adequately. For example, most employers, particularly those of small and even medium-sized enterprises, need assistance to understand and comply with OSH regulatory requirements, such as providing training to workers handling hazardous substances, conducting technical inspections of dangerous machinery or making OSH-related information available in the enterprise. Further support and services are required to promote good practice covering many other aspects of occupational safety and health that lie outside the legal sphere. According to Convention No. 187, to be functional and effective in addressing the OSH needs of both employers and workers, a national system must include at the least the following key elements:

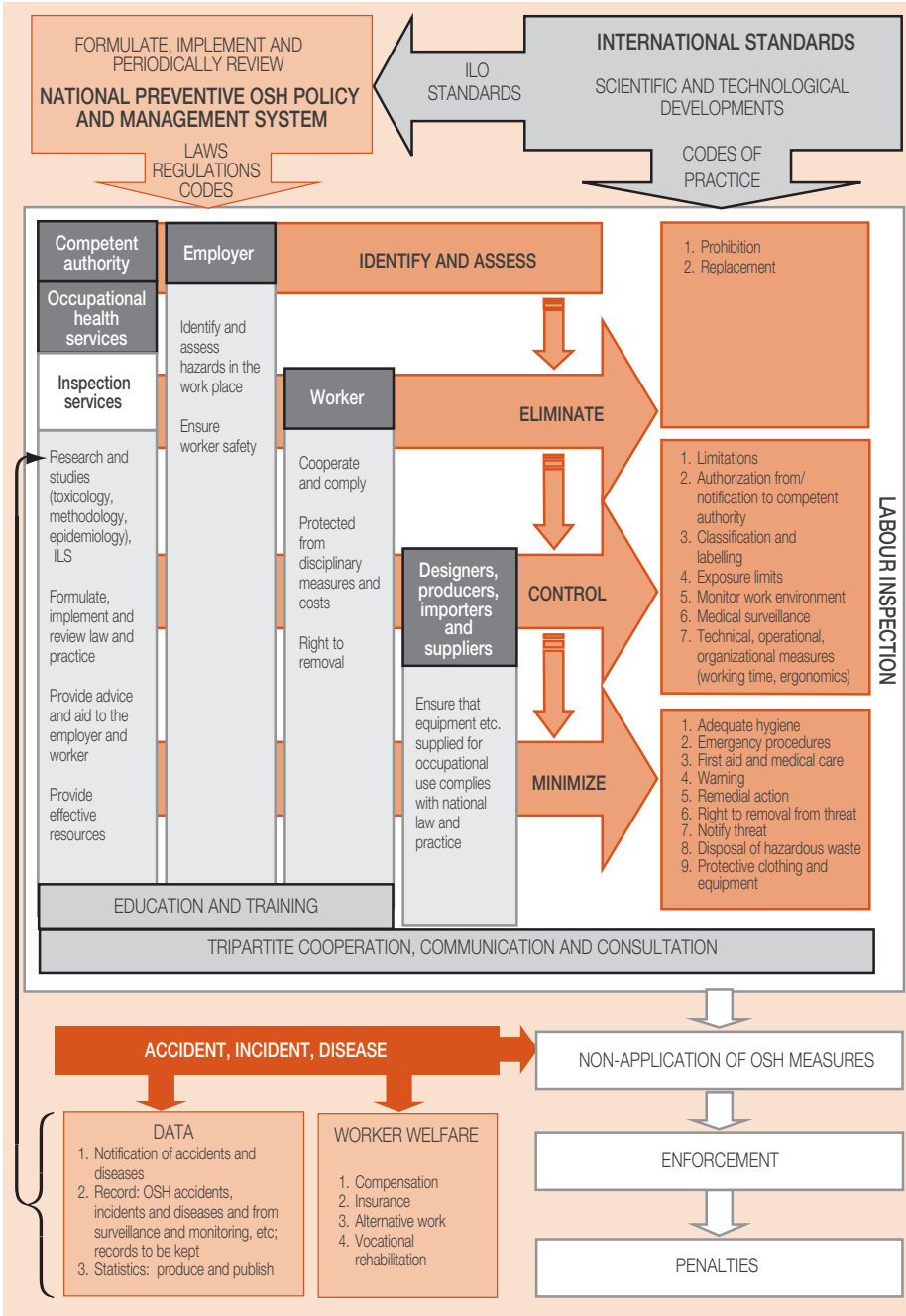
- laws, regulations, collective agreements where appropriate, and any other relevant instruments on occupational safety and health;
- an authority or authorities responsible for occupational safety and health, designated in accordance with national law and practice;

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- mechanisms for ensuring compliance with national laws and regulations, including systems of inspection;
- arrangements to promote, at the level of the undertaking, cooperation between management, workers and their representatives as an essential element of workplace-related prevention measures;
- a national tripartite body on occupational safety and health;
- information and advisory services on occupational safety and health;
- the provision of OSH training;
- the provision of occupational health services in accordance with national law and practice;
- research on occupational safety and health;
- mechanisms for the collection and analysis of data on occupational accidents and diseases, taking into account relevant ILO instruments;
- provisions for collaboration with relevant insurance and compensation schemes covering occupational accidents and diseases;
- support mechanisms for a progressive improvement of occupational safety and health conditions in micro-, small and medium-sized enterprises and in the informal economy.

Other additional elements are also required to complete a system adequate to deal with so complex an area as occupational safety and health. A national OSH system designed to incorporate all these elements is illustrated in figure 2.

Figure 2 National OSH system modelled from provisions in ILO OSH instruments



Source: ILO.

NATIONAL PROGRAMMES FOR OCCUPATIONAL SAFETY AND HEALTH

6

National programmes are strategic programmes with a predetermined time frame that focus on specific national priorities for occupational safety and health, identified through analysis of the national OSH system and an up-to-date national profile (see below). The aims of these programmes are to promote the development and maintenance of a preventive safety and health culture and to bring about continuous improvement in the weak or ineffective elements of the national OSH system, identified through monitoring and evaluation. The national programme is the “Act” element of the “Plan–Do–Check–Act” cycle which is at the heart of the systems management approach to occupational safety and health. If it is to be successful, it is essential that representative organizations of employers and workers, and of other interested parties when the need arises, are consulted. It is equally important that the programme is widely publicized and endorsed by the highest national authorities. While such programmes need clear objectives, targets and indicators, overall they should also aim to strengthen the national system for occupational safety and health to ensure that improvements are sustainable and to build and maintain a national preventive safety and health culture. In order to ensure that scarce resources are used effectively, the development of a national programme on occupational safety and health should include a number of logical steps:

- national tripartite agreement to establish a national programme on occupational safety and health;
- establishment of coordination mechanisms for the elaboration and implementation of the programme;
- preparation of a national profile on occupational safety and health;

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- analysis and identification of strong and weak points in the national system for occupational safety and health, using the national profile;
- identification of priorities for national action to improve occupational safety and health;
- development of action plans in a national programme on occupational safety and health, including indicators of success;
- launch of the national programme on occupational safety and health with the endorsement of the highest national authorities (to ensure occupational safety and health is placed high on the national agenda);
- establishment of sustainable mechanisms for review, updating of data and continual improvements in effectiveness;
- eventual designation of new priorities for action through the establishment of a new national programme on occupational safety and health based on an updated national profile on occupational safety and health.

A national profile on occupational safety and health

Once government, employers and workers have agreed to formulate a national programme on occupational safety and health, the first technical step is to carry out a review of the national OSH situation. This can best be done systematically by preparing a national profile on occupational safety and health. Such a national profile summarizes the existing OSH situation, including national data on occupational accidents and diseases, high-risk industries and occupations, and the description of national systems for occupational safety and health and other national means of acting in this area. The information to be included in the compilation of a national profile on occupational safety and health is described in the Promotional Framework for Occupational Safety and Health Recommendation, 2006 (No. 197). National profiles on occupational safety and health also facilitate systematic review of the improvements in national systems and programmes for occupational safety and health. A national profile on occupational safety and health should:

- be prepared at the country level through a process that involves the competent authority, all other designated authorities concerned with the various aspects of occupational safety and health, and, more importantly, the most representative organizations of employers and workers;
- include basic data on all the factors that may affect the sound management of occupational safety and health at both the national and

the enterprise level, including the existing legislative framework, available mechanisms and infrastructures for implementation and enforcement, workforce distribution, human and financial resources devoted to occupational safety and health, and OSH initiatives taken at the enterprise level and the level of protection afforded by them;

- provide practical information on activities under way at the country level (e.g. activities related to the implementation of international agreements, ongoing and planned technical assistance projects);
- enable a country to identify gaps in existing legal, institutional, administrative and technical infrastructure related to the sound management of occupational safety and health, taking into account relevant ILO Conventions, Recommendations and codes of practice;
- provide a means for improved coordination among all parties interested in occupational safety and health.

The process of preparing the profile may itself serve as a starting point for improved coordination. It should encourage communication between the various groups and bodies concerned, and foster an improved understanding of the potential problems within the country and the activities being undertaken to address them. A model outline for preparing a national profile is provided in Annex IV.

OCCUPATIONAL SAFETY AND HEALTH POLICY WITHIN THE ENTERPRISE¹

7

General framework

Since occupational accidents and work-related injuries to health occur at the individual workplace, preventive and control measures within the enterprise should be planned and initiated jointly by the employer, managers and workers concerned.

Measures for the prevention and control of occupational hazards in the workplace should be based upon a clear, implementable and well-defined policy at the level of the enterprise. This occupational safety and health policy represents the foundation from which occupational safety and health goals and objectives, performance measures and other system components are developed. It should be concise, easily understood, approved by the highest level of management and known by all employees in the organization.

The policy should be in written form and should cover the organizational arrangements to ensure occupational safety and health. In particular, it should:

- allocate the various responsibilities for OSH within the enterprise;
- bring policy information to the notice of every worker, supervisor and manager;
- determine how occupational health services are to be organized; and
- specify measures to be taken for the surveillance of the working environment and workers' health.

The policy may be expressed in terms of organizational mission and vision statements, as a document that reflects the enterprise's occupational safety and health values. It should define the duties and responsibilities of the

departmental head or the occupational safety and health team leader who will be the prime mover in the process of translating policy objectives into reality within the enterprise.

The policy document must be printed in a language or medium readily understood by the workers. Where illiteracy levels are high, clear non-verbal forms of communication must be used. The policy statement should be clearly formulated and designed to fit the particular organization for which it is intended. It should be circulated so that every employee has the opportunity to become familiar with it. The policy should also be prominently displayed throughout the workplace to act as a constant reminder to all. In particular, it should be posted in all management offices to remind managers of their obligations in this important aspect of company operations. In addition, appropriate measures should be taken by the competent authority to provide guidance to employers and workers to help them comply with their legal obligations. To ensure that the workers accept the safety and health policy objectives, the employer should establish the policy through a process of information exchange and discussion with them. A checklist for employers writing a safety and health policy is given in Annex V.

The policy should be kept alive by regular review. A policy may need to be revised in the light of new experience, or because of new hazards or organizational changes. Revision may also be necessary if the nature of the work that is carried out changes, or if new plant or new hazards are introduced into the workplace. It may also be necessary if new regulations, codes of practice or official guidelines relevant to the activities of the enterprise are issued.

Employers' responsibilities

The safety and health policy should reflect the responsibility of employers to provide a safe and healthy working environment. The measures that need to be taken will vary depending on the branch of economic activity and the type of work performed; in general, however, employers should:

- provide and maintain workplaces, machinery and equipment, and use work methods, which are as safe and without risk to health as is reasonably practicable (see box 13);
- ensure that, so far as reasonably practicable, chemical, physical and biological substances and agents under their control are without risk to health when appropriate measures of protection are taken;
- give the necessary instructions and training to managers and staff, taking account of the functions and capacities of different categories of workers;

Box 13 Hierarchy of preventive and protective measures

In taking preventive and protective measures, the employer should assess the risk and deal with it in the following order of priority:

- eliminate the risk;
 - control the risk at source;
 - minimize the risk by means that include the design of safe work systems;
 - in so far as the risk remains, provide for the use of personal protective equipment.
-
- provide adequate supervision of work, of work practices, and of the application and use of occupational safety and health measures;
 - institute organizational arrangements regarding OSH adapted to the size of the undertaking and the nature of its activities;
 - provide adequate personal protective clothing and equipment without cost to the worker, when hazards cannot be otherwise prevented or controlled;
 - ensure that work organization, particularly with respect to hours of work and rest breaks, does not adversely affect the safety and health of workers;
 - take all reasonable and practicable measures to eliminate excessive physical and mental fatigue;
 - provide, where necessary, for measures to deal with emergencies and accidents, including adequate first-aid arrangements;
 - undertake studies and research or otherwise keep abreast of the scientific and technical knowledge necessary to comply with the obligations listed above;
 - cooperate with other employers in improving occupational safety and health.

Workers' duties and rights

The cooperation of workers within the enterprise is vital for the prevention of occupational accidents and diseases. The enterprise's safety and health policy should therefore encourage workers and their representatives to play this essential role: specifically, it should ensure that they are given adequate

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information on measures taken by the employer to secure occupational safety and health, appropriate training in occupational safety and health, and the opportunity to enquire into and be consulted by the employer on all aspects of occupational safety and health associated with their work.

The policy should outline the duty of individual workers to cooperate in implementing the OSH policy within the enterprise. In particular, workers have a duty to:

- take reasonable care for their own safety and that of other persons who may be affected by their acts or omissions;
- comply with instructions given for their own safety and health, and those of others, and with safety and health procedures;
- use safety devices and protective equipment correctly (and not render them inoperative);
- report promptly to their immediate supervisor any situation which they have reason to believe could present a hazard and which they cannot themselves correct;
- report any accident or injury to health which arises in the course of or in connection with work.

Workers also have certain basic rights in respect of occupational safety and health, and these should be reflected in the enterprise's policy. In particular, workers have the right to remove themselves from danger, and to refuse to carry out or continue work which they have reasonable justification to believe presents an imminent and serious threat to their life or health. They should be protected from unforeseen consequences of their actions. In addition, workers should be able to:

- request and obtain, where there is cause for concern on safety and health grounds, inspections and investigations to be conducted by the employer and the competent authority;
- know about workplace hazards that may affect their health or safety;
- obtain information relevant to their health or safety, held by the employer or the competent authority; and
- collectively select safety and health representatives.

Access to better information is a prime condition for significant, positive contributions by workers and their representatives to occupational hazard control. The enterprise policy should make sure that workers are able to

obtain any necessary assistance in this regard from their trade union organizations, which have a legitimate claim to be involved in anything that concerns the protection of the life and health of their members.

Safety and health committees

Cooperation in the field of occupational safety and health between management and workers or their representatives at the workplace is an essential element in maintaining a healthy working environment. It may also contribute to the establishment and maintenance of a good social climate and to the achievement of wider objectives. Depending on national practice, this cooperation could be facilitated by the appointment of workers' safety delegates, or workers' safety and health committees, or joint safety and health committees composed equally of workers' and employers' representatives. Workers' organizations play a very important role in reducing the toll of accidents and ill health. One study found that establishments with joint consultative committees, where all employee representatives were appointed by unions, had significantly fewer workplace injuries than those where the management alone determined safety and health arrangements (Reilly, Paci and Holl, 1995).

The appointment of joint safety and health committees and of workers' safety delegates is now common practice, and can help to promote workers' active involvement in safety and health work. Furthermore, safety delegates are known to be effective in monitoring the safety and health aspects of shop-floor operations and in introducing corrective measures where necessary.

Joint safety and health committees provide a valuable framework for discussion and for concerted action to improve safety and health. They should meet regularly and should periodically inspect the workplace. Workers' safety delegates, workers' safety and health committees, and joint safety and health committees (or, as appropriate, other workers' representatives) should be:

- given adequate information on safety and health matters;
- enabled to examine factors affecting safety and health;
- encouraged to propose safety and health measures;
- consulted when major new safety and health measures are envisaged and before they are carried out;
- ready to seek the support of workers for safety and health measures;
- consulted in planning alterations of work processes, work content or organization of work which may have safety or health implications for workers;

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- given protection from dismissal and other measures prejudicial to them while exercising their functions in the field of occupational safety and health as workers' representatives or as members of safety and health committees;
- able to contribute to the decision-making process within the enterprise regarding matters of safety and health;
- allowed access to all parts of the workplace;
- able to communicate with workers on safety and health matters during working hours at the workplace;
- free to contact labour inspectors;
- able to contribute to negotiations within the enterprise on OSH matters;
- granted reasonable time during paid working hours to exercise their safety and health functions and to receive training related to these functions;
- able to have recourse to specialists for advice on particular safety and health problems.

Safety committees or joint safety and health committees have already been set up in larger enterprises in a number of countries.² Smaller firms sometimes group together to set up regional safety and health committees for each branch of activity. The most promising results seem to have been achieved when management has concentrated on increasing workers' awareness of their important role in safety and health and encouraged them to assume their responsibilities more fully.

Notes

¹ This chapter is based mainly on the Occupational Safety and Health Convention (No. 155), and Recommendation (No. 164), 1981, and the Safety and Health in Mines Convention, 1995 (No. 176).

² For more details, see ILO, 1998a.

MANAGEMENT OF OCCUPATIONAL SAFETY AND HEALTH¹

8

The protection of workers from occupational accidents and diseases is primarily a management responsibility, on a par with other managerial tasks such as setting production targets, ensuring the quality of products or providing customer services. Management sets the direction for the company. The strategic vision and mission statement establish a context for growth, profitability and production, as well as placing a value on workers' safety and health throughout the enterprise. The system for managing safety and health should be integrated within the company's business culture and processes.

If management demonstrates in words and action, through policies, procedures and financial incentives, that it is committed to workers' safety and health, then supervisors and workers will respond by ensuring that work is performed safely throughout the enterprise. Occupational safety and health should be treated not as a separate process, but as one that is integral to the way in which activities take place in the company. In order to achieve the objective of safe and healthy working conditions and environment, employers should institute organizational arrangements adapted to the size of the enterprise and the nature of its activities.

Management commitment and resources

While top management has the ultimate responsibility for the safety and health programme in an enterprise, authority for ensuring safe operation should be delegated to all management levels. Supervisors are obviously the key individuals in such a programme because they are in constant contact with the employees. As safety officers, they act in a staff capacity to help administer safety policy, to provide technical information, to help with training and to supply programme material.

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Total commitment on the part of management to making safety and health a priority is essential to a successful OSH programme in the workplace. It is only when management plays a positive role that workers view such programmes as a worthwhile and sustainable exercise. The boardroom has the influence, power and resources to take initiatives and to set the pattern for a safe and healthy working environment.

Management commitment to occupational safety and health may be demonstrated in various ways, such as:

- allocating sufficient resources (financial and human) for the proper functioning of the occupational safety and health programme;
- establishing organizational structures to support managers and employees in their OSH duties;
- designating a senior management representative to be responsible for overseeing the proper functioning of OSH management.

The process of organizing and running an OSH system requires substantial capital investment. To manage safety and health efficiently, adequate financial resources must be allocated within business units as part of overall running costs. The local management team must understand the value that corporate leaders place on providing a safe place of work for employees. There should be incentives for managers to ensure that resources are deployed for all aspects of safety and health. The challenge is to institutionalize safety and health within the planning process. Once the programme is under way, concerted efforts must be made to guarantee its sustainability.

Workers' participation

Cooperation between management and workers or their representatives within an enterprise is an essential element of prevention of accidents and diseases at the workplace. Participation is a fundamental workers' right, and it is also a duty. Employers have various obligations with regard to providing a safe and healthy workplace, and workers should, in the course of performing their work, cooperate in order to enable their employer to fulfil those obligations. Their representatives in the undertaking must also cooperate with the employer in the field of occupational safety and health. Employee participation has been identified as a key precondition of successful OSH management and a major contributing factor in the reduction of occupational diseases and injuries.

The full participation of workers in any OSH programmes designed for their benefit will not only ensure the efficacy of such measures, but will also

make it possible to sustain an acceptable level of safety and health at a reasonable cost. At the shop-floor level, workers and their representatives should be enabled to participate in the definition of issues, goals and resulting actions related to occupational safety and health.

Training

The continuous integration of improvements into the work process is vital, but it is possible only if everyone involved is properly trained. Training is an essential element in maintaining a healthy and safe workplace and has been an integral component of OSH management for many years. Managers, supervisory staff and workers all need to be trained. Workers and their representatives in the undertaking should be given appropriate training in occupational safety and health. It is up to management to give the necessary instructions and training, taking account of the functions and capacities of different categories of workers (see box 14). The primary role of training in occupational safety and health is to promote action. It must therefore stimulate awareness, impart knowledge and help recipients to adapt to their own roles.

Training in occupational safety and health should not be treated in isolation; it should feature as an integral part of job training and be incorporated into daily work procedures on the shop floor. Management must

Box 14 Management responsibilities in OSH training

It is the responsibility of management to:

- give each worker practical and appropriate instruction, taking account of his or her skills and professional experience, in each case defining the objective to be achieved in terms of ability to perform a specific function;
- provide training involving the acquisition of knowledge and know-how to be applied in a specific job and corresponding to the qualifications required; this may consist of initial training for entry to a particular trade or profession, or adaptive training associated with a modification of the workstation, the introduction of new methods or a transfer to another job;
- give refresher courses to update the knowledge acquired through training;
- provide further training, thus enabling workers to acquire new knowledge, supplement existing knowledge, or specialize in a particular area by acquiring more detailed knowledge.

ensure that all those who play a part in the production process are trained in the technical skills that they need to do their work. Training for the acquisition of technical skills should therefore always include an OSH component.

Organizational aspects

The control of occupational hazards and diseases requires adequate organizational measures. As there is no perfect model for an organizational structure, a choice has to be made by weighing up the anticipated merits and disadvantages of various systems. Moderation should be the guiding principle, and a step-by-step approach is likely to be more successful than an overambitious scheme that does not allow for subsequent adjustment.

Setting priorities

The first step is to establish priorities among objectives by assessing the main factors contributing to the hazards with the most severe consequences. High priority may also be allocated to actions that will produce rapid results, as early successes will enhance the credibility of efforts. Priorities may change from time to time, depending on the existing situation. It should be reiterated that cooperation between management and workers or their representatives within the enterprise is essential in ensuring the successful implementation of an organizational structure for occupational safety and health.

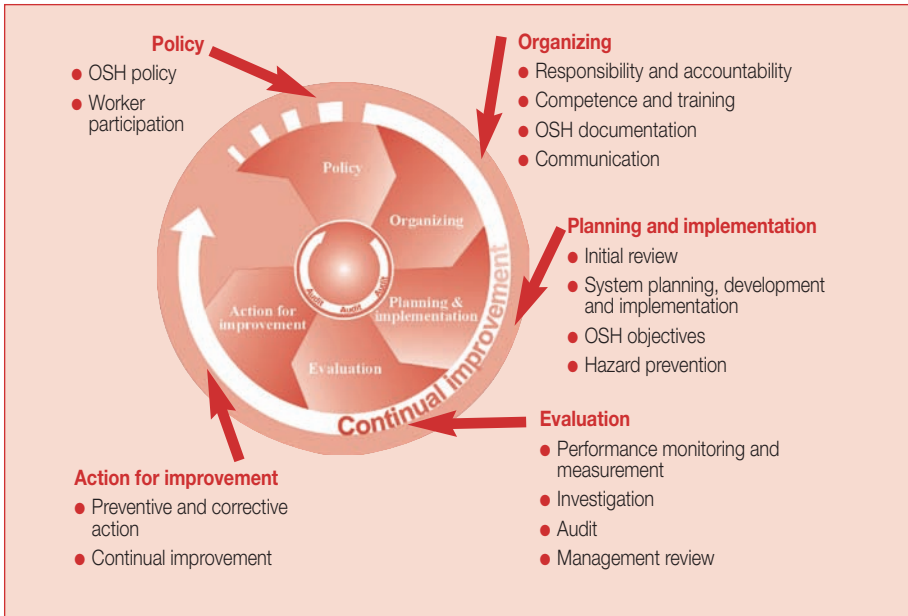
Planning and development activities

These need to be undertaken both initially, in setting up the occupational safety and health management system, and thereafter in its periodic revision and modification. Systems and procedures should be thought through logically, beginning with identification of where injury or ill health can occur, and moving on to the institution of measures that will make these outcomes less likely. Management should put in place organizational arrangements that are adapted to the size of the undertaking and the nature of its activities. Such arrangements should include the preparation of work procedures on the basis of job safety analysis. In this case, the person responsible should determine the safest, most effective way of performing a given task.

The place of OSH management in the enterprise

Occupational safety and health management should not be treated as a separate process, but be integrated into other workplace activities. Its various

Figure 3 The OSH management cycle



Source: ILO, 2001b.

functions and procedures should be embedded in other management system and business processes in the enterprise, as well as within comparable structures in the community. For example, occupational health services in a small enterprise could be integrated with the primary health care provided within the community. This would be of benefit to workers and their families.

Performance measures

It is essential that employers are able to measure OSH performance over time in order to check that there is a continuous improvement in eliminating occupational injuries and illness. Employers should regularly verify the implementation of applicable OSH standards, for instance by environmental monitoring, and should undertake systematic safety audits from time to time. Furthermore, they should keep records relating to occupational safety and health and the working environment, as specified by the competent authority. Such information might include records of all notifiable accidents and injuries to health which arise in the course of or in connection with work, lists of authorizations and exemptions under laws or regulations relating to the supervision of the health of workers in the enterprise, and data concerning exposure to specified substances and agents.

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A comprehensive evaluation system would include baseline evaluations, auditing, self-inspection and self-correction, incident investigation, medical surveillance and management review activities.

The OSH management cycle

The main elements of the OSH management system for the workplace, based on the ILO guidelines (ILO, 2001b), are shown in figure 3.

Note

¹ This chapter is based mainly on the Occupational Safety and Health Convention (No. 155), and Recommendation (No. 164), 1981, and the ILO's International Programme for the Improvement of Working Conditions (PIACT).

PART III

OPERATIONAL MEASURES

LEGISLATION, ENFORCEMENT AND COLLECTIVE AGREEMENTS¹

9

Appropriate legislation and regulations, together with adequate means of enforcement, are essential for the protection of workers' safety and health. Legislation is the very foundation of social order and justice; without it, or where it is not enforced, the door is wide open to all forms of abuse. Each country should therefore take such measures as may be necessary to protect workers' safety and health. This may be done by enacting laws or regulations, or by any other method consistent with national conditions and practice, undertaken in consultation with the representative organizations of employers and workers concerned. The law directly regulates certain components of working conditions and the work environment, including hours of work and occupational safety and health. There are also provisions relating to trade unions and collective bargaining machinery, which establish conditions for negotiations between employers and workers.

One of the greatest problems regarding labour legislation in many countries is its application in practice. It is therefore important for governments to take the necessary steps to ensure that there is an effective system of labour inspection to make certain that statutory requirements are met. This is often difficult because of a shortage of trained personnel. Another problem relates to the difficulty of dealing with new hazards, bearing in mind the speed at which technology is changing. In some cases such problems can be solved by employers and workers through collective bargaining. These two complementary approaches are outlined below.

Labour inspection

The enforcement of legal provisions concerning occupational safety and health and the working environment should be secured by an adequate and

appropriate system of inspection. The system should be guided by the provisions of the relevant ILO instruments,² without prejudice to the obligations of the countries that have ratified them.

As provided in Article 3(1) of the Labour Inspection Convention, 1947 (No. 81), the functions of the system of labour inspection should be:

- (a) to secure the enforcement of the legal provisions relating to conditions of work and the protection of workers while engaged in their work, such as provisions relating to hours, wages, safety, health and welfare, the employment of children and young persons, and other connected matters, in so far as such provisions are enforceable by labour inspectors;
- (b) to supply technical information and advice to employers and workers concerning the most effective means of complying with the legal provisions;
- (c) to bring to the notice of the competent authority defects or abuses not specifically covered by existing legal provisions.

For inspection to be taken seriously, labour legislation must be enforced systematically and forcefully. This may be a tall order in many countries because:

- legislation may not be sufficiently realistic;
- labour inspectors may have difficulty in imposing their authority;
- infrastructure facilities essential for inspection, such as adequate means of transport or communication, may not be available;
- procedures may be lengthy and costly.

It is therefore imperative to broaden national labour inspection activities to involve employers and workers more actively (see box 15), and to make greater efforts in the field of training.

It should be stressed that any further duties which may be entrusted to labour inspectors should not be such as to interfere with the effective discharge of their primary duties or to prejudice in any way the authority and impartiality that are necessary to inspectors in their relations with employers and workers. Also, the need for the labour inspectorate staff to be well trained cannot be overemphasized.

In view of the crucial role of labour inspection in implementing national OSH programmes, government authorities must strive to strengthen the inspectorate. Depending on national approaches and circumstances, appropriate measures necessary to achieve the above objectives may include:

Box 15 Cooperation between inspectors and workers

The Labour Inspection Convention, 1947 (No. 81) lays down standards for cooperation between inspectors and workers. In Article 5, the Convention states:

The competent authority shall make appropriate arrangements to promote ... collaboration between officials of the labour inspectorate.

In addition, Article 5 of the accompanying Recommendation (No. 81) states that representatives of the workers and the management should be authorized to “collaborate directly with officials of the labour inspectorate”.

- improving the capacity to secure the enforcement of legal provisions;
- supplying technical information and advice;
- identifying new needs for action;
- increasing the number of inspectors;
- improving the training of inspectors in support of their enforcement and advisory roles;
- integrating separate inspection units or functions and using multidisciplinary inspection teams;
- fostering closer cooperation between labour inspectors and employers, workers and their organizations;
- improving systems for gathering and reporting statistics on occupational accidents and diseases, and the inclusion of the resulting data in the annual inspection report;
- improved support facilities, institutions and other material arrangements.

The labour inspectorate must have an adequate and well-trained staff, be provided with adequate resources, have an effective presence at the workplace, and be capable of taking decisive action by being severe, persuasive or explanatory, depending on the case.

It must be stated in conclusion that the conditions for an effective labour inspectorate, set out above, are very hard to attain in many countries of the world (see box 16). The reasons are not difficult to understand, and include scarce resources, especially in countries undergoing various programmes of economic reform, and the low priority given to OSH issues in the face of other competing demands. There is therefore very little justification for

Box 16 Some problems of labour inspection

A meeting of labour inspection experts dealing with child labour, organized by the ILO in 1999, made some broad observations of general interest to labour inspectors. The first problem identified was the lack of resources:

In developing countries generally there was a great shortage of human and material resources to carry out the functions of labour inspection. There were perhaps genuine intentions to apply the law, but performance failed to measure up to these intentions. Posts existed but qualified inspectors could not be found and there were insufficient funds for training and purchasing equipment.

Another problem was interference from vested interests:

Although Article 4 of Convention No. 81 was clear in stating that labour inspection should, if national law and practice so permitted, come under one central authority, some countries varied in the extent to which labour inspection was organized under a central, regional or local body. The further labour inspection was removed from this central authority, the greater the risk of involvement of vested interests in decisions affecting its independence. Pressure to change the manner of organizing had often occurred because of the perceived costs of running labour inspection without highlighting the benefits also in economic terms. This had been a particular issue in developing countries because of the regular requirement of many structural adjustment programmes to cut public expenditure and reduce public services more or less drastically. The impact on the independence and operation of labour inspection was therefore largely negative, with obvious consequences also for the ability of inspectors to meet the challenge of combating child labour.

Source: ILO: *Labour inspection and child labour*, Report of the Meeting of Experts on Labour Inspection and Child Labour, Geneva, 27 Sept.–1 Oct. 1999, pp. 5–6, para. 27; p. 8, para. 38.

maintaining two parallel inspection systems, a practice that is still being observed in some countries. It is certainly more cost-effective to have an integrated system of inspection, whereby labour inspectors are also trained in safety and health issues. The mechanisms for achieving this process should be embodied in the national policy on occupational safety and health.

Collective bargaining

Since legislative processes are slow, collective agreements are particularly suitable for laying down requirements with respect to working conditions and the work environment in an enterprise. Collective bargaining is one of the most important and effective means of bringing about improvements in this field and should therefore be encouraged and promoted. It reflects the experience and interests of the employers and workers concerned, as well as the economic, technical and social realities of particular trades, branches of

activity or enterprises. As Article 4 of the Right to Organise and Collective Bargaining Convention, 1949 (No. 98), provides:

Measures appropriate to national conditions shall be taken, where necessary, to encourage and promote the full development and utilisation of machinery for voluntary negotiation between employers or employers' organisations and workers' organisations, with a view to the regulation of terms and conditions of employment by means of collective agreements.

Collective agreements are more flexible than legislation and are better adapted to local problems concerning working conditions and the environment, or the technical and economic problems of a given sector. They may also stipulate flexible procedures to resolve conflicts arising out of their application, as well as setting agreed time limits for their revision. With regard to occupational safety and health, collective agreements have been used in many contexts to bring about genuine progress and a tangible improvement in workers' conditions. This process is becoming increasingly common in small and medium-sized enterprises, especially where improvement in occupational safety and health is seen to be linked not just to health issues, but also to increased productivity, higher-quality products and better morale among workers.

Another possible forum for the discussion of working conditions and the environment is that of works committees or other similar bodies. The names and remits of these bodies vary from country to country: they may deal with a wide range of issues (works committees, works councils) or specific problems or areas (occupational safety and health committees). They may either be bilateral (composed of a variable number of workers' and management representatives) or consist of delegates elected by the workers or nominated by trade unions.

Notes

¹ This chapter is based mainly on the Labour Inspection Convention, 1947 (No. 81), and Protocol, 1995, the Right to Organize and Collective Bargaining Convention, 1949 (No. 98), the Labour Inspection (Agriculture) Convention, 1969 (No. 129), the Occupational Safety and Health Convention (No. 155), and Recommendation (No. 164), 1981, and the ILO's International Programme for the Improvement of Working Conditions (PIACT).

² See n. 1 above.

Since the consequences of occupational hazards may not become apparent for many years, it is important to identify potential dangers early before they result in incurable diseases. The methods for identifying occupational hazards and the health problems associated with them can be broadly listed as environmental assessment, biological monitoring, medical surveillance and epidemiological approaches. Similar methods should be used to identify potential risks of accident. Some of the terminology associated with surveillance is explained in box 17.

Box 17 Surveillance, work and health

Information about conditions in the working environment and the health of workers – which is necessary for planning, implementing and evaluating OSH programmes and policies – is gathered through ongoing, systematic surveillance. Different types of surveillance address the various aspects of work and health. Some activities focus principally on the health of workers themselves, while others explore the various factors in the work environment that may have negative impacts on health. Whatever the approach taken, researchers must meet minimum requirements with regard to workers' sensitive health data.

Workers' health surveillance entails procedures for the assessment of workers' health by means of detection and identification of any abnormalities. Such procedures may include biological monitoring, medical examinations, questionnaires, radiological examinations and reviews of workers' health records, among others.

/cont'd

Box 17 Surveillance, work and health (/cont'd)

Working environment surveillance involves identification and assessment of environmental factors that may affect workers' health, such as the state of occupational hygiene and sanitation, organization of work, personal protective equipment and control systems, and workers' exposure to hazardous substances. Such surveillance may focus on accident and disease prevention, ergonomics, occupational hygiene, organization of work and psycho-social factors, among others.

For more information, see ILO, 1999a.

Surveillance of the working environment

General framework

To ensure a healthy working environment there must be monitoring at the workplace. This involves systematic surveillance of the factors in the working environment and working practices which may affect workers' health, including sanitary installations, canteens and housing, where these facilities are provided by the employer, as well as ensuring the working environment complies with safety and health standards.

Everyone associated with the workplace – from the most junior worker right through to the employer – should be actively involved in the surveillance of the working environment. Basic surveillance is carried out by simple observation, and every worker, from shop floor to senior administration, should be trained to identify those factors (potential or actual) which may affect workers' health. Such training is necessary to enable the worker to report immediately to his or her direct supervisor any situation which can reasonably be thought to present an imminent and serious danger to life or health. In such a situation, the employer cannot require the worker to return to work until any necessary remedial action is taken.

Simple observation (a walk-through survey) of work processes and the working environment is the first step in any surveillance. Such observation may be sufficient in some cases to detect a lack of adequate control measures and exposure of workers to risk. An evaluation based on this type of observation may justify the recommendation of control measures without the need for any more sophisticated determination of the level of exposure. Repeat visits to the workplace and walk-through observation are also necessary to provide an assurance that no deterioration has occurred at workplaces initially evaluated as satisfactory.

Information from surveillance of the working environment should be combined with other data, such as epidemiological research or exposure limits, to assess occupational health risks. For definitions of the main concepts involved in risk assessment, see box 18.

An approach which is gaining widespread support is the *precautionary principle*, derived from Principle 15 of the 1992 Rio Declaration on Environment and Development. Simply stated, this principle asserts the need to foresee and forestall damaging human activities before science delivers

Box 18 Risk assessment

Risk assessment is an increasingly popular tool for analysing workplace hazards. The method rests upon clear definitions of the two terms HAZARD and RISK.

HAZARD is defined as:

the potential to cause harm – which can include substances or machines, methods of work or other aspects of organization.

RISK is defined as:

the *likelihood* that the harm from a particular hazard is realized.

Further important definitions are:

Likelihood of occurrence (probability):

- low: remote or unlikely to occur;
- medium: will occur in time if no preventive action is taken;
- high: likely to occur immediately or in the near future.

Consequence (severity):

- low: may cause minor injury/illness – no lost time;
- medium: may cause lost time through injury/illness;
- high: may cause serious or fatal injury/illness.

Using these definitions, a risk matrix can be constructed.

For example, when there is a high likelihood that workers will be exposed to a hazard, and the consequences are high, then that work, process or chemical would have a high “score” and urgent action should be taken.

irrefutable proof that there is a problem. We have seen many cases where concerns about a substance or process have been brushed aside with the response that there is no proof that it is harmful. By the time proof is established, hundreds, if not thousands, of people may have died, or suffered irreversible damage to their health.

When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. This is articulated in four points:

- people have a duty to take anticipatory action to prevent harm;
- the burden of proof of harmlessness of a new technology, process, activity or chemical lies with the activity's proponents, not with the general public;
- before using a new technology, process or chemical, or starting a new activity, people have an obligation to examine a full range of alternatives, including the option of doing nothing;
- decisions applying the precautionary principle must be open, informed and democratic, and must include affected parties.

The precautionary principle has now been incorporated into some international treaties and some national laws (e.g. Sweden's chemical laws and the laws of some American states).

Monitoring of exposure

There may be special health hazards which require particular monitoring. Where this is the case, surveillance programmes should include the monitoring of workers' exposure to such hazards. The main objectives of such monitoring are to:

- identify real hazards;
- determine the level of workers' exposure to harmful agents;
- prove compliance with regulatory requirements;
- assess the need for control measures; and
- ensure the efficiency of control measures in use.

The above objectives can be achieved by carrying out occupational health surveys in addition to routine monitoring programmes. Occupational health surveys are defined as investigations of environmental conditions in the workplace, conducted primarily to determine the nature and extent of any condition that may adversely affect the well-being of people working there.

Such surveys are necessary to develop the engineering and medical control measures needed to eliminate or avoid harmful situations.

There are two types of occupational health survey:

- the walk-through survey, which is made for the purpose of selecting any locations in the plant where workers are exposed to hazards, so that this exposure can then be evaluated by analytical studies in order to determine whether additional control is necessary; and
- the comprehensive occupational health survey, which involves the use of sophisticated monitoring equipment and entails detailed planning and execution.

In a situation where workers are exposed to hazardous substances, for example airborne toxic chemicals, the employer should:

- limit exposure to such substances so as to protect the health of workers; and
- assess, monitor and record the concentration of substances at the workplace.

The monitoring of exposure should be carried out in accordance with the requirements of the competent authority (see below). Monitoring should be performed and assessed by trained and experienced people, in accordance with recognized and scientifically accepted methods.

The monitoring strategy should assess both the current situation and the possible effect of technological changes or control measures, for example on the concentration of air pollutants, and be conducted with a number of specific aims in view (box 19).

Box 19 Aims of a monitoring strategy for air pollutants

Monitoring of exposure should ensure that:

- specific operations where exposure may occur are identified and levels of exposure are quantified;
- exposure to air pollutants does not exceed exposure limits set or approved by the competent authority;
- effective preventive measures are implemented for all applications and in all jobs;
- any changes in manufacturing, use or work practices do not lead to increased exposure to air pollutants; and
- supplementary preventive measures are developed as necessary.

Occupational exposure limits (OELs)

One of the responsibilities of the competent authority is to establish the criteria for determining the degree of exposure to hazardous substances or agents, and where appropriate to specify levels as indicators for surveillance of the working environment, with a view to implementing the technical preventive measures required. Furthermore, the competent authority is required to prescribe limits for the exposure of workers to hazardous substances, for example solvent vapours, or asbestos. Exposure limits exist also in respect of physical hazards such as noise, radiation, heat and cold. Such exposure limits or criteria for determining the degree of exposure must be not only fixed but periodically reviewed and updated in the light of technological progress and advances in technological and scientific knowledge. The ILO International Occupational Safety and Health Information Centre (CIS) compiles and maintains a database of the OELs for chemicals from many countries, and makes it available on its Internet site.²

The OELs are usually expressed as time-weighted average concentrations over an eight- or sometimes 12-hour shift and, where necessary, short-term peak concentrations. In practice, the concentration of air pollutants cannot be measured at all workstations and at all times. A limited number of representative air samples are usually taken in order to estimate the average concentration of the pollutants in the workplace. This concentration can then be compared with the exposure limit. The sampling site and duration should be selected so as to ensure that the results are representative. The sampling should be carried out at fixed sites (area sampling) or at the breathing zone of the worker (personal sampling). Unless self-reading instruments are used, the samples will have to be analysed later by appropriate methods.

OELs are not a simple mechanism. There are a number of reservations which must be borne in mind:

- Exposure limits are based implicitly on a “standardized” 70 kg North American male worker: this is a body weight greater than most women workers and most male Asian workers, for example. The exposure limit for the latter categories of worker should therefore be set at a lower level than the American-based standards that are often used as the norm.
- OELs do not represent a sharp dividing line between “safe” and “hazardous” levels.
- The absence of a substance from tables and lists produced by a competent authority should not be taken as evidence that it is safe. There are many substances for which no limits exist.

Box 20 Responsibilities of staff involved in the surveillance of the working environment

Staff involved in the surveillance of the working environment are responsible for:

- conducting surveys of the working environment;
 - interpreting the data gathered during the survey;
 - keeping records;
 - preparing appropriate control measures;
 - preparing adequate warnings;
 - suggesting precautions where dangers exist;
 - advising management on industrial hygiene;
 - educating workers and the community at large on basic occupational safety and health;
 - conducting epidemiological studies to uncover the presence of occupation-related illness and injury.
- Limits are based on the assumption that exposure is limited to one substance only. However, in many workplaces there will be a variety of chemicals, forming a “cocktail” which may represent a greater danger than any single substance.
 - Other factors, such as high temperature and humidity, long hours of work and ultra-violet radiation, may increase the toxic effect of a substance.

The surveillance of the working environment should be carried out in liaison with other technical services in the enterprise, and in cooperation with the workers concerned and with their representatives in the enterprise or, where such a body exists, the safety and health committee. Occupational health monitoring services should be able to call on sufficient technical expertise in relevant fields (box 20). The evaluation of pollution levels and workers’ exposure requires specialist knowledge. Such evaluation should therefore be carried out by, or in close cooperation with, an experienced industrial hygienist.

Record-keeping

The results of workplace monitoring should be collected and presented in a standardized way. Employers should keep the records of the monitoring of

exposure for the period determined by the competent authority. This is to enable the assessment of any possible relation between later health impairment and exposure. For example, in cases of exposure to silica, coal, asbestos or carcinogenic substances, it may be necessary to keep records for several decades. Arrangements should also be made by the competent authority to conserve the records in an archive, so that they remain available even if an enterprise should close down. Records should include all relevant data, such as details of the site, product, manufacturer and methods of use, including whether personal protective clothing or equipment was available and whether it was actually worn. Workers and their representatives and the competent authority should have access to the monitoring records.

Surveillance of workers' health

General framework

The surveillance of workers' health entails medical examinations of workers to ensure that their state of health is compatible with their job assignment and that their occupational exposure to hazards does not have any detrimental effects on their health. Health examinations also help to identify conditions which may make a worker more susceptible to the effects of hazardous agents and to detect early signs of health impairment caused by them. Their main purpose is primary prevention of work-related injuries and diseases. Surveillance should be carried out in consultation with the workers or their representatives, and should not result in any loss of earnings for them. Furthermore, medical examinations should be free of charge and, as far as possible, should take place during working hours.

Workers' health surveillance at national, industry and enterprise levels should be organized so as to take into account several factors, including:

- the need for a thorough investigation of all work-related factors;
- the nature of occupational hazards and risks in the workplace which may affect workers' health;
- the health requirements of the working population;
- the relevant laws and regulations and the available resources;
- the awareness of workers and employers of the functions and purposes of such surveillance; and
- the fact that surveillance is not a substitute for monitoring and control of the working environment.

Medical examinations, health assessments and biological tests

Workers who are or have been exposed to occupational hazards, such as asbestos, should be provided with such medical examinations as are necessary to supervise their health in relation to those occupational hazards, and to diagnose occupational diseases caused by exposure to them.

Surveillance of workers' health in the form of medical screening or periodic medical examinations often leads to the identification of occupational hazards or diseases. It has been shown that special prescriptive surveys to detect ill health among the working population generally prove more rewarding in terms of avoiding or controlling hazards than a series of medical tests performed at a later stage to identify or confirm suspected occupational disease. Cases of occupational disease often remain "latent" (silent) among the labour force. As a condition slowly develops, workers adapt to it, and are often unwilling to report illness that may result in the loss of their jobs.

Health examinations of workers frequently reveal the existence of health hazards in the workplace, and in such cases the necessary environmental evaluation and control measures must be implemented.

The importance of workers' health surveillance is clearly stated in paragraph 11 of the Occupational Health Services Recommendation, 1985 (No. 171), which provides as follows:

Surveillance of the workers' health should include, in the cases and under the conditions specified by the competent authority, all assessments necessary to protect the health of the workers, which may include:

- (a) health assessment of workers before their assignment to specific tasks which may involve a danger to their health or that of others;
- (b) health assessment at periodic intervals during employment which involves exposure to a particular hazard to health;
- (c) health assessment on resumption of work after a prolonged absence for health reasons for the purpose of determining its possible occupational causes, of recommending appropriate action to protect the workers and of determining the worker's suitability for the job and needs for reassignment and rehabilitation;
- (d) health assessment on and after the termination of assignments involving hazards which might cause or contribute to future health impairment.

Pre-assignment medical examinations are carried out before the placement of workers in jobs or their assignment to specific tasks which may involve a danger to their health or that of others. The purpose of such an examination is to determine in what capacity the prospective employee can be utilized most

efficiently without detriment to himself or herself or to fellow workers. The scope of pre-assignment medical examination is influenced by such factors as the nature and location of the industry, as well as by the availability of the services of physicians and nurses. Regardless of the size of the enterprise, it is advisable to conduct such examinations for all prospective employees. In the case of young people, such pre-assignment medical examinations are prescribed by specific ILO Conventions.

The pre-assignment medical examination provides clinical information and laboratory data on the worker's health status at the moment of entering employment. It is also important with regard to the worker's subsequent occupational history, as it provides a baseline for the evaluation of any changes in health status that may occur later on. The results of pre-assignment medical examinations should be used to help place workers in jobs which are compatible with the status of their health, and not to screen out workers. In some cases, prospective employees who are found to be HIV-positive may be refused employment on the basis of their health status, or those already in employment may be summarily dismissed. These practices should not be condoned.

Periodic health evaluations are performed at appropriate intervals during employment to determine whether the worker's health remains compatible with his or her job assignment and to detect any evidence of ill health attributed to employment. Their objectives include:

- identifying as early as possible any adverse health effects caused by work practices or exposure to hazards; and
- detecting possible hazards.

Changes in the body organs and systems affected by harmful agents can be detected during the periodic medical examination, usually performed after the worker has been employed long enough to have been exposed to any such hazards in the workplace. The worker may be physically fit, showing no signs of impairment and unaware of the fact that the substances he or she works with daily are slowly poisoning his or her system. The nature of the exposure and the expected biological response will determine the frequency with which the periodical medical examination is conducted. It could be as frequent as every one to three months, or it could be carried out at yearly intervals.

A *return-to-work health assessment* is required to determine whether a worker is fit to resume his or her duties after a prolonged absence for health reasons. Such an assessment might recommend appropriate actions to protect the worker against future exposure, or may identify a need for reassignment or special rehabilitation. A similar assessment is performed on a worker who changes job, with a view to certifying him or her fit for the new duties.

Post-assignment health examinations are conducted after the termination of assignments involving hazards which could cause or contribute to future health impairment. The purpose is to make a final evaluation of workers' health and compare it with the results of previous medical examinations to see whether the job assignments have affected their health.

In certain hazardous occupations, the competent authority should ensure that provision is made, in accordance with national law and practice, for appropriate medical examinations to continue to be available to workers after the termination of their assignment.

At the conclusion of a prescribed health assessment, workers should be informed in a clear and appropriate manner, by the attending physician, of the results of their medical examinations and receive individual advice concerning their health in relation to their work. When such reports are communicated to the employer, they should not contain any information of a medical nature. They should simply contain a conclusion about the fitness of the examined person for the proposed or held assignment and specify the kinds of jobs and conditions of work which he or she should not undertake, for medical reasons, either temporarily or permanently.

When continued assignment to work involving exposure to hazardous substances is found to be medically inadvisable, every effort, consistent with national conditions and practice, should be made to provide the workers concerned with other means of maintaining an income. Furthermore, national laws or regulations should provide for the compensation of workers who contract a disease or develop a functional impairment related to occupational exposure, in accordance with the Employment Injury Benefits Convention, 1964 (No. 121).

It must be mentioned that there are limitations to medical examinations, especially in developing countries, where generally the provision and coverage of health services is poor and there are relatively very few doctors. In these conditions, the heavy workload and other limitations often inhibit the thoroughness of medical examinations.

Where workers are exposed to specific occupational hazards, special tests are needed. These should be carried out in addition to the health assessments described above. The surveillance of workers' health should thus include, where appropriate, any other examinations and investigations which may be necessary to detect exposure levels and early biological effects and responses.

The analysis of biological samples obtained from the exposed workers is one of the most useful means of assessing occupational exposure to a harmful material. This analysis may provide an indication of the amount of substance that has accumulated or is stored in the body, the amount circulating in the blood, or the amount being excreted. There are several valid and generally

accepted methods of biological monitoring which allow for the early detection of the effects on workers' health of exposure to specific occupational hazards. These can be used to identify workers who need a detailed medical examination, subject to the individual worker's consent. Urine, blood and saliva are the usual body fluids examined for evidence of past exposure to toxic (harmful) agents. Lead concentrations in the urine or blood have long been used as indices of lead exposure.

Most biological monitoring measures are invasive procedures which may be undertaken only with legal permission. Moreover, many countries lack the laboratory facilities and other resources necessary to carry out such tests. Consequently, priority should be given to environmental criteria over biological criteria in setting exposure limits, even though biological monitoring has certain advantages over environmental sampling. Biological monitoring takes account of substances absorbed through the skin and gastrointestinal tract (stomach), and the effects of added stress (such as increased workload resulting in a higher respiration rate with increased intake of the air contaminant) will also be reflected in the analytical results. Furthermore, the total exposure (both on and off the job) to harmful materials will be accounted for. Biological monitoring should not, however, be a substitute for surveillance of the working environment and the assessment of individual exposures. In assessing the significance of the results of biological monitoring, values commonly found in the general public should be taken into account.

Sickness absence monitoring

The importance of keeping a record of absence from work because of sickness is well recognized in various countries. Monitoring sickness absence can help identify whether there is any relation between the reasons for ill health or absence and any health hazards which may be present at the workplace. Occupational health professionals should not, however, be required by the employer to verify the reasons for absence from work. Their role is rather to provide advice on the health status of the workforce in the enterprise and on medical problems which affect attendance and fitness for work. Occupational health professionals should not become involved in the administrative management and control of sickness absence, but it is acceptable for them to provide advice on medical aspects of sickness cases, provided that medical confidentiality is respected.

Reporting of occupational accidents, injuries and diseases

One of the tasks of the competent authority is to ensure the establishment and application of procedures for the notification of occupational accidents

and diseases by employers and, when appropriate, insurance institutions and others directly concerned, as well as the production of annual statistics on occupational accidents and diseases. Consequently, national laws or regulations in many countries provide for:

- the reporting of occupational accidents and diseases to the competent authority within a prescribed time;
- standard procedures for reporting and investigating fatal and serious accidents, as well as dangerous occurrences; and
- the compilation and publication of statistics on accidents, occupational diseases and dangerous occurrences.

This compulsory reporting is usually carried out within the framework of programmes for the prevention of occupational disease and injury or for the provision of compensation or benefits. In other countries there are voluntary systems for reporting occupational injury and disease. In either case, the competent authority is responsible for developing a system of notification of occupational diseases, in the case of asbestos for example. It must be acknowledged that occupational diseases are usually less well recorded than occupational accidents since the factors of recognition set out in the list of notifiable diseases differ from one country to another. Countries could use the ILO code of practice *Recording and notification of occupational accidents and diseases* (1995) as a basis for developing their own systems.

Whatever the system developed, it is the responsibility of the employer to present a detailed report to the competent authority within a fixed period of any accident or disease outbreak that results in a specified amount of lost working time (in many countries, three or four days). After a major accident, for example, the employer must submit a report containing an analysis of the causes of the accident and describing its immediate on-site consequences, as well as indicating any action taken to mitigate its effects. It is equally the responsibility of the employer to keep records of relevant occupational accidents and diseases. In this respect, it is worth pointing out that good record-keeping is beneficial to the company in many ways (see box 21).

In many countries, lists of notifiable occupational diseases have been established by statute. The records of notified diseases give administrators some idea of the extent and types of occupational pathology. This presupposes that medical practitioners are sufficiently well informed to make such diagnoses accurately and are prepared to cooperate with the authorities, which unfortunately is not always the case: some doctors may try to cover for employers for fear of losing their own jobs. Workers' compensation schemes

Box 21 **Some benefits of good record-keeping**

- The company is able to assess the economic impact of accidents in terms of production time lost, damage to machinery or raw materials, product liability and increased premiums paid to the workers' compensation insurance fund.
- Having assessed the economic consequences and the types of accidents that most frequently occur at its workplace, the company can identify "high-risk" occupations and processes and devise better accident prevention strategies in future to minimize or eliminate accidents at work.
- An accident-free workplace enhances worker morale, improves worker–management relationships, and leads to increased productivity and fewer industrial disputes.
- The public image of a company improves if there are few or no accidents, and this will have a positive effect on the sale of its products.
- If a proper register of accidents is kept, the company will have nothing to fear when inspectors visit to inspect or investigate accidents.

operated by ministries of labour also have lists covering occupational injuries for which compensation may be claimed.

Where an occupational disease has been detected through the surveillance of the worker's health, it should be notified to the competent authority, in accordance with national law and practice. The employer, workers and workers' representatives should be informed that this notification has been carried out. Specifically, the labour inspectorate, where it exists, should be notified of industrial accidents and occupational diseases in the cases and in the manner prescribed by national laws and regulations.

Ethical and legal issues

The surveillance of workers' health should be based not only on sound technical practice, but on sound ethical practice as well. This requires that a number of conditions be met (box 22) and workers' rights respected. In particular, workers subject to health monitoring and surveillance should have:

- the right to confidentiality of personal and medical information;
- the right to full and detailed explanations of the purposes and results of the monitoring and surveillance; and
- the right to refuse invasive medical procedures which infringe their corporeal integrity.

Box 22 Conditions governing workers' health surveillance

- Provisions must be adopted to protect the privacy of workers and to ensure that health surveillance is not used for discriminatory purposes or in any other manner prejudicial to workers' interests.
- Each person who works in an occupational health service should be required to observe professional secrecy as regards both medical and technical information which may come to his or her knowledge in connection with the activities of the service, subject to such exceptions as may be provided for by national laws or regulations.
- Occupational health services should record data on workers' health in personal confidential health files which should also contain information on jobs held by workers, on exposure to occupational hazards involved in their work, and on the results of any assessments of workers' exposure to these hazards.
- Although the competent authority may have access to data resulting from the surveillance of the working environment, such data may only be communicated to others with the agreement of the employer and the workers or their representatives in the enterprise or the safety and health committee.
- Personal data relating to health assessments may be communicated to others only with the informed consent of the worker concerned.

Notes

¹ This chapter is based mainly on the Occupational Cancer Recommendation, 1974 (No. 147), the Occupational Safety and Health Convention, 1981 (No. 155), the Occupational Health Services Convention (No. 161), and Recommendation (No. 171), 1985, the Asbestos Convention, 1986 (No. 162), and the Chemicals Recommendation, 1990 (No. 177).

² International Occupational Safety and Health Information Centre (CIS), chemical exposure limits database: <http://www.ilo.org/public/english/protection/safework/cis/products/explim.htm>.

General considerations

Occupational health services are defined as services entrusted with essentially preventive functions. According to the Occupational Health Services Convention, 1985 (No. 161), they are responsible for advising the employer, the workers and their representatives in the workplace on:

- (i) the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work;
- (ii) the adaptation of work to the capabilities of workers in the light of their state of physical and mental health. (Article 1(a))

It is desirable that some sort of occupational health services be established in every country. This may be done by laws or regulations, or by collective agreements, or as otherwise agreed upon by the employers and workers concerned, or in any other manner approved by the competent authority after consultation with the representative organizations of employers and workers concerned.

The coverage of workers by occupational health services varies widely, ranging from 5–10 per cent at best in the developing world up to 90 per cent in industrialized countries, especially those in Western Europe. There is therefore a universal need to increase worker coverage throughout the world.

Ideally, each country should progressively develop occupational health services for all workers, including those in the public sector and members of production cooperatives, in all branches of economic activity and in all enterprises. The occupational health services provided should be adequate and

Fundamental principles of occupational health and safety

appropriate to the specific health risks of the enterprises. These services should also include the necessary measures to protect self-employed persons and those working in the informal sector. To that end, plans should be drawn up to effect such measures and to evaluate progress made towards their implementation. The main concepts involved in occupational health are defined in box 23.

Box 23 Concepts in occupational health

Numerous concepts dealing with the interaction between work and health underpin occupational safety and health programmes.

In relation to work, “health” does not merely mean the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety and hygiene at work.

Occupational health practice is a broad concept, and includes *occupational health services*, which are defined in Article 1(a) of the Occupational Health Services Convention, 1985 (No. 161). It involves activities for the protection and promotion of workers’ health and for the improvement of working conditions and environment carried out by occupational safety and health professionals as well as other specialists, both within the enterprise and without, as well as workers’ and employers’ representatives and the competent authorities. Such multisectoral and multidisciplinary participation demands a highly developed and coordinated system in the workplace. Administrative, operative and organizational systems must be in place to conduct occupational health practice successfully.

Occupational health care is another broad concept; it encompasses all the people and programmes directly or indirectly involved in making the work environment healthy and safe. It includes practical, enterprise-level efforts aimed at achieving adequate occupational health, such as preventive health care, health promotion, curative health care, first aid, rehabilitation and compensation, as well as strategies for prompt recovery and return to work. Primary health care can also be considered as playing a part. *Occupational hygiene* (sometimes also known as *industrial hygiene*) is the art and science of protecting workers’ health through control of the work environment; it encompasses recognition and evaluation of those factors that may cause illness, lack of well-being or discomfort among workers or the community. As a component of occupational safety and health efforts to improve working conditions, occupational hygiene focuses on three major areas:

- recognition of the interrelation between environment and industry;
- factors of the working environment that may impair health and well-being;
- the formation of recommendations for the alleviation of such problems.

Occupational safety and health management comprises the activities designed to facilitate the coordination and collaboration of workers' and employers' representatives in the promotion of occupational safety and health in the workplace. The concept defines rights, roles and responsibilities regarding the identification of hazards and risks and the implementation of control or preventive measures.

For further discussion of occupational health practices, services and related concepts and terminology, see Fedotov, Saux and Rantanen (1998, pp. 161–62).

Organization

Occupational health services can be organized to serve a single enterprise or a number of enterprises, depending on which type is more appropriate in terms of national conditions and practice. Similarly, these services may be organized by:

- the enterprise or group of enterprises concerned;
- the public authorities or official services;
- social security institutions;
- any other bodies authorized by the competent authority;
- a combination of any of the above.

In the absence of a specific occupational health service, the competent authority may, as an interim measure, designate an appropriate existing service, for instance a local medical service, to act as an occupational health service.

Thus, in an enterprise where establishing an occupational health service or providing access to such a service is impracticable, the competent authority should – after consulting the employers' and workers' representatives in the workplace or the safety and health committee – make provisional arrangements with a local medical service to:

- carry out the health examinations prescribed by national laws or regulations;
- ensure that first aid and emergency treatment are properly organized; and
- provide surveillance of the environmental health conditions in the workplace.

Occupational health services should be made up of multidisciplinary teams whose composition should be determined by the nature of the duties performed. Each team should have sufficient technical personnel with specialized training and experience in such fields as occupational medicine, occupational hygiene, ergonomics and occupational health nursing. The staff of occupational health services should, as far as possible, keep themselves up to date with progress in the scientific and technical fields relevant to performing their duties, and should be given the opportunity to do so without loss of earnings. In addition, occupational health services should have the necessary administrative personnel to ensure their smooth operation. The staff of occupational health services must enjoy full professional independence from employers, workers and their representatives in relation to the functions of occupational health services.

Functions

Basically, occupational health services aim to protect and promote the health of workers, improve working conditions and the working environment, and maintain the health of the enterprise as a whole (box 24).

In order that they may perform their functions efficiently, occupational health services should:

- have unrestricted access to all workplaces and to the ancillary installations of the enterprise;
- be able to inspect the workplaces at appropriate intervals in cooperation, where necessary, with other services of the enterprise;
- have access to information concerning the processes, performance standards and substances used or the use of which is contemplated;
- be authorized to request the competent authorities to ensure compliance with occupational safety and health standards; and
- be authorized to undertake, or to request that approved technical bodies undertake:
 - (i) surveys and investigations on potential occupational health hazards, for example by sampling and analysis of the atmosphere of workplaces, of the products and substances used, or of any other material suspected of being harmful; and
 - (ii) the assessment of harmful physical agents.

Box 24 **Functions of an occupational health service**

The main functions of a occupational health service are to:

- identify and assess the risks from health hazards in the workplace;
- watch for factors in the work environment and working practices that may affect workers' health, such as sanitary installations, canteens and housing provided by the employer;
- advise on work planning and organization, including workplace design and the choice, maintenance and condition of machinery, and other equipment and substances used in work;
- participate in the development of programmes for the improvement of work practices;
- collaborate in testing new equipment and evaluating its health aspects;
- advise on occupational health, safety and hygiene, and on ergonomics and protective equipment;
- monitor workers' health in relation to work;
- try to make sure that work is adapted to the worker;
- contribute to vocational rehabilitation;
- collaborate in providing training and education in occupational health and hygiene, and ergonomics;
- organize first aid and emergency treatment; and
- participate in the analysis of occupational accidents and occupational diseases.

Within the framework of their responsibility for their employees' safety and health, employers or management should take all necessary measures to facilitate the activities of occupational health services. Equally, workers and their organizations should provide support to occupational health service functions. Furthermore, in cases where occupational health services are established by national laws or regulations, the manner of financing these services should also be determined.

Primary health care approach

Programmes introduced in a number of countries to increase worker coverage of occupational health services have demonstrated that it is possible to improve the availability of such services substantially in a relatively short time and at a reasonable cost by adopting a primary health care approach. Such an approach is particularly appropriate for developing countries as it has been found to improve both the workers' access to the services and the cost-effectiveness of the services provided. Primary health care, carried out in the community, by community-based doctors, nurses and other medical staff, can reach more people, often at lower cost, than centralized hospital provision.

Bearing in mind that workers are part of the community at large, and taking into account the organization of preventive medicine at the national level, occupational health services might, where possible and appropriate:

- carry out immunizations in respect of biological hazards in the working environment;
- take part in campaigns for the protection of health; and
- collaborate with the health authorities within the framework of public health programmes.

First aid

In the context of occupational safety and health, first aid means the immediate measures taken at the site of an accident by a person who may not be a physician but who is trained in first aid, has access to the necessary equipment and supplies, and knows what must be done to ensure that professional medical care will follow his or her intervention.

When a serious accident happens, the first few minutes may be decisive in terms of lives being saved or injuries avoided. Therefore, taking national law and practice into account, occupational health services in enterprises should:

- provide first aid and emergency treatment in cases of accident or indisposition of workers at the workplace; and
- collaborate in the organization of first aid.

It is the employer's responsibility to ensure that first aid is available at all times. This implies a responsibility to ensure that trained personnel are available at all times. It is up to the occupational health service to ensure the training and regular retraining of first-aid personnel. Indeed, on a broader

scale, occupational health services should ensure that all workers who contribute to occupational safety and health are trained progressively and continuously.

The manner in which first-aid facilities and personnel are to be provided should be prescribed by national laws or regulations which should be drawn up after consulting the competent authority and the most representative organizations of employers and workers concerned.

Curative health services and rehabilitation

Although occupational health services essentially focus on prevention, they may also engage in other health activities, where the local organization of health care or the distance of the workplace from general medical clinics makes such extended activities appropriate. These may include curative medical care for workers and their families, provided that the activities are authorized by the competent authority in consultation with the most representative organizations of employers and workers.

Measures should be taken to encourage and promote programmes or systems aimed at the rehabilitation and reintegration, where possible, of workers unable to undertake their normal duties because of occupational injury or illness. The provision of such care, where appropriate, should not involve any cost to the worker and should be free of any discrimination or retaliation whatsoever.

Special occupational health needs

Some workers have special occupational health needs. These may arise for a variety of reasons, including age, physiological condition, social conditions and barriers to communication. The special needs of such workers should be met on an individual basis with due concern to protecting their health at work, making sure that there is no possibility of discrimination.

One category of workers with special occupational health needs comprises pregnant women and working mothers. The assessment of risks at work, and the preventive and control strategies prescribed to control risks, should take account of these special needs, and arrangements should be made to avoid harm. Where hazards and risks to reproductive health have been identified, employers should take appropriate measures. This is especially important during health-risk periods such as pregnancy and breast-feeding. These measures might include training and special technical and organizational measures, in particular the right to appropriate alternative work, without any loss of earnings.

Disabled workers are another group with special needs. In order to give effect to OSH policy, the competent authority should provide appropriate measures for these workers. Similarly, measures should also be taken to promote programmes or systems for the rehabilitation and reintegration of workers who have sustained occupational injury or illness.

Cooperation and coordination

Occupational health services should carry out their functions in cooperation with the other services in the enterprise. Measures should be taken to ensure adequate cooperation and coordination between occupational health services and, as appropriate, other bodies concerned with the provision of health services. It is recommended that national laws and practice be adapted to these requirements to ensure progress in the field of occupational safety and health.

Occupational health services should cooperate with the other services concerned in the establishment of emergency plans for action in the case of major accidents. Where necessary, they should also have contacts with external services and bodies dealing with questions of health, hygiene, safety, vocational rehabilitation, retraining and reassignment, working conditions and the welfare of workers, and inspection.

The occupational health service of a national or multinational enterprise with more than one establishment should provide the highest standard of services, without discrimination, to the workers in all its establishments, regardless of the place or country in which they are situated.

Research

Within the limits of their resources, occupational health services should contribute to research by participating in studies or inquiries in the enterprise or in the relevant branch of economic activity. Such research, which should be preceded by consultation with employers' and workers' representatives, might, for example, aim to collect data for epidemiological purposes or for orienting the activities of the occupational health service. The results of measurements carried out in the working environment and the assessments of workers' health may also be used for research purposes, subject to the agreement of the employer and the workers or their representatives in the enterprise or the safety and health committee. Most importantly, the privacy of the workers must be protected.

There is a need for action-oriented research programmes, in particular to:

- provide accurate statistics on the incidence of occupational accidents and diseases and on their causes;

- identify the hazards associated with all forms of new technology, including chemical substances;
- describe and analyse the working conditions of workers in poorly protected occupations and sectors; and
- investigate relationships between working conditions, occupational safety and health, and productivity, including the impact of improved conditions on employment and economic growth.

Where guidelines for research programmes are developed on a tripartite basis, the links between research and action are likely to be strengthened. Mechanisms to promote such tripartite collaboration should be put in place.

Note

¹ This chapter is based mainly on the Occupational Safety and Health Recommendation, 1981 (No. 164), the Occupational Health Services Convention (No. 161), and Recommendation (No. 171), 1985, the Safety and Health in Construction Convention (No. 167), and Recommendation (No. 175), 1988, the Safety and Health in Mines Recommendation, 1995 (No. 183), and the ILO's International Programme for the Improvement of Working Conditions (PIACT).

AIDS has a profound impact on workers and their families, enterprises and national economies. It is a workplace issue and a development challenge.

Juan Somavia, ILO Director-General

About 40 million people across the world are living with HIV; 36 million are working-age adults (ILO, 2006). The vast majority of those infected live in Africa. The ILO estimates that over 70 per cent of them are workers, engaged in both formal and informal economic activities. Most of them are in their productive and reproductive prime and, as such, are essential to social and economic security and national development. In this context, the workplace and its occupational health services can play a vital role in enterprise, sectoral, national, regional or international efforts to combat HIV/AIDS (and other infectious diseases such as hepatitis B and tuberculosis) by expanding the provision of treatment, care and support, as well as promoting preventive measures and protection of the rights of those affected to continue working without fear of stigma or discrimination.

Principles

The ILO's involvement in the fight against HIV/AIDS started in 1988, when it held a joint consultation with the WHO on AIDS and the workplace. A Resolution concerning HIV/AIDS and the world of work was adopted at the 88th Session of the June 2000 International Labour Conference, and the ILO Programme on HIV/AIDS was formally established in November 2000. The Programme developed a code of practice on HIV/AIDS and the world of work,¹ which was adopted by the ILO Governing Body in June 2001 and

launched at the UN General Assembly Special Session on HIV/AIDS, New York, in the same month.

The ILO code of practice is so far the only ILO instrument devoted exclusively to the subject and is written as a model regulation. However, in 2009 the International Labour Conference will discuss “the development of an autonomous Recommendation on HIV and AIDS in the world of work on the basis of a double discussion” (ILO, 2007 and 2008).

Many existing ILO instruments cover protection against discrimination as well as prevention, care and support at the workplace, as set out in box 25.

The code sets out fundamental principles (see box 26) for policy development and practical guidelines from which concrete responses to HIV/AIDS can be developed at enterprise, community and national levels, including:

- the protection of workers’ rights, including rights to employment protection, gender equality, entitlement to benefits and non-discrimination;
- prevention through education and information, gender-aware programmes and practical support for behaviour change;
- care and support, including confidential voluntary counselling and testing, as well as treatment in settings where local health systems are inadequate; and
- the rights and the responsibilities of the tripartite partners.

Box 25 ILO standards particularly relevant to HIV/AIDS

- Discrimination (Employment and Occupation) Convention, 1958 (No. 111), one of the eight fundamental Conventions of the ILO
- Occupational Safety and Health Convention, 1981 (No. 155)
- Occupational Health Services Convention, 1985 (No. 161)
- Termination of Employment Convention, 1982 (No. 158)
- Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No. 159)
- Social Security (Minimum Standards) Convention, 1952 (No. 102)
- Labour Inspection Convention, 1947 (No. 81)
- Labour Inspection (Agriculture) Convention, 1969 (No. 129)

The code also identifies further needs:

- to carry out awareness-raising campaigns;
- to create links with public health promotion programmes;
- to develop and implement practical measures to support behavioural change; and
- to establish, in partnership with occupational health services, community outreach programmes aimed at workers, their families and the community at large.

The code forms the cornerstone of the ILO's efforts against HIV/AIDS and is now being used by policy-makers and workplace partners in over 60 countries as the basis for their own national action programmes, enterprise policies and collective agreements. It is instrumental in strengthening the involvement of the private sector in action against HIV/AIDS, guiding the extension of workplace programmes to the community level and thereby promoting public-private partnership, and bringing the workplace perspective and issues into national AIDS programmes and global efforts. A checklist for planning and implementing a workplace policy on HIV/AIDS, taken from the code, is provided in Annex VI.

Box 26 **Summary of key principles in the ILO code of practice on HIV/AIDS and the world of work**

- (a) **A workplace issue:** HIV/AIDS is a workplace issue because it affects the workforce, and because the workplace can play a vital role in limiting the transmission and effects of the epidemic.
- (b) **Non-discrimination:** There should be no discrimination or stigma against workers on the basis of real or perceived HIV status.
- (c) **Gender equality:** More equal gender relations and the empowerment of women are vital to preventing the transmission of HIV and helping people to manage its impact.
- (d) **Healthy work environment:** The workplace should minimize occupational risk, and be adapted to the health and capabilities of workers.
- (e) **Social dialogue:** A successful HIV/AIDS policy and programme needs cooperation and trust between employers, workers and governments.

/cont'd

Box 26 Summary of key principles in the ILO code of practice on HIV/AIDS and the world of work (cont'd)

- (f) **No screening for purposes of employment:** Testing for HIV at the workplace should be carried out as specified in the code, should be voluntary and confidential, and should never be used to screen job applicants or employees.
- (g) **Confidentiality:** Access to personal data, including a worker's HIV status, should be bound by the rules of confidentiality set out in existing ILO instruments.²
- (h) **Continuing the employment relationship:** Workers with HIV-related illnesses should be able to work in appropriate conditions for as long as they are medically fit to do so.
- (i) **Prevention:** The social partners are in a unique position to promote prevention efforts through information, education and support for behaviour change.
- (j) **Care and support:** Workers are entitled to affordable health services and to benefits from statutory and occupational schemes.

To complement and guide the application of the code, the ILO has produced an education and training manual, *Implementing the ILO code of practice on HIV/AIDS and the world of work*.³ The manual serves as an information and reference document as well as providing guidelines, case studies and practical activities to help users apply the code to national strategic plans and workplace policies and programmes. Together, the ILO code and the manual are being used to develop skills and institutional capacity for the benefit of constituents in all regions. A number of publications, reports and brochures on HIV/AIDS and the world of work are available through the ILO/AIDS Internet site.

Health services and HIV/AIDS

The pressures on health systems across the world are enormous. Although health care is a basic human right,⁴ and over 100 million health workers are delivering services worldwide (Joint Learning Initiative, 2004), “health for all” is far from being achieved. The HIV epidemic, added to existing pressures, is overwhelming the health system in a number of countries. Over 50 per cent of hospital beds in the countries of sub-Saharan Africa are occupied by people

with HIV-related illness, even though most people with HIV/AIDS are cared for at home. Systems already unable to cope are weakened further by the AIDS-related deaths and disability of large numbers of health personnel. Moreover, those working in the health sector, in providing care to patients with HIV, are also at risk from transmission through needle-stick injury or contact with contaminated blood. While this risk is low, it is increased where basic OSH rules are not respected. The greater workload resulting from the epidemic, the fear of infection, and the lack of adequate safety and health provision and of HIV-specific training impose an enormous psychological and physical burden on health workers. An expanded, well-trained and secure health service workforce is essential to curbing the transmission of HIV and to the provision of care, treatment and support to those who need them.

Capacity building

The code of practice prescribes training the key actors in the world of work on how to address HIV/AIDS issues as the most essential tool to reduce spread of infection and mitigate its impact, particularly regarding discrimination and stigma. This training should be targeted at, and adapted to, each of the different groups being trained: managers, supervisors and personnel officers; workers and their representatives; trainers of trainers; peer educators; OSH officers; and factory/labour inspectors. Innovative approaches should be sought to meet the costs of training. For example, enterprises can seek external support from national AIDS programmes or other relevant stakeholders by borrowing instructors or having their own trained. Training materials can vary enormously, according to available resources. They can be adapted to local customs and to the different circumstances of women and men. Trainers should also be trained to deal with prejudices against minorities, especially in relation to ethnic origin or sexual orientation. They should draw on case studies and available good practice materials. The best trainers are often colleagues of those they are training, and peer education is therefore recommended at all levels. It should become part of a workplace's annual training plan, which should be developed in consultation with workers' representatives.

Training for managers, supervisors and personnel officers

The training of supervisory personnel is an important way of ensuring that they are appropriately sensitive to the problem and to the needs of infected workers. In addition to participating in information and education programmes that are directed at all workers, supervisory and managerial personnel should receive training to enable them:

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- to explain, and respond to questions about, the workplace's HIV/AIDS policy;
- to help other workers, on the basis of sound information about HIV/AIDS, to overcome misconceptions about the spread of infection at the workplace;
- to explain reasonable accommodation options to workers with HIV/AIDS so as to enable them to continue to work as long as possible;⁵
- to identify and manage workplace behaviour, conduct or practices which discriminate against or alienate workers with HIV/AIDS;
- to provide advice about the health services and social benefits which are available.

Training for peer educators

The training of peer educators selected by workers from their own number is an efficient and cost-effective way of bringing knowledge and information to the workplace in forms that can be understood and accepted by workers, particularly in developing countries. In order to be effective, peer educators should receive specialized training to enable them:

- on the basis of sound information about HIV/AIDS and methods of prevention, to deliver, in whole or in part, the information and education programme to the workforce;
- to be sensitive to race, sexual orientation, gender and culture in developing and delivering their training;
- to link into and draw from other existing workplace policies, such as those on sexual harassment or for persons with disabilities in the workplace;
- to help their co-workers to identify factors in their lives that lead to increased risk of infection;
- to counsel workers living with HIV/AIDS about coping with their condition and its implications.

Training for workers' representatives

Because of their leading status in the enterprise and the ability this gives them to persuade their fellow workers to adhere to important principles and to

preventive and protective measures, workers' representatives should, during paid working hours, receive training to enable them:

- to explain, and respond to questions about, the workplace HIV/AIDS policy;
- to train other workers in trainer education programmes;
- to identify behaviour, conduct or practices, by individuals or across the workplace, which discriminate or alienate workers with HIV/AIDS, in order to effectively combat such conduct;
- to help workers with AIDS-related illnesses gain access to reasonable accommodation when so requested;
- to counsel workers on how to identify and reduce risk factors in their personal lives;
- to inform workers, on the basis of sound information, about the spread of HIV/AIDS;
- to ensure that any information that they acquire about workers with HIV/AIDS in the course of performing their representative functions is kept confidential.

Training for safety and health officers

OSH officers should apply to HIV/AIDS (and other infectious diseases) the same OSH principles and measures they would apply to any other workplace hazard. In addition to becoming familiar with the information and education programmes that are directed at all workers, safety and health officers should receive specialized training to enable them:

- to deliver information and education programmes to workers on the basis of adequate knowledge about methods of HIV/AIDS prevention;
- to assess the working environment and identify working methods or conditions which could be changed or improved in order to lessen the vulnerability of workers with HIV/AIDS;
- to verify whether the employer provides and maintains a healthy and safe working environment and processes for the workers, including safe first-aid procedures;
- to ensure that any information related to the HIV/AIDS status of workers is maintained under conditions of strict confidentiality, as with other

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medical data pertinent to workers, and disclosed only in accordance with the ILO's code of practice on the protection of workers' personal data;

- to counsel workers on how to identify and reduce risk factors in their personal lives;
- to refer workers to in-house medical services or those outside the workplace which can effectively respond to their needs.

Training for factory/labour inspectors

Factory and labour inspectors increasingly play an advisory role in occupational safety and health, including HIV/AIDS prevention in enterprises. To equip them for this role, they should be given specialized training on HIV/AIDS prevention and protection strategies at the workplace. This training should include:

- information on relevant international labour standards, especially the Discrimination (Employment and Occupation) Convention, 1958 (No. 111), and national laws and regulations;
- how to raise awareness about HIV/AIDS among both workers and management;
- how to incorporate HIV/AIDS topics into their regular OSH briefings and workplace training;
- how to assist workers to gain access to available benefits (e.g. how to complete benefit forms) and to exercise other legal rights;
- how to identify violations of, or the failure to protect, workers' rights in respect of HIV status;
- skills to collect and analyse data relating to HIV/AIDS in workplaces for epidemiological or social impact studies when carried out in conformity with the ILO code of practice.

Treatment, care and support

The provision of treatment, care and support to workers with HIV, however they became infected, reduces the loss of essential skills and experience, and minimizes disruption to the enterprise. It also respects the rights of workers to remain in employment as long as they are fit to work, helps to maintain their income and contributes to their general well-being. To the extent possible, employers should establish comprehensive treatment, care and

support programmes that combine specific provisions, for workers who are ill or have an ill family member, with general provisions as part of a social protection package available to all workers. Key elements of such a programme are identified and described below.

Voluntary counselling and testing

To gain acceptance, HIV testing must be accompanied by improved protection from stigma and discrimination, as well as assured access to integrated services for prevention, treatment and care. According to the key principles of HIV testing known as the “3 Cs”, the test must be provided on the basis of informed *consent*; it must be accompanied by *counselling*; and *confidentiality* must be ensured. It should be carried out by suitably qualified personnel. The Joint United Nations Programme on HIV/AIDS (UNAIDS) and the WHO encourages the use of rapid tests that yield results more quickly than the more expensive and time-consuming regular tests, even though they may not be quite so accurate; these results can then be followed up immediately with post-test counselling for both HIV-negative and HIV-positive individuals, and with treatment if necessary. Counselling, including appropriate referral to specialist clinics or hospitals, is likewise an essential part of a treatment, care and support programme for workers with HIV/AIDS.

Testing for HIV should not be carried out at the workplace, except as specified in the ILO code of practice (ILO, 2001a; WHO, 2004). HIV testing should not be required at the time of recruitment, as a condition of continued employment or for insurance purposes. Anonymous surveillance or testing for epidemiological purposes, to assess HIV infection trends and their impact in the country as a whole or, for example, in the health sector, may be undertaken provided it complies with the ethical principles of scientific research, professional ethics and the protection of individual rights and confidentiality, and safeguards anonymity. Voluntary testing for workers wishing to know their HIV status should be made available, where adequate medical services exist, and made known to be available. It should normally be done outside the workplace at the request and, if necessary, with the written informed consent of the worker, and with advice from the workers’ representative where sought.

Disclosure and confidentiality

Voluntary disclosure by an individual of his or her HIV status has many consequences. Whether to make such a disclosure must be a personal decision on the part of the individual affected. Confidentiality at the workplace gives

individuals with HIV full control over decisions about whether and how their colleagues are informed. Health workers, for example, may decide against disclosing their HIV status at work for fear of stigmatization by the employer or fellow workers. In a safe and decent workplace, where employees are educated about HIV and where discrimination is prohibited, people living with HIV are more likely to be open about their status and seek counselling and treatment. This in turn makes it more likely that preventive behaviours will be adopted. All records of employees who have been exposed to blood or body fluids must be kept confidential. Summary information regarding all incidents of exposure in a particular health-care institution may be made available to all workers in a form that has been agreed through consultation between the employer and the workers' representatives. Procedures should be established to manage and minimize breaches of confidentiality in the workplace.

Treatment

Making antiretroviral treatment (ART) available is an essential part of any strategy to keep HIV-positive health workers in productive employment. It also helps to reduce stigma and discrimination by demonstrating the benefits of appropriate treatment. Employers should, to the extent possible, ensure that ART is made available at no cost to workers who need it, together with treatment for opportunistic infections and advice on nutrition and healthy living.

Job security and promotion

Workers who become HIV-positive will remain active for many years. Those who are medically fit should not suffer discrimination in terms either of job security or of opportunities for training or promotion. Appropriate management of HIV, including the provision of ART, can dramatically improve general health, life expectancy and the quality of life.

Terms and conditions of work

Employers should, to the extent possible, provide workers with benefit schemes such as sick pay, health insurance and workers' compensation. They should apply these schemes fairly and equally to all employees. Workers living with HIV/AIDS should not be discriminated against in terms of access to welfare and other statutory benefits. It may, however, be necessary to make adjustments in the provision of benefits to respond to the way the disease develops, for example by extending sick leave and, if necessary, access to other benefits. Such adjustments to take into account the special requirements of

HIV-related illness should be made through negotiation between management and the union or the workers' representatives.

Reasonable accommodation

Employers, in consultation with workers and their representatives, should reasonably accommodate workers with AIDS-related illnesses; that is, they should be prepared to make administrative or practical adjustments to help these workers to manage their working lives. Such adjustments could include:

- rearrangement of working hours;
- modifications to tasks and jobs;
- adapted working equipment and environment;
- adaptation of rest periods;
- granting time off for medical appointments;
- flexible sick leave;
- part-time work and return-to-work arrangements.

As with other working conditions, it is best if reasonable accommodation is defined by agreement between employers and workers' representatives. It is important that other workers see reasonable accommodation as providing necessary care, not favourable treatment.

Worker assistance programmes

Worker assistance programmes provide information, advice and support for employees on a broad range of personal, health and legal issues. They can be an effective framework for workplace health promotion services. Support may be extended to the families of workers through such programmes, for example by including them in education for HIV prevention, or helping them to cope with a worker's disease or dependency. In order to provide adequate assistance to workers living with AIDS and their families, such programmes may need to be established or extended to include a fuller range of services. This should be done in consultation with workers and their representatives, and might also involve relevant government authorities and other stakeholders.

Large enterprises should set up or strengthen comprehensive family assistance programmes. Enterprises whose reach does not extend to this, for example small private or non-governmental employers, could provide such assistance through collaboration with other parties, for example local health

authorities, community-based organizations and self-help groups. Employers' and workers' organizations should examine together how they can contribute to the support of the families of workers living with HIV/AIDS. The involvement in this process of women, caregivers and people living with HIV/AIDS should be encouraged.

Social protection

Social protection is an important component of care and support. It includes not only formal social security schemes, but also private or non-statutory schemes with similar objectives, such as mutual benefit societies or occupational pension schemes. These schemes may feature, for example, group solidarity, an employer subsidy, or perhaps a subsidy from the government. A number of ILO Conventions deal with aspects of social protection and social security.⁶

ILO/WHO guidelines on health services and HIV/AIDS

In view of their complementary mandates, their long-standing and close cooperation in the area of occupational health, and their more recent partnership as co-sponsors of UNAIDS, the ILO and the WHO decided to join forces to develop joint guidelines on health services and HIV/AIDS (ILO/WHO, 2005). These guidelines were reviewed and adopted by a meeting of experts, and their publication was authorized by the ILO Governing Body in 2005. They are now available from the ILO or WHO in several languages.

The purpose of these guidelines is to promote sound management of HIV/AIDS in health services, providing health workers with decent, safe and healthy working conditions within which they can deliver effective care that respects the needs and rights of patients, especially those living with HIV/AIDS. They also cover exposure to other infectious diseases such as the hepatitis viruses (A, B, C and D). The guidelines rest on the basic principle that policy development and implementation should be achieved through consultation and collaboration between all concerned parties, based on social dialogue and including, so far as possible, people living with HIV/AIDS. They take a rights-based approach to HIV/AIDS, as promoted by the 2001 United Nations Declaration of Commitment on HIV/AIDS and the international community at large (UN, 2001). The guidelines reflect the key principles of the ILO code of practice on HIV/AIDS and the world of work.

The guidelines are aimed at governments, public and private employers, workers' organizations and representatives, professional associations, scientific and academic institutions, and all other groups and bodies associated

with the delivery of health care. They are designed as a basis for practical policy and as a technical reference work that can be used by – or adapted to the needs and capacities of – health services of all sizes. They cover legislation, policy development, labour relations, occupational safety and health, and other technical subjects. They discuss the basis for action, identify roles and responsibilities, set out the key policies and actions needed for sound management of HIV/AIDS in health services, and include core references in each section. In addition, they provide practical information on the most relevant technical aspects of occupational safety and health in the form of concise fact sheets adapted from a range of reliable international and national sources. An example, dealing with the hierarchy of controls applied to the risk of exposure to blood-borne pathogens, is given in Annex VII.

Notes

¹ ILO, 2001a. The code is available in several languages in electronic format at: <http://www.ilo.org/aids>.

² See in particular the ILO code of practice *Protection of workers' personal data*, 1997.

³ The manual may be downloaded free of charge at: <http://www.ilo.org/public/english/protection/trav/aids/publ/manualen.htm>.

⁴ “Right to health” is an abbreviated form of “the right to the enjoyment of the highest attainable standard of physical and mental health”.

⁵ The term ‘reasonable accommodation’ refers to administrative or practical adjustments that are made by the employer to help workers with an illness or disability to manage their work (see ILO, 2001a).

⁶ Discrimination (Employment and Occupation) Convention (No. 111), and Recommendation (No. 111), 1958; Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No. 159); Social Security (Minimum Standards) Convention, 1952 (No. 102).

General considerations

The incidence of accidents and work-related diseases and injuries in most occupational sectors is still regrettably high; there is therefore an urgent need for preventive and protective measures to be instituted at workplaces in order to guarantee the safety and health of workers. Occupational accidents and diseases not only cause great pain, suffering and death to victims, but also threaten the lives of other workers and their dependants. Occupational accidents and diseases also result in:

- loss of skilled and unskilled but experienced labour;
- material loss, i.e. damage to machinery and equipment well as spoiled products; and
- high operational costs through medical care, payment of compensation, and repairing or replacing damaged machinery and equipment.

Occupational health problems arise largely from hazardous factors in the working environment. Since most hazardous conditions at work are in principle preventable, efforts should be concentrated on primary prevention at the workplace, as this offers the most cost-effective strategy for their elimination and control. The planning and design of workplaces should be aimed at establishing working environments that are conducive to physical, psychological and social well-being. This means taking all reasonable precautions to avoid occupational diseases and injuries.

Workplace safety and health programmes should aim at eliminating the unsafe or unhealthy working conditions and dangerous acts which account for

Box 27 Duties of employers when workers are exposed to occupational hazards

In situations where workers are exposed to occupational hazards, employers have the duty to:

- inform the workers of all the known hazards associated with their work, the health risks involved and the relevant preventive and protective measures;
- take appropriate measures to eliminate or minimize the risks resulting from exposure to those hazards;
- provide workers with suitable protective equipment, clothing and other facilities where adequate protection against risk of accident or injury to health, including exposure to adverse conditions, cannot be ensured by other means; and
- provide first aid for workers who have suffered from an injury or illness at the workplace, as well as appropriate transportation from the workplace and access to appropriate medical facilities.

nearly all occupational accidents and diseases. This can be achieved in a number of ways: engineering control, design of safe work systems to minimize risks, substituting safer materials for hazardous substances, administrative or organizational methods, and use of personal protective equipment.

How particular occupational hazards are prevented depends on the nature of the various causal agents, their mode of action and the severity of the risk. In prescribing measures for the prevention and control of such hazards, the competent authority should take into consideration the most recent ILO codes of practice or guidelines and the conclusions of relevant meetings of experts convened by the ILO, as well as information from other competent bodies. In taking preventive and protective measures the employer should assess the risks and deal with them in the order of priority set out in box 13. In situations where workers are exposed to physical, chemical or biological hazards, the employer is bound to fulfil a number of duties: these are set out in box 27.

Engineering control and housekeeping

Engineering control involves controlling the hazard at the source. The competent authority should ensure that exposure to hazardous substances (such as asbestos, for instance), is prevented or controlled by prescribing engineering controls and work practices which afford maximum protection to workers. One type of engineering control involves built-in protection as part of the

work process concerned. These engineering controls should be built in during the design phase; they may be implemented later, but this tends to be more costly. Engineering controls may be more expensive to implement than methods which depend on continual vigilance or intervention by the worker, but they are safer. Examples include erecting guards around machines to prevent accidents or encasing a noise source with a muffler.

Another form of engineering control is the mechanization process. This involves the use of a machine to do dangerous work rather than exposing a worker to the hazard. An example is the use of an automatic parts dipper on a vapour degreaser rather than having dipped parts into the tank by hand.

Where the elimination of hazardous substances is not practicable in existing plants and processes, employers or managers should apply technical measures to control the hazard or risk by changing the process, so that the job is done in a completely different and safer way, or by enclosing the process completely to keep the hazard from reaching the worker. If the problems still cannot be solved by these methods, then methods such as local exhaust ventilation could be used to control the hazard.

These and other appropriate measures should be taken so that the exposure level is reduced to a level which, in the light of current knowledge, is not expected to damage the health of workers, even if they should go on being exposed at the same level for the duration of their working lives.

Good work practices and working methods can ensure that hazardous materials are contained before they become a problem. Where complete containment has not been achieved, strict housekeeping and personal hygiene are absolutely essential to ensure workplace and personal safety. In the presence of toxic chemicals, for instance, strict personal hygiene must always be observed so as to prevent local irritations or the absorption of such chemicals through the skin. Where hazardous substances such as lead dust in a storage battery plant or asbestos dust in brake shoe manufacture are involved, inadequate housekeeping can result in toxic materials circulating in the air. There are several ways of maintaining good housekeeping; for example:

- vacuuming is the best way of cleaning up dust, as dry sweeping often makes the problem worse by pushing dust particles back into the air; and
- regular and thorough maintenance of machines and equipment will reduce dust and fumes.

Substitution

Where necessary for the protection of workers, the competent authority should require the replacement of hazardous substances by substitute

materials, in so far as this is possible. For example, in the case of asbestos or products containing asbestos, national laws or regulations must provide for its replacement, if technically practicable, by other materials and products, or for the use of alternative technology, scientifically evaluated by the competent authority as harmless or less harmful. The use of asbestos, or of certain types of asbestos, or of products containing asbestos, may be totally or partially prohibited in certain work processes. It is, however, necessary to ensure that the substitute is really safer.

Work practices and organizational methods

Where the evaluation of the working environment shows that elimination of risk and total enclosure of machinery are both impracticable, employers should reduce exposure to hazard as much as possible, through administrative or organizational measures, so as to:

- reduce the source of the hazard, so that risks are confined to certain areas where engineering control measures can be applied effectively;
- adopt adequate work practices and working-time arrangements so that workers' exposure to hazards is effectively controlled; and
- minimize the magnitude of exposure, the number of workers exposed and the duration of exposure, e.g. carry out noisy operations at night or during the weekend, when fewer workers are exposed.

Personal protective equipment

When none of the above approaches is feasible, or when the degree of safety achieved by them is considered inadequate, the only solution is to provide exposed persons with suitable personal protective equipment and protective clothing. This is the final line of defence and should be used only as a last resort, since it entails reliance on active cooperation and compliance by the workers. Moreover, such equipment may be heavy, cumbersome and uncomfortable, and may restrict movement.

Employers should consult workers or their representatives on suitable personal protective equipment and clothing, having regard to the type of work and the type and level of risks. Furthermore, when hazards cannot be otherwise prevented or controlled, employers should provide and maintain such equipment and clothing as are reasonably necessary, without cost to the workers. The employer should provide the workers with the appropriate means to enable them to use the individual protective equipment. Indeed, the

employer has a duty to ensure its proper use. Protective equipment and clothing should comply with the standards set by the competent authority and take ergonomic principles into account. Workers have the obligation to make proper use of and take good care of the personal protective equipment and protective clothing provided for their use.

Technological change

Technological progress can play an important role in improving working conditions and job content, but it can also introduce new hazards. Great care should therefore be taken in both the choice and the international transfer of technology in order to avoid potential hazards and ensure that the technology is adapted to local conditions. Management should consult with workers' representatives whenever new technology is introduced.

The hazards associated with technologies (equipment, substances and processes) used at the work site must be identified and effective measures taken to eliminate or control them. This means that safety factors should be built in, and that working conditions, organization and methods should be adapted to the characteristics and capacities of workers.

The introduction of new technology should be accompanied by adequate information and training. Furthermore, potentially dangerous machinery, equipment or substances should not be exported without adequate safeguards being put in place, including information on safe use in the language of the importing country. It is the duty of the governments of importing countries to review national legislation to make sure that it includes provisions to stop the import of technology detrimental to occupational safety and health or working conditions.

Protection of the general environment

The importance of protecting workers, the general public and the environment from materials containing hazardous substances cannot be overemphasized. To this end, the competent authority should ensure that criteria consistent with national or international regulations regarding disposal of hazardous waste are established. Procedures to be followed in the disposal and treatment of hazardous waste products should also be established, with a view to ensuring the safety of workers, and the protection of the general public and the environment. Employers must therefore dispose of waste containing hazardous materials, such as asbestos, in a manner that does not pose a health risk to the workers concerned, including those handling the waste material, or to the general population. Furthermore, it is up to the competent authority

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and employers to take measures to prevent pollution of the general environment by dust or other pollutants released from the work site.

Note

¹ This chapter is based mainly on the Working Environment (Air Pollution, Noise and Vibration) Recommendation, 1977 (No. 156), the Occupational Safety and Health Recommendation, 1981 (No. 164), the Asbestos Convention (No. 162), and Recommendation (No. 172), 1986, the Safety and Health in Construction Convention, 1988 (No. 167), the Chemicals Recommendation, 1990 (No. 177), the Safety and Health in Mines Convention, 1995 (No. 176), and the ILO's International Programme for the Improvement of Working Conditions (PIACT).

A healthy, motivated and contented workforce is fundamental to the social and economic well-being of any nation. To achieve such a workforce, it is not enough to prevent occupational hazards or to protect workers against them. It is also necessary to take positive measures to improve health and to promote a safety and health-oriented culture. Such measures include health promotion, education and training.

Promotion of occupational safety and health

The promotion of occupational safety and health is an organizational investment for the future: enterprises will benefit from promoting health in the workplace in the form of lower sickness-related costs and higher productivity. Consequently, OSH promotion in the workplace could be regarded as a modern corporate strategy which aims at preventing ill health at work (including work-related diseases, accidents, injuries, occupational diseases and stress) and enhancing the potential and well-being of the workforce.

As part of national OSH promotional activities, some countries organize annual awards based on certain criteria, including the number of accidents submitted for compensation claims, and continuous inspection and monitoring of hazards by the individual workplace. Companies that have kept good safety records are given awards in recognition of their efforts and to encourage others to emulate them. However, mechanisms for ensuring honesty and preventing under-reporting or inaccurate declaration should be put in place and enforced. In other instances, health promotion items, including hazard-monitoring equipment, safety devices, training manuals, and information packages on occupational safety and health are displayed at big

annual events such as international trade fairs. Similar activities can be organized at the enterprise level to promote awareness about safety and health. Such activities could include an annual safety festival.

Workers' lifestyles, including diet, exercise, and smoking and drinking habits, are a key factor in health. Health education designed to promote good lifestyles and discourage those detrimental to health should be introduced into the workplace as part of the programme of OSH activities.

OSH promotion covers a wide range of measures aimed at increasing interest in a safe and healthy working life. It includes:

- a comprehensive system of information dissemination;
- targeted campaigns for the different sectors of occupational safety and health; and
- safety promotion activities, for example an annual safety week all over the country, featuring events centred on safety themes and culminating in a safety awards ceremony.

The OSH programme should include strategies to promote wider awareness of the social and economic importance of improving working conditions and the environment.

An OSH awareness campaign is aimed at acquainting both management and workers with hazards in their workplaces and their role and obligations in the prevention of occupational accidents, injuries and diseases. It fosters improved communication and work relationships at all levels of the business enterprise, including top management, supervisors and workers on the shop floor. It helps a company to achieve the key objective of a good safety and health record.

Education in the context of occupational safety and health is designed to communicate a combination of knowledge, understanding and skills that will enable managers and workers in an enterprise to recognize risk factors contributing to occupational accidents, injuries and diseases, and be ready and able to prevent these factors occurring in their own work environment. OSH education is thus intended to foster the awareness and positive attitudes which are conducive to safety and health at work.

Education includes training, which is a process of helping others to acquire skills necessary for good performance in a given job. Training is therefore a narrower concept than education. Training, as opposed to full education, may be the only option where workers have limited academic background (and hence their comprehension is likely to be limited), or time is scarce.

Education and training provide individuals with the basic theoretical and practical knowledge required for the successful exercise of their chosen occupation or trade. Education and training must therefore also cover the prevention of accidents and injury to health arising out of or linked with or occurring in the course of work. There should be special emphasis on training, including necessary further training. In addition, attention should be paid to the qualifications and motivations of individuals involved, in one capacity or another, in the achievement of adequate levels of safety and health.

Where there are health hazards associated with hazardous materials, the competent authority should make appropriate arrangements, in consultation and collaboration with the most representative organizations of employers and workers concerned:

- to promote the dissemination of information on hazards and on methods of prevention and control; and
- to educate all concerned about the hazards and about methods of prevention and control.

Training and information at the national level

The competent authority or authorities in each country should provide information and advice, in an appropriate manner, to employers and workers, and should promote or facilitate cooperation between them and their organizations, with a view to eliminating hazards or reducing them as far as practicable. Where appropriate, a special training programme for migrant workers in their mother tongues should be provided.

Training at all levels should be emphasized as a means of improving working conditions and the work environment. OSH institutes and laboratories, labour institutes and other institutions concerned with training, technical support or research in occupational safety and health should be established. Workers' organizations as well as employers should take positive action to carry out training and information programmes with a view to preventing potential occupational hazards in the working environment, and controlling and protecting against existing risks. In their own training, employers should also learn how to gain the confidence of their workers and motivate them; this aspect is as important as the technical content of the training.

The training of labour inspectors, OSH specialists and others directly concerned with the improvement of working conditions and the work environment should take into account the increasing complexity of work

processes. In particular, with the introduction of new or advanced technology there is a need for training in methods of analysis to identify and measure the hazards, as well as in ways to protect workers against these hazards.

The OSH programme should place particular emphasis on activities related to the collection, analysis and dissemination of information, taking into consideration the differing needs of government agencies, employers and workers and their organizations, research institutions and others concerned with the improvement of working conditions and the work environment. Priority should be given to the collection and dissemination of practical information, such as information on the provisions of legislation and collective agreements, training activities, research in progress and the content of technical publications.

Information should be easily accessible through a variety of means, including the Internet, computerized databases, audiovisual materials, serial publications, information sheets and monographs. A special effort should be made to provide information at low cost or free of charge to trade unions and other interested organizations and audiences which might otherwise not be able to afford them.

The establishment of regional, subregional or national information systems on working conditions and on occupational safety and health should be encouraged. This could be achieved through the establishment of technical advisory services such as the ILO International Occupational Safety and Health Information Centre (CIS) national centres, as well as the organization of national and regional workshops and the inclusion of information activities in technical cooperation projects. Information systems should be examined to ensure that there is no overlap with the activities of other institutions providing information in the field of occupational safety and health, and that the most appropriate and cost-effective techniques are used.

Training and information at the enterprise level

The need to give appropriate training in occupational safety and health to workers and their representatives in the enterprise cannot be overemphasized. Training at all levels should be seen as a means of improving working conditions and the work environment. Employers should provide necessary instructions and training, taking account of the functions and capacities of different categories of workers. Furthermore, workers and their representatives should have reasonable time, during paid working hours, to exercise their safety and health functions and to receive training related to them. Employers' and workers' organizations should take positive action to carry out training and

information programmes with respect to existing and potential occupational hazards in the work environment. These programmes should focus on:

- prevention;
- control; and
- protection.

Workers should be provided with the type of knowledge commensurate with the technical level of their activity and the nature of their responsibilities. Representatives of workers in the enterprise should also be given adequate information on measures taken by the employer to secure occupational safety and health. They should be able to consult their representative organizations about such information provided that they do not disclose commercial secrets. At an individual level, each worker should be informed in an adequate and appropriate manner of the health hazards involved in his or her work, of the results of the health examinations he or she has undergone and of the assessment of his or her health.

Information activities are a key means of support for OSH programmes. These activities should emphasize practical materials targeted at specific groups. Special priority should be given to information that can be put to immediate use in enterprises. Policy-makers, labour inspectors and the staff of institutions carrying out research and technical support activities should also be provided with information relevant to their priorities. The participation of such institutions in information networks, both national and international, should be encouraged and developed.

Workers and their safety and health representatives should have access to appropriate information, which might include:

- notice of any forthcoming visits to workplaces by the competent authority in relation to safety or health;
- reports of inspections conducted by the competent authority or the employer, including inspections of machinery or equipment;
- copies of orders or instructions issued by the competent authority in respect of safety and health matters;
- reports prepared by the competent authority or the employer on accidents, injuries, instances of ill health and other occurrences affecting safety and health;
- information and notices on all hazards at work, including hazardous, toxic or harmful materials, agents or substances used at the workplace;

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- any other documentation concerning safety and health that the employer is required to maintain;
- immediate notification of accidents and dangerous occurrences; and
- any health studies conducted in respect of hazards present in the workplace.

Training methods and materials

The importance of training lies in the fact that regulations and warning signs will not prevent risky behaviour unless workers understand dangers and believe that safety measures are worthwhile. Workers, in particular new recruits, need to be instructed in the safety aspects of their work and kept under close supervision to ensure that they have fully understood the dangers and how to avoid them. This instruction must be supported by effective materials and practical training methods. Specific training materials should be developed to assist action in poorly protected sectors, and emphasis should be placed on the training of trainers.

Developing countries have special needs to which training materials and methods will need to be adapted. In some cases, entirely new materials and methods will be required. This work should utilize research on sectors with particularly high safety risks and pilot experiments identifying the cost-effectiveness and appropriateness of measures. Whenever possible, work on developing training methods and materials should be done in consultation with workers' and employers' representatives.

Given the fact that many workers in developing countries are either illiterate or semi-literate, great care must be taken in choosing an appropriate means of communication. Information on safety and health should be presented in a manner that is easily understood by all workers regardless of their level of education. Language should be kept simple. Everyday language, i.e. the vernacular or local dialect, should be used whenever possible. Information should be conveyed using a medium that does not rely heavily on the written word. Discussions or lectures in the vernacular, along with demonstrations, vivid posters or films, are often more effective than written material in putting across safety and health messages. Other techniques include on-the-job demonstrations, role-playing, and audiovisual presentations accompanied by explanatory discussions.

Any new techniques implemented must be periodically evaluated. If communication is effective it will produce the desired effects: a reduction in the number of accidents and diseases, or their elimination; savings in medical bills and compensation payments; and improved productivity and worker morale.

International chemical hazard communication tools

The prevention of exposure to hazardous chemicals in the workplace is a major focus of occupational safety and health. Any strategy for the sound management of chemicals at work is therefore effective only if it adheres closely to the general principles of occupational safety and health, namely: identification and characterization of hazards; assessment of exposure; characterization of risk; and implementation of risk management measures. However, this is possible only if reliable information on chemical hazards and risks is developed and made readily and widely available, and if training is provided on all the aspects of safe dealing with chemicals.

Amid growing concerns for human and environmental health, unprecedented national, regional and international efforts have been made since the 1980s to develop and implement globally coordinated and harmonized regulatory and technical management tools for the safe production, handling, use and disposal of hazardous chemicals. Over these years the ILO has taken part in the development of a number of important internationally harmonized hazard communication and management tools, some of which are described below.

The International Chemical Safety Cards (ICSCs)²

The ICSC project was developed in 1984 and is funded by the EU, the ILO and the WHO. The project is currently managed by the ILO on behalf of the Joint ILO/WHO/UNEP International Programme on Chemical Safety (IPCS). The ICSCs summarize essential safety and health information on chemical substances in a clear way and are intended for use at the shop-floor level by workers, and by those responsible for workplace safety and health. To a large extent, the information provided in the ICSCs conforms to the provisions of the Chemicals Convention, 1990 (No. 170), and the Chemicals Recommendation, 1990 (No. 177), on chemical safety data sheets and, more recently, to the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS).³

The ICSCs are designed to serve as an international reference source for chemical safety information and are accordingly prepared through an ongoing process of drafting and peer review by scientists from specialized institutions designated by those member States who contribute to the work of the IPCS. This process also takes account of the advice and comments provided by manufacturers, workers' and employers' organizations, and other specialized national and professional institutions. A large number of national institutions are involved in the translation of the ICSCs into different languages.

Currently over 1,600 ICSCs are available free of charge on the Internet in 18 languages.

The Globally Harmonized System for the Classification and Labelling of Chemicals (GHS)

The ILO initiated this project as a follow-up to the adoption of the Chemicals Convention, 1990 (No. 170), and played an important role in steering its development under the umbrella first of the IPCS and then the Inter-Organization Programme for the Sound Management of Chemicals (IOMC). It was carried out by three institutions in partnership: the OECD for the harmonization of classification criteria for health and environmental hazards; the United Nations Committee of Experts on the Transport of Dangerous Goods (CETDG) for physical hazards; and the ILO for the harmonization of chemical hazard communication (labelling and chemical safety data sheets). In order to provide a mechanism for maintaining and promoting the application of the GHS by member States, the United Nations Economic and Social Council (ECOSOC) decided in 1999 to reconfigure the CETDG as the United Nations Committee of Experts on the Transport of Dangerous Goods and on the GHS. At its December 2002 session in Geneva, the full Committee adopted the final version of the GHS, which was officially published in 2003 in the six languages of the United Nations.

The GHS has been designed to cover all chemicals, including pure substances and mixtures, but excepting pharmaceutical products, and to provide for the chemical hazard communication requirements of the workplace, of the transport of dangerous goods, of consumers and of the environment. As such it is a truly harmonized and universal technical standard that is already starting to have a far-reaching impact on all national and international standards, both regulatory and technical, for safe dealing with chemicals. An increasingly large number of countries, including the United States and the EU countries, have made a commitment to progressive implementation of the GHS.⁴ The table in Annex VIII provides in a summary format the chemical hazard categories, related statements and classes defined by the GHS. Box 28 shows a sample of the pictogrammes designed under the GHS to identify particular chemical hazards.

The International Chemical Control Toolkit

The increasing use of chemicals in small and medium-sized enterprises (SMEs) and in emerging economies, where access to people with the experience to assess and control exposure to chemicals is limited, has led to the development

Box 28 Examples of GHS chemical hazard pictograms



Corrosive



Explosive



Flammable



Toxic

of a new approach to the control of chemicals. Called *control banding*, it is a complementary approach to protecting worker health by focusing resources on exposure controls and forms the basis of the ILO's International Chemical Control Toolkit (ICCT). Since it is not possible to assign a specific occupational exposure limit to every chemical in use, a chemical is assigned to a "hazard group", each group requiring defined control measures based on its hazard classification according to international criteria, the amount of chemical in use, and its volatility/dustiness. This leads to the assignment of one of four recommended control strategies:

- employ good industrial hygiene practice;
- use local exhaust ventilation;
- enclose the process;
- seek the advice of a specialist.

The user takes the hazard group, quantity, and level of dustiness/ volatility and matches them to a control approach using a simple table. The controls are described in control guidance sheets, which contain both general information and, for commonly performed tasks, more specific advice. This technique is not a substitute for OSH expertise, and specific operating knowledge and professional judgement are required for implementation of the best "reasonably practicable" combination of controls to minimize risks to workers.

Much of the recent work on control banding derives from work carried out by the UK Health and Safety Executive. Designed to assist SMEs in complying with the UK chemical safety regulations – the Control of Substances Hazardous to Health (COSHH) – the HSE scheme uses the 'EU risk phrases': wording that must be used within the EU in the classification and labelling of potentially harmful chemicals by the manufacturer of the chemical, and that the user may find on the safety data sheets or labels supplied with the chemical. Increasingly being applied worldwide, this

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approach has been internationalized by the ILO. The hazard bands in the ICCT are based on both the EU and GHS classification criteria, either of which can be used independently to achieve the selection of control measures; the GHS will become the single standard classification when it is incorporated into an EU directive currently in the making. A draft version of the Kit is available free of charge on the ILO's website.⁵

Notes

¹ This chapter is based mainly on the Occupational Safety and Health Convention (No. 155), and Recommendation (No. 164), 1981, the Occupational Health Services Recommendation, 1985 (No. 171), the Asbestos Convention, 1986 (No. 162), the Safety and Health in Mines Convention (No. 176), and Recommendation (No. 183), 1995, and the ILO's International Programme for the Improvement of Working Conditions (PIACT).

² The IPCS ICSCs are available at: <http://www.ilo.org/public/english/protection/safework/cis/products/icsc/index.htm>.

³ Chemicals Recommendation, 1990 (No. 177), Para. 10.1; UN, 2007.

⁴ For the status of the implementation of the GHS by countries and regional and international organizations, see: http://www.unece.org/trans/danger/publi/ghs/implementation_e.html.

⁵ http://www.ilo.org/public/english/protection/safework/ctrl_banding/index.htm.

ANNEXES

Accumulate: increase, build up.

Acute effect: an immediate, obvious response, usually short-term and often reversible.

Administrative controls: controls designed to limit the amount of time a worker spends at a potentially hazardous job.

Air monitoring: the sampling and measuring of pollutants in the air.

Biological monitoring: usually consists of blood and urine tests performed to look for traces of chemicals and biological indicators of chemical exposure.

Check-list analysis: a method for identifying hazards by comparison with experience in the form of a list of failure modes and hazardous situations.

Code of practice: a document offering practical guidance on the policy, standard-setting and practice in occupational and general public safety and health for use by governments, employers and workers in order to promote safety and health at the national level and the level of the installation. A code of practice is not necessarily a substitute for existing national legislation, regulations and safety standards.

Competent authority: a minister, government department or other public authority with the power to issue regulations, orders or other instructions having the force of law. Under national laws or regulations, the competent authority may be given responsibilities for specific activities, such as for implementation of national policy and procedures for reporting, recording and notification, workers' compensation, and the elaboration of statistics.

Competent person: a person with suitable training and sufficient knowledge, experience and skill for the performance of the specific work, in good safety conditions. The competent authority may define appropriate criteria for the designation of such persons and may determine the duties to be assigned to them.

Comply: obey (in the case of laws).

Control banding: an approach to controlling exposure to chemicals using information readily available to users from the suppliers of chemicals. Taking the users through a series of simple steps, it allows them to choose practical control solutions that should reduce chemical exposures to levels that present no danger to health.

Dangerous occurrence: readily identifiable event as defined under national laws and regulations, with potential to cause an injury or disease to persons at work or the public.

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Elimination: getting rid of (a specific hazard).

Engineering controls: common control measures, including isolation and enclosure ventilation.

Ergonomic principles: a concept whereby the work to be carried out is organized and specified – and tools and equipment designed and used – in such a way as to be matched with the physical and mental characteristics and capacity of the worker.

Excessive: above the level of comfort.

Exposure: the process of being exposed to something that is around; exposure can affect people in a number of different ways.

Employer: any physical or legal person who employs one or more workers.

Enterprise: an institutional unit or the smallest combination of institutional units that encloses and directly or indirectly controls all necessary functions to carry out its own production activities.

Establishment: an enterprise or part of an enterprise which independently engages in one, or predominantly one, kind of economic activity at or from one location or within one geographical area, for which data are available, or can be meaningfully compiled, that allow the calculation of the operating surplus.

Fatal occupational injury: occupational injury leading to death.

General ventilation: ventilation designed to keep the workplace comfortable.

Hazard: a physical situation with a potential for human injury, damage to property, damage to the environment or some combination of these.

Hazard analysis: the identification of undesired events that lead to the materialization of the hazard, the analysis of the mechanisms by which those undesired events could occur and, usually, the estimation of the extent, magnitude and relative likelihood of any harmful effects.

Hazard assessment: an evaluation of the results of a hazard analysis including judgements as to their acceptability and, as a guide, comparison with relevant codes, standards, laws and policies.

Hazardous substance: a substance which, by virtue of its chemical, physical or toxicological properties, constitutes a hazard.

Hazards: dangers.

Housekeeping: keeping the workplace clean and organized.

Hygiene: the practice of principles that maintain health, e.g. cleanliness.

IDLH (immediately dangerous to life or health): description of an environment that is very hazardous due to a high concentration of toxic chemicals or insufficient oxygen, or both.

Incapacity for work: inability to perform normal duties of work.

Incident: an unsafe occurrence arising out of or in the course of work where no personal injury is caused, or where personal injury requires only first-aid treatment.

Industrial hygiene: the recognition, measurement and control of workplace hazards.

Ingestion: the process of taking a substance into the body through the mouth.

Inhalation: the process of breathing in.

Isolation: an engineering control in which a hazardous job is moved to a place where fewer people will be exposed, or a worker is moved to a place where he or she will not be exposed at all.

Job enrichment: widening of the contents of the work tasks requiring e.g. higher qualification of the worker.

Job rotation: system whereby a worker carries out different work tasks, the change from one task to another occurring according to an agreed procedure or according to the initiative of the worker's work group.

Job security: protection against unlawful dismissal, as well as against unsatisfactory work conditions and an unsatisfactory work environment; sometimes also includes protection against falling income due to sickness or unemployment .

Labour inspection: a government function carried out by specially appointed inspectors who regularly visit work sites in order to establish whether legislation, rules and regulations are being complied with. They normally give verbal and written advice and guidance to reduce the risk factors and hazards at the workplace. They should, however, possess and use stronger power, e.g. to stop the work in cases of immediate and serious safety and health hazards or if their advice is repeatedly and unreasonably neglected by the employer. The goal is to improve the work conditions and the work environment.

Labour inspectorate: a government authority with the task of advising and giving directions on issues concerning the protection of workers and the work environment, as well as checking that the protection provided is sufficient.

Local exhaust ventilation: suction-based ventilation system designed to remove pollutant from the air.

Major accident: an unexpected, sudden occurrence including, in particular, a major emission, fire or explosion, resulting from abnormal developments in the course of an industrial activity, leading to a serious danger to workers, the public or the environment, whether immediate or delayed, inside or outside the installation, and involving one or more hazardous substances.

Major hazard installation: an industrial installation which stores, processes or produces hazardous substances in such a form and such a quantity that they possess the potential to cause a major accident. The term is also used for an installation which has on its premises, either permanently or temporarily, a quantity of hazardous substance which exceeds the amount prescribed in national or state major hazard legislation.

Medical surveillance programme: a medical programme, including pre-employment and periodic examinations, which helps to identify early warning signs of occupational diseases.

Monitoring: in the workplace, close observation to determine whether an area is safe for workers.

National policy: refers to the national policy on occupational safety and health and the working environment developed in accordance with the principles of Article 4 of the Occupational Safety and Health Convention, 1981 (No. 155).

National preventive safety and health culture: a culture 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.

National programme on occupational safety and health: any national programme that includes objectives to be achieved in a predetermined time frame, priorities and means of action formulated to improve occupational safety and health, and means to assess progress.

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National system for occupational safety and health: the infrastructure which provides the main framework for implementing the national policy and national programmes on occupational safety and health.

Non-fatal occupational injury: occupational injury not leading to death.

Notification: procedure specified in national laws and regulations which establishes the ways in which:

- the employer or self-employed person submits information concerning occupational accidents, commuting accidents, dangerous occurrences or incidents; or
- the employer, the self-employed person, the insurance institution or others directly concerned submit information concerning occupational diseases.

Occupational: related to the workplace.

Occupational accident: an occurrence arising out of, or in the course of, work which results in:

- fatal occupational injury or
- non-fatal occupational injury.

Occupational disease: a disease contracted as a result of an exposure to risk factors arising from work activity.

Occupational exposure limit: concentration in the air of a harmful substance which does not, so far as may be judged in the light of present scientific knowledge, cause adverse health effects in workers exposed for eight to ten hours a day and 40 hours a week. It is not an absolute dividing line between harmless and harmful concentrations but merely a guide for the prevention of hazards.

Occupational injury: death, any personal injury or disease resulting from an occupational accident.

Occupational safety and health management systems (OSHMS): A set of interrelated or interacting elements to establish OSH policy and objectives, and to achieve those objectives.

Personal hygiene: the practice of principles that maintain personal health, e.g. personal cleanliness.

Personal protective equipment: equipment a worker wears as a barrier between himself or herself and the hazardous agent(s).

Potential hazard: something that may be hazardous.

Preventive safety and health culture: one in which the right to a safe and healthy working environment is respected at all levels; where governments, 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.

Recording: procedure specified in national laws and regulations which establish the means by which the employer or self-employed person ensures that information be maintained on:

- (a) occupational accidents;
- (b) diseases;
- (c) commuting accidents; and
- (d) dangerous occurrences and incidents.

Reporting: procedure specified by the employer in accordance with national laws and regulations, and in accordance with the practice at the enterprise, for the submission by workers to their immediate supervisor, the competent person, or any other specified person or body, of information on:

- (a) any occupational accident or injury to health which arises in the course of or in connection with work;
- (b) suspected cases of occupational diseases;
- (c) commuting accidents; and
- (d) dangerous occurrences and incidents.

Respiratory hazards: hazards to the body's breathing system.

Risk: the likelihood of an undesired event with specified consequences occurring within a specified period or in specified circumstances. It may be expressed either as a frequency (the number of specified events in unit time) or as a probability (the probability of a specified event following a prior event), depending on the circumstances.

Risk management: all actions taken to achieve, maintain or improve the safety of an installation and its operation.

"Safe" levels: levels of exposure to substances below which there will not be a health risk to workers.

Safety audit: a methodical in-depth examination of all or part of a total operating system with relevance to safety.

Safety report: the written presentation of the technical, management and operational information covering the hazards of a major hazard installation and their control in support of a statement on the safety of the installation.

Safety team: a group which may be established by the works management for specific safety purposes, e.g. inspections or emergency planning. The team should include workers, their representatives where appropriate, and other persons with expertise relevant to the tasks.

Self-employed person: as defined by the competent authority with reference to the most recent version of the International Classification of Status in Employment (ICSE).

Short-term exposure limit (STEL): the maximum concentration that must not be exceeded for a continuous 15-minute exposure period. STELS are required by law in some countries.

Substitution: replacement of particularly hazardous chemicals or work processes by safer ones.

Susceptible: open to hazards, germs, etc.

Time-weighted average (TWA): exposures may be expressed as an eight-hour time-weighted average concentration, which is a measure of exposure intensity that has been averaged over an eight-hour work shift.

Toxic substance: a poisonous substance that can destroy life or injure health.

Vapour: tiny droplets of liquid suspended in the air.

Worker: any person who performs work, either regularly or temporarily, for an employer.

Workers' management: employers and persons at works level to whom responsibility and authority have been delegated by the employer for taking decisions relevant to the safety of major hazard installations. When appropriate, the definition also includes persons at corporate level having such authority.

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Workers' representative: any person who is recognized as such by national law or practice, in accordance with the Workers' Representatives Convention, 1971 (No. 135).

Work-related disease: a disease with multiple causal agents which may include factors in the work environment.

RELEVANT ILO OSH INSTRUMENTS ANNEX II – RATIFICATIONS AND STATUS

The following tables include a chronological list of Conventions, Recommendations and codes of practice, as well as the status of each Convention and Recommendation listed as decided by the Governing Body on the basis of the recommendations of the ILO Governing Body Working Party on Policy regarding the Revision of Standards of the Committee on Legal Issues and International Labour Standards (LILS/WP/PRS).

All up-to-date instruments are presented in bold type; those that need to be revised are presented in italic type. Instruments that have been classified as of interim status appear in both bold and italics.¹

Conventions Instrument	Ratifications (as of 17 Oct. 2007)	Status
Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)	1	Adopted after 1985; up-to-date instrument
Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155)	4	Adopted after 1985; up-to-date instrument
Safety and Health in Agriculture Convention, 2001 (No. 184)	8	Adopted after 1985; up-to-date instrument
Safety and Health in Mines Convention, 1995 (No. 176)	21	Adopted after 1985; up-to-date instrument
Prevention of Major Industrial Accidents Convention, 1993 (No. 174)	11	Adopted after 1985; up-to-date instrument

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Chemicals Convention, 1990 (No. 170)	15	Adopted after 1985; up-to-date instrument
Safety and Health in Construction Convention, 1988 (No. 167)	20	Adopted after 1985; up-to-date instrument
Asbestos Convention, 1986 (No. 162)	31	Adopted after 1985; up-to-date instrument
Occupational Health Services Convention, 1985 (No. 161)	21	Adopted after 1985; up-to-date instrument
Occupational Safety and Health Convention, 1981 (No. 155)	50	Up-to-date instrument
Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)	44	Up-to-date instrument
Occupational Cancer Convention, 1974 (No. 139)	36	Up-to-date instrument
<i>Benzene Convention, 1971 (No. 136)</i>	37	To be revised
Labour Inspection (Agriculture) Convention, 1969 (No. 129)	45	Priority Convention
<i>Maximum Weight Convention, 1967 (No. 127)</i>	25	To be revised, along with Recommendation No. 128
Hygiene (Commerce and Offices) Convention, 1964 (No. 120)	50	Up-to-date instrument
<i>Guarding of Machinery Convention, 1963 (No. 119)</i>	51	To be revised, along with Recommendation . No. 118
Radiation Protection Convention, 1960 (No. 115)	47	Up-to-date instrument
Protocol of 1995 to the Labour Inspection Convention, 1947 (No. 81)	10	Related to a priority Convention; up-to-date instrument
Labour Inspection Convention, 1947 (No. 81)	137	Priority Convention up-to-date instrument

Underground Work (Women) Convention, 1935 (No. 45) 85 Interim status

White Lead (Painting) Convention, 1921 (No. 13) 63 To be revised

Recommendations

Instrument

Status

Promotional Framework for Occupational Safety and Health Recommendation, 2006 (No. 197) Adopted after 1985; up-to-date instrument

List of Occupational Diseases Recommendation, 2002 (No. 194) Adopted after 1985; up-to-date instrument

Safety and Health in Agriculture Recommendation, 2001 (No. 192) Adopted after 1985; up-to-date instrument

Safety and Health in Mines Recommendation, 1995 (No. 183) Adopted after 1985; up-to-date instrument

Prevention of Major Industrial Accidents Recommendation, 1993 (No. 181) Adopted after 1985; up-to-date instrument

Chemicals Recommendation, 1990 (No. 177) Adopted after 1985; up-to-date instrument

Safety and Health in Construction Recommendation, 1988 (No. 175) Adopted after 1985; up-to-date instrument

Asbestos Recommendation, 1986 (No. 172) Adopted after 1985; up-to-date instrument

Occupational Health Services Recommendation, 1985 (No. 171) Adopted after 1985; up-to-date instrument

Occupational Safety and Health Recommendation, 1981 (No. 164) Up-to-date instrument

Working Environment (Air Pollution, Noise and Vibration) Recommendation, 1977 (No. 156) Up-to-date instrument

Occupational Cancer Recommendation, 1974 (No. 147) Up-to-date instrument

Benzene Recommendation, 1971 (No. 144) To be revised

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Labour Inspection (Agriculture) Recommendation, 1969 (No. 133)	Related to a priority Convention; up-to-date instrument
<i>Maximum Weight Recommendation, 1967 (No. 128)</i>	To be revised
Hygiene (Commerce and Offices) Recommendation, 1964 (No. 120)	Up-to-date instrument
<i>Guarding of Machinery Recommendation, 1963 (No. 118)</i>	To be revised
Workers' Housing Recommendation, 1961 (No. 115)	Up-to-date instrument
Radiation Protection Recommendation, 1960 (No. 114)	Up-to-date instrument
Welfare Facilities Recommendation, 1956 (No. 102)	Up-to-date instrument
Protection of Workers' Health Recommendation, 1953 (No. 97)	Up-to-date instrument
Labour Inspection (Mining and Transport) Recommendation, 1947 (No. 82)	Related to a priority Convention; up-to-date instrument
Labour Inspection Recommendation, 1947 (No. 81)	Related to a priority Convention; up-to-date instrument
Prevention of Industrial Accidents Recommendation, 1929 (No. 31)	Interim status
<i>White Phosphorus Recommendation, 1919 (No. 6)</i>	To be revised
<i>Lead Poisoning (Women and Children) Recommendation, 1919 (No. 4)</i>	To be revised
<i>Anthrax Prevention Recommendation, 1919 (No. 3)</i>	To be revised

Codes of practice

- Safety and health in the non-ferrous metals industries*, 2003
- HIV/AIDS and the world of work*, 2001
- Ambient factors in the workplace*, 2001
- Guidelines on occupational safety and health management systems*, 2001
- Use of synthetic vitreous fibre insulation wools (glass wool, rock wool, slag wool)*, 2000

Safety and health in forestry work, 1998
Technical and ethical guidelines for workers' health surveillance, 1998
Protection of workers' personal data, 1997
Management of alcohol- and drug-related issues in the workplace, 1996
Recording and notification of occupational accidents and diseases, 1995
Safety in the use of chemicals at work, 1993
Safety and health in construction, 1992
Prevention of major industrial accidents, 1991
Safety and health in opencast mines, 1991
Safety, health and working conditions in the transfer of technology to developing countries,
 1988
Radiation protection of workers (ionising radiations), 1987
Safety and health in coal mines, 1986
Safety in the use of asbestos, 1984
Occupational exposure to airborne substances harmful to health, 1980
Safety and health in underground coalmines, 2008

Note

¹ A review of the status and need for revision of ILO standards adopted before 1985 was concluded in March 2002 by the Working Party on Policy regarding the Revision of Standards of the Committee on Legal Issues and International Labour Standards ("the Cartier group" (see GB.283/LILS/WP/PRS/1/1). Of the relevant OSH standards examined by it, 35 were considered up to date, ten were in need of revision and two were considered as no longer fully up to date but still relevant in certain respects.

EXCERPTS FROM MAJOR OSH INTERNATIONAL LABOUR STANDARDS

ANNEX III

Convention concerning the promotional framework for occupational safety and health, 2006 (No. 187)

Excerpts, Articles 1 to 5

The General Conference of the International Labour Organization,

Having been convened at Geneva by the Governing Body of the International Labour Office, and having met in its Ninety-fifth Session on 31 May 2006,

Recognizing the global magnitude of occupational injuries, diseases and deaths, and the need for further action to reduce them, and

Recalling that the protection of workers against sickness, disease and injury arising out of employment is among the objectives of the International Labour Organization as set out in its Constitution, and

Recognizing that occupational injuries, diseases and deaths have a negative effect on productivity and on economic and social development, and

Noting paragraph III(g) of the Declaration of Philadelphia, which provides that the International Labour Organization has the solemn obligation to further among the nations of the world programmes which will achieve adequate protection for the life and health of workers in all occupations, and

Mindful of the ILO Declaration on Fundamental Principles and Rights at Work and its Follow-Up, 1998, and

Noting the Occupational Safety and Health Convention, 1981 (No. 155), the Occupational Safety and Health Recommendation, 1981 (No. 164), and other instruments of the International Labour Organization relevant to the promotional framework for occupational safety and health, and

Recalling that the promotion of occupational safety and health is part of the International Labour Organization's agenda of decent work for all, and

Recalling the Conclusions concerning ILO standards-related activities in the area of occupational safety and health – a global strategy, adopted by the International Labour Conference at its 91st Session (2003), in particular relating to ensuring that priority be given to occupational safety and health in national agendas, and

Stressing the importance of the continuous promotion of a national preventative safety and health culture, and

Having decided upon the adoption of certain proposals with regard to occupational safety and health, which is the fourth item on the agenda of the session, and

Having determined that these proposals shall take the form of an international Convention; adopts this fifteenth day of June of the year two thousand and six the following Convention, which may be cited as the Promotional Framework for Occupational Safety and Health Convention, 2006.

I. DEFINITIONS

Article 1

For the purpose of this Convention:

- (a) the term *national policy* refers to the national policy on occupational safety and health and the working environment developed in accordance with the principles of Article 4 of the Occupational Safety and Health Convention, 1981 (No. 155);
- (b) the term *national system for occupational safety and health* or *national system* refers to the infrastructure which provides the main framework for implementing the national policy and national programmes on occupational safety and health;
- (c) the term *national programme on occupational safety and health* or *national programme* refers to any national programme that includes objectives to be achieved in a predetermined time frame, priorities and means of action formulated to improve occupational safety and health, and means to assess progress;
- (d) the term *a national preventative safety and health culture* refers to a culture 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.

II. OBJECTIVE

Article 2

1. Each Member which ratifies this Convention shall promote continuous improvement of occupational safety and health to prevent occupational injuries, diseases and deaths,

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by the development, in consultation with the most representative organizations of employers and workers, of a national policy, national system and national programme.

2. Each Member shall take active steps towards achieving progressively a safe and healthy working environment through a national system and national programmes on occupational safety and health by taking into account the principles set out in instruments of the International Labour Organization (ILO) relevant to the promotional framework for occupational safety and health.

3. Each Member, in consultation with the most representative organizations of employers and workers, shall periodically consider what measures could be taken to ratify relevant occupational safety and health Conventions of the ILO.

III. NATIONAL POLICY

Article 3

1. Each Member shall promote a safe and healthy working environment by formulating a national policy.

2. Each Member shall promote and advance, at all relevant levels, the right of workers to a safe and healthy working environment.

3. In formulating its national policy, each Member, in light of national conditions and practice and in consultation with the most representative organizations of employers and workers, shall promote basic principles such as assessing occupational risks or hazards; combating occupational risks or hazards at source; and developing a national preventative safety and health culture that includes information, consultation and training.

IV. NATIONAL SYSTEM

Article 4

1. Each Member shall establish, maintain, progressively develop and periodically review a national system for occupational safety and health, in consultation with the most representative organizations of employers and workers.

2. The national system for occupational safety and health shall include among others:

- (a) laws and regulations, collective agreements where appropriate, and any other relevant instruments on occupational safety and health;
- (b) an authority or body, or authorities or bodies, responsible for occupational safety and health, designated in accordance with national law and practice;
- (c) mechanisms for ensuring compliance with national laws and regulations, including systems of inspection; and
- (d) arrangements to promote, at the level of the undertaking, cooperation between management, workers and their representatives as an essential element of workplace-related prevention measures.

3. The national system for occupational safety and health shall include, where appropriate:

- (a) a national tripartite advisory body, or bodies, addressing occupational safety and health issues;
- (b) information and advisory services on occupational safety and health;
- (c) the provision of occupational safety and health training;
- (d) occupational health services in accordance with national law and practice;
- (e) research on occupational safety and health;
- (f) a mechanism for the collection and analysis of data on occupational injuries and diseases, taking into account relevant ILO instruments;
- (g) provisions for collaboration with relevant insurance or social security schemes covering occupational injuries and diseases; and
- (h) support mechanisms for a progressive improvement of occupational safety and health conditions in micro-enterprises, in small and medium-sized enterprises and in the informal economy.

V. NATIONAL PROGRAMME

Article 5

1. Each Member shall formulate, implement, monitor, evaluate and periodically review a national programme on occupational safety and health in consultation with the most representative organizations of employers and workers.

2. The national programme shall:

- (a) promote the development of a national preventative safety and health culture;
- (b) contribute to the protection of workers by eliminating or minimizing, so far as is reasonably practicable, work-related hazards and risks, in accordance with national law and practice, in order to prevent occupational injuries, diseases and deaths and promote safety and health in the workplace;
- (c) be formulated and reviewed on the basis of analysis of the national situation regarding occupational safety and health, including analysis of the national system for occupational safety and health;
- (d) include objectives, targets and indicators of progress; and
- (e) be supported, where possible, by other complementary national programmes and plans which will assist in achieving progressively a safe and healthy working environment.

3. The national programme shall be widely publicized and, to the extent possible, endorsed and launched by the highest national authorities.

Recommendation concerning the promotional framework for occupational safety and health, 2006 (No. 197)

The General Conference of the International Labour Organization,

Having been convened at Geneva by the Governing Body of the International Labour Office, and having met in its Ninety-fifth Session on 31 May 2006,

Having decided upon the adoption of certain proposals with regard to occupational safety and health, which is the fourth item on the agenda of the session, and

Having determined that these proposals shall take the form of a Recommendation supplementing the Promotional Framework for Occupational Safety and Health Convention, 2006 (hereinafter referred to as “the Convention”);

adopts this fifteenth day of June of the year two thousand and six the following Recommendation, which may be cited as the Promotional Framework for Occupational Safety and Health Recommendation, 2006.

I. NATIONAL POLICY

1. The national policy formulated under Article 3 of the Convention should take into account Part II of the Occupational Safety and Health Convention, 1981 (No. 155), as well as the relevant rights, duties and responsibilities of workers, employers and governments in that Convention.

II. NATIONAL SYSTEM

2. In establishing, maintaining, progressively developing and periodically reviewing the national system for occupational safety and health defined in Article 1(b) of the Convention, Members:

- (a) should take into account the instruments of the International Labour Organization (ILO) relevant to the promotional framework for occupational safety and health listed in the Annex to this Recommendation, in particular the Occupational Safety and Health Convention, 1981 (No. 155), the Labour Inspection Convention, 1947 (No. 81) and the Labour Inspection (Agriculture) Convention, 1969 (No. 129); and
- (b) may extend the consultations provided for in Article 4(1) of the Convention to other interested parties.

3. With a view to preventing occupational injuries, diseases and deaths, the national system should provide appropriate measures for the protection of all workers, in particular, workers in high-risk sectors, and vulnerable workers such as those in the informal economy and migrant and young workers.

4. Members should take measures to protect the safety and health of workers of both genders, including the protection of their reproductive health.

5. In promoting a national preventative safety and health culture as defined in Article 1(d) of the Convention, Members should seek:

- (a) to raise workplace and public awareness on occupational safety and health through national campaigns linked with, where appropriate, workplace and international initiatives;
- (b) to promote mechanisms for delivery of occupational safety and health education and training, in particular for management, supervisors, workers and their representatives and government officials responsible for safety and health;
- (c) to introduce occupational safety and health concepts and, where appropriate, competencies, in educational and vocational training programmes;
- (d) to facilitate the exchange of occupational safety and health statistics and data among relevant authorities, employers, workers and their representatives;
- (e) to provide information and advice to employers and workers and their respective organizations and to promote or facilitate cooperation among them with a view to eliminating or minimizing, so far as is reasonably practicable, work-related hazards and risks;
- (f) to promote, at the level of the workplace, the establishment of safety and health policies and joint safety and health committees and the designation of workers' occupational safety and health representatives, in accordance with national law and practice; and
- (g) to address the constraints of micro-enterprises and small and medium-sized enterprises and contractors in the implementation of occupational safety and health policies and regulations, in accordance with national law and practice.

6. Members should promote a management systems approach to occupational safety and health, such as the approach set out in the *Guidelines on occupational safety and health management systems* (ILO-OSH 2001).

III. NATIONAL PROGRAMME

7. The national programme on occupational safety and health as defined in Article 1(c) of the Convention should be based on principles of assessment and management of hazards and risks, in particular at the workplace level.

8. The national programme should identify priorities for action, which should be periodically reviewed and updated.

9. In formulating and reviewing the national programme, Members may extend the consultations provided for in Article 5(1) of the Convention to other interested parties.

10. With a view to giving effect to the provisions of Article 5 of the Convention, the national programme should actively promote workplace prevention measures and activities that include the participation of employers, workers and their representatives.

11. The national programme on occupational safety and health should be coordinated, where appropriate, with other national programmes and plans, such as those relating to public health and economic development.

12. In formulating and reviewing the national programme, Members should take into account the instruments of the ILO relevant to the promotional framework for occupational safety and health, listed in the Annex to this Recommendation, without prejudice to their obligations under Conventions that they have ratified.

IV. NATIONAL PROFILE

13. Members should prepare and regularly update a national profile which summarizes the existing situation on occupational safety and health and the progress made towards achieving a safe and healthy working environment. The profile should be used as a basis for formulating and reviewing the national programme.

14. (1) The national profile on occupational safety and health should include information on the following elements, as applicable:

- (a) laws and regulations, collective agreements where appropriate, and any other relevant instruments on occupational safety and health;
- (b) the authority or body, or the authorities or bodies, responsible for occupational safety and health, designated in accordance with national law and practice;
- (c) the mechanisms for ensuring compliance with national laws and regulations, including the systems of inspection;
- (d) the arrangements to promote, at the level of the undertaking, cooperation between management, workers and their representatives as an essential element of workplace-related prevention measures;
- (e) the national tripartite advisory body, or bodies, addressing occupational safety and health issues;
- (f) the information and advisory services on occupational safety and health;
- (g) the provision of occupational safety and health training;
- (h) the occupational health services in accordance with national law and practice;
- (i) research on occupational safety and health;
- (j) the mechanism for the collection and analysis of data on occupational injuries and diseases and their causes, taking into account relevant ILO instruments;
- (k) the provisions for collaboration with relevant insurance or social security schemes covering occupational injuries and diseases; and
- (l) the support mechanisms for a progressive improvement of occupational safety and health conditions in micro-enterprises, in small and medium-sized enterprises and in the informal economy.

(2) In addition, the national profile on occupational safety and health should include information on the following elements, where appropriate:

- (a) coordination and collaboration mechanisms at national and enterprise levels, including national programme review mechanisms;

- (b) technical standards, codes of practice and guidelines on occupational safety and health;
- (c) educational and awareness-raising arrangements, including promotional initiatives;
- (d) specialized technical, medical and scientific institutions with linkages to various aspects of occupational safety and health, including research institutes and laboratories concerned with occupational safety and health;
- (e) personnel engaged in the area of occupational safety and health, such as inspectors, safety and health officers, and occupational physicians and hygienists;
- (f) occupational injury and disease statistics;
- (g) occupational safety and health policies and programmes of organizations of employers and workers;
- (h) regular or ongoing activities related to occupational safety and health, including international collaboration;
- (i) financial and budgetary resources with regard to occupational safety and health; and
- (j) data addressing demography, literacy, economy and employment, as available, as well as any other relevant information.

V. INTERNATIONAL COOPERATION AND EXCHANGE OF INFORMATION

15. The International Labour Organization should:

- (a) facilitate international technical cooperation on occupational safety and health with a view to assisting countries, particularly developing countries, for the following purposes:
 - (i) to strengthen their capacity for the establishment and maintenance of a national preventative safety and health culture;
 - (ii) to promote a management systems approach to occupational safety and health; and
 - (iii) to promote the ratification, in the case of Conventions, and implementation of instruments of the ILO relevant to the promotional framework for occupational safety and health, listed in the Annex to this Recommendation;
- (b) facilitate the exchange of information on national policies within the meaning of Article 1(a) of the Convention, on national systems and programmes on occupational safety and health, including on good practices and innovative approaches, and on the identification of new and emerging hazards and risks in the workplace; and

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- (c) provide information on progress made towards achieving a safe and healthy working environment.

VI. UPDATING OF THE ANNEX

16. The Annex to this Recommendation should be reviewed and updated by the Governing Body of the International Labour Office. Any revised annex so established shall be adopted by the Governing Body and shall replace the preceding annex after having been communicated to the Members of the International Labour Organization.

Occupational Safety and Health Convention, 1981 (No. 155)

Excerpts, Articles 1 to 21

PART I. SCOPE AND DEFINITIONS

Article 1

1. This Convention applies to all branches of economic activity.
2. A Member ratifying this Convention may, after consultation at the earliest possible stage with the representative organisations of employers and workers concerned, exclude from its application, in part or in whole, particular branches of economic activity, such as maritime shipping or fishing, in respect of which special problems of a substantial nature arise.
3. Each Member which ratifies this Convention shall list, in the first report on the application of the Convention submitted under Article 22 of the Constitution of the International Labour Organisation, any branches which may have been excluded in pursuance of paragraph 2 of this Article, giving the reasons for such exclusion and describing the measures taken to give adequate protection to workers in excluded branches, and shall indicate in subsequent reports any progress towards wider application.

Article 2

1. This Convention applies to all workers in the branches of economic activity covered.
2. A Member ratifying this Convention may, after consultation at the earliest possible stage with the representative organisations of employers and workers concerned, exclude from its application, in part or in whole, limited categories of workers in respect of which there are particular difficulties.
3. Each Member which ratifies this Convention shall list, in the first report on the application of the Convention submitted under Article 22 of the Constitution of the International Labour Organisation, any limited categories of workers which may have been excluded in pursuance of paragraph 2 of this Article, giving the reasons for such exclusion, and shall indicate in subsequent reports any progress towards wider application.

Article 3

For the purpose of this Convention –

- (a) the term *branches of economic activity* covers all branches in which workers employed, including the public service;
- (b) the term *workers* covers all employed persons, including public employees;
- (c) the term *workplace* covers all places where workers need to be or to go by reason of their work and which are under direct or indirect control of the employer;
- (d) the term *regulations* covers all provisions given force of law by the authority or authorities;
- (e) the term *health*, in relation to work, indicates not merely the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety and hygiene at work.

PART II. PRINCIPLES OF NATIONAL POLICY

Article 4

1. Each Member shall, in the light of national conditions and practice, and in consultation with the most representative organisations of employers and workers, formulate, implement and periodically review a coherent national policy on occupational safety, occupational health and the working environment.
2. The aim of the policy shall be to prevent accidents and injury to health arising out of, linked with or occurring in the course of work, by minimising, so far as is reasonably practicable, the causes of hazards inherent in the working environment.

Article 5

The policy referred to in Article 4 of this Convention shall take account of the following main spheres of action in so far as they affect occupational safety and health and the working environment:

- (a) design, testing, choice, substitution, installation, arrangement, use and maintenance of the material elements of work (workplaces, working environment, tools, machinery and equipment, chemical, physical and biological substances and agents, work processes);
- (b) relationships between the material elements of work and the persons who carry out or supervise the work, and adaptation of machinery, equipment, working time, organisation of work and work processes to the physical and mental capacities of the workers;
- (c) training, including necessary further training, qualifications and motivations of persons involved, in one capacity or another, in the achievement of adequate levels of safety and health;
- (d) communication and co-operation at the levels of the working group and the undertaking and at all other appropriate levels up to and including the national level;

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- (e) the protection of workers and their representatives from disciplinary measures as a result of actions properly taken by them in conformity with the policy referred to in Article 4 of this Convention.

Article 6

The formulation of the policy referred to in Article 4 of this Convention shall indicate the respective functions and responsibilities in respect of occupational safety and health and the working environment of public authorities, employers, workers and others, taking account both of the complementary character of such responsibilities and of national conditions and practice.

Article 7

The situation regarding occupational safety and health and the working environment shall be reviewed at appropriate intervals, either over-all or in respect of particular areas, with a view to identifying major problems, evolving effective methods for dealing with them and priorities of action, and evaluating results.

PART III. ACTION AT THE NATIONAL LEVEL

Article 8

Each Member shall, by laws or regulations or any other method consistent with national conditions and practice and in consultation with the representative organisations of employers and workers concerned, take such steps as may be necessary to give effect to Article 4 of this Convention.

Article 9

1. The enforcement of laws and regulations concerning occupational safety and health and the working environment shall be secured by an adequate and appropriate system of inspection.
2. The enforcement system shall provide for adequate penalties for violations of the laws and regulations.

Article 10

Measures shall be taken to provide guidance to employers and workers so as to help them to comply with legal obligations.

Article 11

To give effect to the policy referred to in Article 4 of this Convention, the competent authority or authorities shall ensure that the following functions are progressively carried out:

- (a) the determination, where the nature and degree of hazards so require, of

- conditions governing the design, construction and layout of undertakings, the commencement of their operations, major alterations affecting them and changes in their purposes, the safety of technical equipment used at work, as well as the application of procedures defined by the competent authorities;
- (b) the determination of work processes and of substances and agents the exposure to which is to be prohibited, limited or made subject to authorisation or control by the competent authority or authorities; health hazards due to the simultaneous exposure to several substances or agents shall be taken into consideration;
 - (c) the establishment and application of procedures for the notification of occupational accidents and diseases, by employers and, when appropriate, insurance institutions and others directly concerned, and the production of annual statistics on occupational accidents and diseases;
 - (d) the holding of inquiries, where cases of occupational accidents, occupational diseases or any other injuries to health which arise in the course of or in connection with work appear to reflect situations which are serious;
 - (e) the publication, annually, of information on measures taken in pursuance of the policy referred to in Article 4 of this Convention and on occupational accidents, occupational diseases and other injuries to health which arise in the course of or in connection with work;
 - (f) the introduction or extension of systems, taking into account national conditions and possibilities, to examine chemical, physical and biological agents in respect of the risk to the health of workers.

Article 12

Measures shall be taken, in accordance with national law and practice, with a view to ensuring that those who design, manufacture, import, provide or transfer machinery, equipment or substances for occupational use –

- (a) satisfy themselves that, so far as is reasonably practicable, the machinery, equipment or substance does not entail dangers for the safety and health of those using it correctly;
- (b) make available information concerning the correct installation and use of machinery and equipment and the correct use of substances, and information on hazards of machinery and equipment and dangerous properties of chemical substances and physical and biological agents or products, as well as instructions on how hazards are to be avoided;
- (c) undertake studies and research or otherwise keep abreast of the scientific and technical knowledge necessary to comply with subparagraphs (a) and (b) of this Article.

Article 13

A worker who has removed himself from a work situation which he has reasonable justification to believe presents an imminent and serious danger to his life or health shall be protected from undue consequences in accordance with national conditions and practice.

Article 14

Measures shall be taken with a view to promoting in a manner appropriate to national conditions and practice, the inclusion of questions of occupational safety and health and the working environment at all levels of education and training, including higher technical, medical and professional education, in a manner meeting the training needs of all workers.

Article 15

1. With a view to ensuring the coherence of the policy referred to in Article 4 of this Convention and of measures for its application, each Member shall, after consultation at the earliest possible stage with the most representative organisations of employers and workers, and with other bodies as appropriate, make arrangements appropriate to national conditions and practice to ensure the necessary co-ordination between various authorities and bodies called upon to give effect to Parts II and III of this Convention.
2. Whenever circumstances so require and national conditions and practice permit, these arrangements shall include the establishment of a central body.

PART IV. ACTION AT THE LEVEL OF THE UNDERTAKING

Article 16

1. Employers shall be required to ensure that, so far as is reasonably practicable, the workplaces, machinery, equipment and processes under their control are safe and without risk to health.
2. Employers shall be required to ensure that, so far as is reasonably practicable, the chemical, physical and biological substances and agents under their control are without risk to health when the appropriate measures of protection are taken.
3. Employers shall be required to provide, where necessary, adequate protective clothing and protective equipment to prevent, so far as is reasonably practicable, risk of accidents or of adverse effects on health.

Article 17

Whenever two or more undertakings engage in activities simultaneously at one workplace, they shall collaborate in applying the requirements of this Convention.

Article 18

Employers shall be required to provide, where necessary, for measures to deal with emergencies and accidents, including adequate first-aid arrangements.

Article 19

There shall be arrangements at the level of the undertaking under which –

- (a) workers, in the course of performing their work, co-operate in the fulfilment by their employer of the obligations placed upon him;
- (b) representatives of workers in the undertaking co-operate with the employer in the field of occupational safety and health;

- (c) representatives of workers in an undertaking are given adequate information on measures taken by the employer to secure occupational safety and health and may consult their representative organisations about such information provided they do not disclose commercial secrets;
- (d) workers and their representatives in the undertaking are given appropriate training in occupational safety and health;
- (e) workers or their representatives and, as the case may be, their representative organisations in an undertaking, in accordance with national law and practice, are enabled to enquire into, and are consulted by the employer on, all aspects of occupational safety and health associated with their work; for this purpose technical advisers may, by mutual agreement, be brought in from outside the undertaking;
- (f) a worker reports forthwith to his immediate supervisor any situation which he has reasonable justification to believe presents an imminent and serious danger to his life or health; until the employer has taken remedial action, if necessary, the employer cannot require workers to return to a work situation where there is continuing imminent and serious danger to life or health.

Article 20

Co-operation between management and workers and/or their representatives within the undertaking shall be an essential element of organisational and other measures taken in pursuance of Articles 16 to 19 of this Convention.

Article 21

Occupational safety and health measures shall not involve any expenditure for the workers.

Occupational Safety and Health Recommendation, 1981 (No. 164)

Excerpts, Paragraphs 1 to 17

I. SCOPE AND DEFINITIONS

1. (1) To the greatest extent possible, the provisions of the Occupational Safety and Health Convention, 1981, hereinafter referred to as the Convention, and of this Recommendation should be applied to all branches of economic activity and to all categories of workers.

(2) Provision should be made for such measures as may be necessary and practicable to give self-employed persons protection analogous to that provided for in the Convention and in this Recommendation.

2. For the purpose of this Recommendation –

- (a) the term *branches of economic activity* covers all branches in which workers employed, including the public service;

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- (b) the term *workers* covers all employed persons, including public employees;
- (c) the term *workplace* covers all places where workers need to be or to go by reason of their work and which are under the direct or indirect control of the employer;
- (d) the term *regulations* covers all provisions given force of law by the competent authority or authorities;
- (e) the term *health*, in relation to work, indicates not merely the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety and hygiene at work.

II. TECHNICAL FIELDS OF ACTION

3. As appropriate for different branches of economic activity and different types of work and taking into account the principle of giving priority to eliminating hazards at their source, measures should be taken in pursuance of the policy referred to in Article 4 of the Convention, in particular in the following fields:

- (a) design, siting, structural features, installation, maintenance, repair and alteration of workplaces and means of access thereto and egress therefrom;
- (b) lighting, ventilation, order and cleanliness of workplaces;
- (c) temperature, humidity and movement of air in the workplace;
- (d) design, construction, use, maintenance, testing and inspection of machinery and equipment liable to present hazards and, as appropriate, their approval and transfer;
- (e) prevention of harmful physical or mental stress due to conditions of work;
- (f) handling, stacking and storage of loads and materials, manually or mechanically;
- (g) use of electricity;
- (h) manufacture, packing, labelling, transport, storage and use of dangerous substances and agents, disposal of their wastes and residues, and, as appropriate, their replacement by other substances or agents which are not dangerous or which are less dangerous;
- (i) radiation protection;
- (j) prevention and control of, and protection against, occupational hazards due to noise and vibration;
- (k) control of the atmosphere and other ambient factors of workplaces;
- (l) prevention and control of hazards due to high and low barometric pressures;
- (m) prevention of fires and explosions and measures to be taken in case of fire or explosion;
- (n) design, manufacture, supply, use, maintenance and testing of personal protective equipment and protective clothing;

- (o) sanitary installations, washing facilities, facilities for changing and storing clothes, supply of drinking water, and any other welfare facilities connected with occupational safety and health;
- (p) first-aid treatment;
- (q) establishment of emergency plans;
- (r) supervision of the health of workers.

III. ACTION AT THE NATIONAL LEVEL

4. With a view to giving effect to the policy referred to in Article 4 of the Convention, and taking account of the technical fields of action listed in Paragraph 3 of this Recommendation, the competent authority or authorities in each country should –

- (a) issue or approve regulations, codes of practice or other suitable provisions on occupational safety and health and the working environment, account being taken of the links existing between safety and health, on the one hand, and hours of work and rest breaks, on the other;
- (b) from time to time review legislative enactments concerning occupational safety and health and the working environment, and provisions issued or approved in pursuance of clause (a) of this Paragraph, in the light of experience and advances in science and technology;
- (c) undertake or promote studies and research to identify hazards and find means of overcoming them;
- (d) provide information and advice, in an appropriate manner, to employers and workers and promote or facilitate co-operation between them and their organisations, with a view to eliminating hazards or reducing them as far as practicable; where appropriate, a special training programme for migrant workers in their mother tongue should be provided;
- (e) provide specific measures to prevent catastrophes, and to co-ordinate and make coherent the actions to be taken at different levels, particularly in industrial zones where undertakings with high potential risks for workers and the surrounding population are situated;
- (f) secure good liaison with the International Labour Occupational Safety and Health Hazard Alert System set up within the framework of the International Labour Organisation;
- (g) provide appropriate measures for handicapped workers.

5. The system of inspection provided for in paragraph 1 of Article 9 of the Convention should be guided by the provisions of the Labour Inspection Convention, 1947, and the Labour Inspection (Agriculture) Convention, 1969, without prejudice to the obligations thereunder of Members which have ratified these instruments.

6. As appropriate, the competent authority or authorities should, in consultation with the representative organisations of employers and workers concerned, promote

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measures in the field of conditions of work consistent with the policy referred to in Article 4 of the Convention.

7. The main purposes of the arrangements referred to in Article 15 of the Convention should be to –

- (a) implement the requirements of Articles 4 and 7 of the Convention;
- (b) co-ordinate the exercise of the functions assigned to the competent authority or authorities in pursuance of Article 11 of the Convention and Paragraph 4 of this Recommendation;
- (c) co-ordinate activities in the field of occupational safety and health and the working environment which are exercised nationally, regionally or locally, by public authorities, by employers and their organisations, by workers' organisations and representatives, and by other persons or bodies concerned;
- (d) promote exchanges of views, information and experience at the national level, at the level of an industry or that of a branch of economic activity.

8. There should be close co-operation between public authorities and representative employers' and workers' organisations, as well as other bodies concerned in measures for the formulation and application of the policy referred to in Article 4 of the Convention.

9. The review referred to in Article 7 of the Convention should cover in particular the situation of the most vulnerable workers, for example, the handicapped.

IV. ACTION AT THE LEVEL OF THE UNDERTAKING

10. The obligations placed upon employers with a view to achieving the objective set forth in Article 16 of the Convention might include, as appropriate for different branches of economic activity and different types of work, the following:

- (a) to provide and maintain workplaces, machinery and equipment, and use work methods, which are as safe and without risk to health as is reasonably practicable;
- (b) to give necessary instructions and training, taking account of the functions and capacities of different categories of workers;
- (c) to provide adequate supervision of work, of work practices and of application and use of occupational safety and health measures;
- (d) to institute organisational arrangements regarding occupational safety and health and the working environment adapted to the size of the undertaking and the nature of its activities;
- (e) to provide, without any cost to the worker, adequate personal protective clothing and equipment which are reasonably necessary when hazards cannot be otherwise prevented or controlled;
- (f) to ensure that work organisation, particularly with respect to hours of work and rest breaks, does not adversely affect occupational safety and health;

- (g) to take all reasonably practicable measures with a view to eliminating excessive physical and mental fatigue;
- (h) to undertake studies and research or otherwise keep abreast of the scientific and technical knowledge necessary to comply with the foregoing clauses.

11. Whenever two or more undertakings engage in activities simultaneously at one workplace, they should collaborate in applying the provisions regarding occupational safety and health and the working environment, without prejudice to the responsibility of each undertaking for the health and safety of its employees. In appropriate cases, the competent authority or authorities should prescribe general procedures for this collaboration.

12. (1) The measures taken to facilitate the co-operation referred to in Article 20 of the Convention should include, where appropriate and necessary, the appointment, in accordance with national practice, of workers' safety delegates, of workers' safety and health committees, and/or of joint safety and health committees; in joint safety and health committees workers should have at least equal representation with employers' representatives.

(2) Workers' safety delegates, workers' safety and health committees, and joint safety and health committees or, as appropriate, other workers' representatives should –

- (a) be given adequate information on safety and health matters, enabled to examine factors affecting safety and health, and encouraged to propose measures on the subject;
- (b) be consulted when major new safety and health measures are envisaged and before they are carried out, and seek to obtain the support of the workers for such measures;
- (c) be consulted in planning alterations of work processes, work content or organisation of work, which may have safety or health implications for the workers;
- (d) be given protection from dismissal and other measures prejudicial to them while exercising their functions in the field of occupational safety and health as workers' representatives or as members of safety and health committees;
- (e) be able to contribute to the decision-making process at the level of the undertaking regarding matters of safety and health;
- (f) have access to all parts of the workplace and be able to communicate with the workers on safety and health matters during working hours at the workplace;
- (g) be free to contact labour inspectors;
- (h) be able to contribute to negotiations in the undertaking on occupational safety and health matters;
- (i) have reasonable time during paid working hours to exercise their safety and health functions and to receive training related to these functions;
- (j) have recourse to specialists to advise on particular safety and health problems.

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13. As necessary in regard to the activities of the undertaking and practicable in regard to size, provision should be made for –

- (a) the availability of an occupational health service and a safety service, within the undertaking, jointly with other undertakings, or under arrangements with an outside body;
- (b) recourse to specialists to advise on particular occupational safety or health problems or supervise the application of measures to meet them.

14. Employers should, where the nature of the operations in their undertakings warrants it, be required to set out in writing their policy and arrangements in the field of occupational safety and health, and the various responsibilities exercised under these arrangements, and to bring this information to the notice of every worker, in a language or medium the worker readily understands.

15. (1) Employers should be required to verify the implementation of applicable standards on occupational safety and health regularly, for instance by environmental monitoring, and to undertake systematic safety audits from time to time.

(2) Employers should be required to keep such records relevant to occupational safety and health and the working environment as are considered necessary by the competent authority or authorities; these might include records of all notifiable occupational accidents and injuries to health which arise in the course of or in connection with work, records of authorisation and exemptions under laws or regulations to supervision of the health of workers in the undertaking, and data concerning exposure to specified substances and agents.

16. The arrangements provided for in Article 19 of the Convention should aim at ensuring that workers –

- (a) take reasonable care for their own safety and that of other persons who may be affected by their acts or omissions at work;
- (b) comply with instructions given for their own safety and health and those of others and with safety and health procedures;
- (c) use safety devices and protective equipment correctly and do not render them inoperative;
- (d) report forthwith to their immediate supervisor any situation which they have reason to believe could present a hazard and which they cannot themselves correct;
- (e) report any accident or injury to health which arises in the course of or in connection with work.

17. No measures prejudicial to a worker should be taken by reference to the fact that, in good faith, he complained of what he considered to be a breach of statutory requirements or a serious inadequacy in the measures taken by the employer in respect of occupational safety and health and the working environment.

Occupational Health Services Convention, 1985 (No. 161)

Excerpts, Articles 1 to 15

PART I. PRINCIPLES OF NATIONAL POLICY

Article 1

For the purpose of this Convention –

- (a) the term *occupational health services* means services entrusted with essentially preventive functions and responsible for advising the employer, the workers and their representatives in the undertaking on –
 - (i) the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work;
 - (ii) the adaptation of work to the capabilities of workers in the light of their state of physical and mental health;
- (b) the term *workers' representatives in the undertaking* means persons who are recognised as such under national law or practice.

Article 2

In the light of national conditions and practice and in consultation with the most representative organisations of employers and workers, where they exist, each Member shall formulate, implement and periodically review a coherent national policy on occupational health services.

Article 3

1. Each Member undertakes to develop progressively occupational health services for all workers, including those in the public sector and the members of production co-operatives, in all branches of economic activity and all undertakings. The provision made should be adequate and appropriate to the specific risks of the undertakings.
2. If occupational health services cannot be immediately established for all undertakings, each Member concerned shall draw up plans for the establishment of such services in consultation with the most representative organisations of employers and workers, where they exist.
3. Each Member concerned shall indicate, in the first report on the application of the Convention submitted under article 22 of the Constitution of the International Labour Organisation, the plans drawn up pursuant to paragraph 2 of this Article, and indicate in subsequent reports any progress in their application.

Article 4

The competent authority shall consult the most representative organisations of employers and workers, where they exist, on the measures to be taken to give effect to the provisions of this Convention.

PART II. FUNCTIONS

Article 5

Without prejudice to the responsibility of each employer for the health and safety of the workers in his employment, and with due regard to the necessity for the workers to participate in matters of occupational health and safety, occupational health services shall have such of the following functions as are adequate and appropriate to the occupational risks of the undertaking:

- (a) identification and assessment of the risks from health hazards in the workplace;
- (b) surveillance of the factors in the working environment and working practices which may affect workers' health, including sanitary installations, canteens and housing where these facilities are provided by the employer;
- (c) advice on planning and organisation of work, including the design of workplaces, on the choice, maintenance and condition of machinery and other equipment and on substances used in work;
- (d) participation in the development of programmes for the improvement of working practices as well as testing and evaluation of health aspects of new equipment;
- (e) advice on occupational health, safety and hygiene and on ergonomics and individual and collective protective equipment;
- (f) surveillance of workers' health in relation to work;
- (g) promoting the adaptation of work to the worker;
- (h) contribution to measures of vocational rehabilitation;
- (i) collaboration in providing information, training and education in the fields of occupational health and hygiene and ergonomics;
- (j) organising of first aid and emergency treatment;
- (k) participation in analysis of occupational accidents and occupational diseases.

PART III. ORGANISATION

Article 6

Provision shall be made for the establishment of occupational health services –

- (a) by laws or regulations; or
- (b) by collective agreements or as otherwise agreed upon by the employers and workers concerned; or
- (c) in any other manner approved by the competent authority after consultation with the representative organisations of employers and workers concerned.

Article 7

1. Occupational health services may be organised as a service for a single undertaking or as a service common to a number of undertakings, as appropriate.
2. In accordance with national conditions and practice, services may be organised by –
 - (a) the undertakings or groups of undertakings concerned;
 - (b) public authorities or official services;
 - (c) social security institutions;
 - (d) any other bodies authorised by the competent authority;
 - (e) a combination of any of the above.

Article 8

The employer, the workers and their representatives, where they exist, shall cooperate and participate in the implementation of the organisational and other measures relating to occupational health services on an equitable basis.

PART IV. CONDITIONS OF OPERATION*Article 9*

1. In accordance with national law and practice, occupational health services should be multidisciplinary. The composition of the personnel shall be determined by the nature of the duties to be performed.
2. Occupational health services shall carry out their functions in co-operation with the other services in the undertaking.
3. Measures shall be taken, in accordance with national law and practice, to ensure adequate co-operation and co-ordination between occupational health services and, as appropriate, other bodies concerned with the provision of health services.

Article 10

The personnel providing occupational health services shall enjoy full professional independence from employers, workers, and their representatives, where they exist, in relation to the functions listed in Article 5.

Article 11

The competent authority shall determine the qualifications required for the personnel providing occupational health services, according to the nature of the duties to be performed and in accordance with national law and practice.

Article 12

The surveillance of workers' health in relation to work shall involve no loss of earnings for them, shall be free of charge and shall take place as far as possible during working hours.

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Article 13

All workers shall be informed of health hazards involved in their work.

Article 14

Occupational health services shall be informed by the employer and workers of any known factors and any suspected factors in the working environment which may affect the workers' health.

Article 15

Occupational health services shall be informed of occurrences of ill health amongst workers and absence from work for health reasons, in order to be able to identify whether there is any relation between the reasons for ill health or absence and any health hazards which may be present at the workplace. Personnel providing occupational health services shall not be required by the employer to verify the reasons for absence from work.

Occupational Health Services Recommendation, 1985 (No. 171)

Excerpts, Paragraphs 1 to 43

I. PRINCIPLES OF NATIONAL POLICY

1. Each Member should, in the light of national conditions and practice and in consultation with the most representative organisations of employers and workers, where they exist, formulate, implement and periodically review a coherent national policy on occupational health services, which should include general principles governing their functions, organisation and operation.

2. (1) Each Member should develop progressively occupational health services for all workers, including those in the public sector and the members of production co-operatives, in all branches of economic activity and all undertakings. The provision made should be adequate and appropriate to the specific health risks of the undertakings.

(2) Provision should also be made for such measures as may be necessary and reasonably practicable to make available to self-employed persons protection analogous to that provided for in the Occupational Health Services Convention, 1985, and in this Recommendation.

II. FUNCTIONS

3. The role of occupational health services should be essentially preventive.

4. Occupational health services should establish a programme of activity adapted to the undertaking or undertakings they serve, taking into account in particular the occupational hazards in the working environment as well as the problems specific to the branches of economic activity concerned.

A. SURVEILLANCE OF THE WORKING ENVIRONMENT

5. (1) The surveillance of the working environment should include –

- (a) identification and evaluation of the environmental factors which may affect the workers' health;
- (b) assessment of conditions of occupational hygiene and factors in the organisation of work which may give rise to risks for the health of workers;
- (c) assessment of collective and personal protective equipment;
- (d) assessment where appropriate of exposure of workers to hazardous agents by valid and generally accepted monitoring methods;
- (e) assessment of control systems designed to eliminate or reduce exposure.

(2) Such surveillance should be carried out in liaison with the other technical services of the undertaking and in co-operation with the workers concerned and their representatives in the undertaking or the safety and health committee, where they exist.

6. (1) In accordance with national law and practice, data resulting from the surveillance of the working environment should be recorded in an appropriate manner and be available to the employer, the workers and their representatives in the undertaking concerned or the safety and health committee, where they exist.

(2) These data should be used on a confidential basis and solely to provide guidance and advice on measures to improve the working environment and the health and safety of workers.

(3) The competent authority should have access to these data. They may only be communicated by the occupational health service to others with the agreement of the employer and the workers or their representatives in the undertaking or the safety and health committee, where they exist.

7. The surveillance of the working environment should entail such visits by the personnel providing occupational health services as may be necessary to examine the factors in the working environment which may affect the workers' health, the environmental health conditions at the workplace and the working conditions.

8. Occupational health services should –

- (a) carry out monitoring of workers' exposure to special health hazards, when necessary;
- (b) supervise sanitary installations and other facilities for the workers, such as drinking water, canteens and living accommodation, when provided by the employer;
- (c) advise on the possible impact on the workers' health of the use of technologies;
- (d) participate in and advise on the selection of the equipment necessary for the personal protection of the workers against occupational hazards;
- (e) collaborate in job analysis and in the study of organisation and methods of work with a view to securing a better adaptation of work to the workers;
- (f) participate in the analysis of occupational accidents and occupational diseases and in accident prevention programmes.

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9. Personnel providing occupational health services should, after informing the employer, workers and their representatives, where appropriate –

- (a) have free access to all workplaces and to the installations the undertaking provides for the workers;
- (b) have access to information concerning the processes, performance standards, products, materials and substances used or whose use is envisaged, subject to their preserving the confidentiality of any secret information they may learn which does not affect the health of workers;
- (c) be able to take for the purpose of analysis samples of products, materials and substances used or handled.

10. Occupational health services should be consulted concerning proposed modifications in the work processes or in the conditions of work liable to have an effect on the health or safety of workers.

B. SURVEILLANCE OF THE WORKERS' HEALTH

11. (1) Surveillance of the workers' health should include, in the cases and under the conditions specified by the competent authority, all assessments necessary to protect the health of the workers, which may include –

- (a) health assessment of workers before their assignment to specific tasks which may involve a danger to their health or that of others;
- (b) health assessment at periodic intervals during employment which involves exposure to a particular hazard to health;
- (c) health assessment on resumption of work after a prolonged absence for health reasons for the purpose of determining its possible occupational causes, of recommending appropriate action to protect the workers and of determining the worker's suitability for the job and needs for reassignment and rehabilitation;
- (d) health assessment on and after the termination of assignments involving hazards which might cause or contribute to future health impairment.

(2) Provisions should be adopted to protect the privacy of the workers and to ensure that health surveillance is not used for discriminatory purposes or in any other manner prejudicial to their interests.

12. (1) In the case of exposure of workers to specific occupational hazards, in addition to the health assessments provided for in Paragraph 11 of this Recommendation, the surveillance of the workers' health should include, where appropriate, any examinations and investigations which may be necessary to detect exposure levels and early biological effects and responses.

(2) When a valid and generally accepted method of biological monitoring of the workers' health for the early detection of the effects on health of exposure to specific occupational hazards exists, it may be used to identify workers who need a detailed medical examination, subject to the individual worker's consent.

13. Occupational health services should be informed of occurrences of ill health amongst workers and absences from work for health reasons, in order to be able to identify whether there is any relation between the reasons for ill health or absence and any health hazards which may be present at the workplace. Personnel providing occupational health services should not be required by the employer to verify the reasons for absence from work.

14. (1) Occupational health services should record data on workers' health in personal confidential health files. These files should also contain information on jobs held by the workers, on exposure to occupational hazards involved in their work, and on the results of any assessments of workers' exposure to these hazards.

(2) The personnel providing occupational health services should have access to personal health files only to the extent that the information contained in the files is relevant to the performance of their duties. Where the files contain personal information covered by medical confidentiality this access should be restricted to medical personnel.

(3) Personal data relating to health assessments may be communicated to others only with the informed consent of the worker concerned.

15. The conditions under which, and time during which, personal health files should be kept, the conditions under which they may be communicated or transferred and the measures necessary to keep them confidential, in particular when the information they contain is placed on computer, should be prescribed by national laws or regulations or by the competent authority or, in accordance with national practice, governed by recognised ethical guidelines.

16. (1) On completing a prescribed medical examination for the purpose of determining fitness for work involving exposure to a particular hazard, the physician who has carried out the examination should communicate his conclusions in writing to both the worker and the employer.

(2) These conclusions should contain no information of a medical nature; they might, as appropriate, indicate fitness for the proposed assignment or specify the kinds of jobs and the conditions of work which are medically contra-indicated, either temporarily or permanently.

17. Where the continued employment of a worker in a particular job is contraindicated for health reasons, the occupational health service should collaborate in efforts to find alternative employment for him in the undertaking, or another appropriate solution.

18. Where an occupational disease has been detected through the surveillance of the worker's health, it should be notified to the competent authority in accordance with national law and practice. The employer, workers and workers' representatives should be informed that this notification has been carried out.

C. INFORMATION, EDUCATION, TRAINING, ADVICE

19. Occupational health services should participate in designing and implementing programmes of information, education and training on health and hygiene in relation to work for the personnel of the undertaking.

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20. Occupational health services should participate in the training and regular retraining of first-aid personnel and in the progressive and continuing training of all workers in the undertaking who contribute to occupational safety and health.

21. With a view to promoting the adaptation of work to the workers and improving the working conditions and environment, occupational health services should act as advisers on occupational health and hygiene and ergonomics to the employer, the workers and their representatives in the undertaking and the safety and health committee, where they exist, and should collaborate with bodies already operating as advisers in this field.

22. (1) Each worker should be informed in an adequate and appropriate manner of the health hazards involved in his work, of the results of the health examinations he has undergone and of the assessment of his health.

(2) Each worker should have the right to have corrected any data which are erroneous or which might lead to error.

(3) In addition, occupational health services should provide workers with personal advice concerning their health in relation to their work.

D. FIRST AID, TREATMENT AND HEALTH PROGRAMMES

23. Taking into account national law and practice, occupational health services in undertakings should provide first-aid and emergency treatment in cases of accident or indisposition of workers at the workplace and should collaborate in the organisation of first aid.

24. Taking into account the organisation of preventive medicine at the national level, occupational health services might, where possible and appropriate –

- (a) carry out immunisations in respect of biological hazards in the working environment;
- (b) take part in campaigns for the protection of health;
- (c) collaborate with the health authorities within the framework of public health programmes.

25. Taking into account national law and practice and after consultation with the most representative organisations of employers and workers, where they exist, the competent authority should, where necessary, authorise occupational health services, in agreement with all concerned, including the worker and his own doctor or a primary health care service, where applicable, to undertake or to participate in one or more of the following functions:

- (a) treatment of workers who have not stopped work or who have resumed work after an absence;
- (b) treatment of the victims of occupational accidents;
- (c) treatment of occupational diseases and of health impairment aggravated by work;
- (d) medical aspects of vocational re-education and rehabilitation.

26. Taking into account national law and practice concerning the organisation of health care, and distance from clinics, occupational health services might engage in other health activities, including curative medical care for workers and their families, as authorized by the competent authority in consultation with the most representative organisations of employers and workers, where they exist.

27. Occupational health services should co-operate with the other services concerned in the establishment of emergency plans for action in the case of major accidents.

E. OTHER FUNCTIONS

28. Occupational health services should analyse the results of the surveillance of the workers' health and of the working environment, as well as the results of biological monitoring and of personal monitoring of workers' exposure to occupational hazards, where they exist, with a view to assessing possible connections between exposure to occupational hazards and health impairment and to proposing measures for improving the working conditions and environment.

29. Occupational health services should draw up plans and reports at appropriate intervals concerning their activities and health conditions in the undertaking. These plans and reports should be made available to the employer and the workers' representatives in the undertaking or the safety and health committee, where they exist, and be available to the competent authority.

30. (1) Occupational health services, in consultation with the employers' and the workers' representatives, should contribute to research, within the limits of their resources, by participating in studies or inquiries in the undertaking or in the relevant branch of economic activity, for example, with a view to collecting data for epidemiological purposes and orienting their activities.

(2) The results of the measurements carried out in the working environment and of the assessments of the workers' health may be used for research purposes, subject to the provisions of Paragraphs 6(3), 11(2) and 14(3) of this Recommendation.

31. Occupational health services should participate with other services in the undertaking, as appropriate, in measures to prevent its activities from having an adverse effect on the general environment.

III. ORGANISATION

32. Occupational health services should, as far as possible, be located within or near the place of employment, or should be organised in such a way as to ensure that their functions are carried out at the place of employment.

33. (1) The employer, the workers and their representatives, where they exist, should co-operate and participate in the implementation of the organisational and other measures relating to occupational health services on an equitable basis.

(2) In conformity with national conditions and practice, employers and workers or their representatives in the undertaking or the safety and health committee, where they

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exist, should participate in decisions affecting the organisation and operation of these services, including those relating to the employment of personnel and the planning of the service's programmes.

34. (1) Occupational health services may be organised as a service within a single undertaking or as a service common to a number of undertakings, as appropriate.

(2) In accordance with national conditions and practice, occupational health services may be organised by –

- (a) the undertakings or groups of undertakings concerned;
- (b) the public authorities or official services;
- (c) social security institutions;
- (d) any other bodies authorised by the competent authority;
- (e) a combination of any of the above.

(3) The competent authority should determine the circumstances in which, in the absence of an occupational health service, appropriate existing services may, as an interim measure, be recognised as authorised bodies in accordance with subparagraph 2(d) of this Paragraph.

35. In situations where the competent authority, after consulting the representative organisations of employers and workers concerned, where they exist, has determined that the establishment of an occupational health service, or access to such a service, is impracticable, undertakings should, as an interim measure, make arrangements, after consulting the workers' representatives in the undertaking or the safety and health committee, where they exist, with a local medical service for carrying out the health examinations prescribed by national laws or regulations, providing surveillance of the environmental health conditions in the undertaking and ensuring that first-aid and emergency treatment are properly organised.

IV CONDITIONS OF OPERATION

36. (1) In accordance with national law and practice, occupational health services should be made up of multidisciplinary teams whose composition should be determined by the nature of the duties to be performed.

(2) Occupational health services should have sufficient technical personnel with specialised training and experience in such fields as occupational medicine, occupational hygiene, ergonomics, occupational health nursing and other relevant fields. They should, as far as possible, keep themselves up to date with progress in the scientific and technical knowledge necessary to perform their duties and should be given the opportunity to do so without loss of earnings.

(3) The occupational health services should, in addition, have the necessary administrative personnel for their operation.

37. (1) The professional independence of the personnel providing occupational health services should be safeguarded. In accordance with national law and practice, this might be

done through laws or regulations and appropriate consultations between the employer, the workers, and their representatives and the safety and health committees, where they exist.

(2) The competent authority should, where appropriate and in accordance with national law and practice, specify the conditions for the engagement and termination of employment of the personnel of occupational health services in consultation with the representative organisations of employers and workers concerned.

38. Each person who works in an occupational health service should be required to observe professional secrecy as regards both medical and technical information which may come to his knowledge in connection with his functions and the activities of the service, subject to such exceptions as may be provided for by national laws or regulations.

39. (1) The competent authority may prescribe standards for the premises and equipment necessary for occupational health services to exercise their functions.

(2) Occupational health services should have access to appropriate facilities for carrying out the analyses and tests necessary for surveillance of the workers' health and of the working environment.

40. (1) Within the framework of a multidisciplinary approach, occupational health services should collaborate with –

- (a) those services which are concerned with the safety of workers in the undertaking;
- (b) the various production units, or departments, in order to help them in formulating and implementing relevant preventive programmes;
- (c) the personnel department and other departments concerned;
- (d) the workers' representatives in the undertaking, workers' safety representatives and the safety and health committee, where they exist.

(2) Occupational health services and occupational safety services might be organised together, where appropriate.

41. Occupational health services should also, where necessary, have contacts with external services and bodies dealing with questions of health, hygiene, safety, vocational rehabilitation, retraining and reassignment, working conditions and the welfare of workers, as well as with inspection services and with the national body which has been designated to take part in the International Occupational Safety and Health Hazard Alert System set up within the framework of the International Labour Organisation.

42. The person in charge of an occupational health service should be able, in accordance with the provisions of Paragraph 38, to consult the competent authority, after informing the employer and the workers' representatives in the undertaking or the safety and health committee, where they exist, on the implementation of occupational safety and health standards in the undertaking.

43. The occupational health services of a national or multinational enterprise with more than one establishment should provide the highest standard of services, without discrimination, to the workers in all its establishments, regardless of the place or country in which they are situated.

MODEL OUTLINE FOR THE PREPARATION OF A NATIONAL PROFILE ON OSH¹

ANNEX IV

1. National regulatory framework

This section should identify and describe concisely, in the first part, the different enforceable instruments making up the national regulatory framework and in the second part, voluntary technical standards and guidelines that are recognized as reliable references at the national level.

1.1 *Laws and regulations*

- 1.1.1 Inclusions of reference(s) to OSH requirements in the constitution of the country, if any.
- 1.1.2 Laws, acts or regulations, as well as collective bargaining agreements.
- 1.1.3 Laws and regulations covering aspects related to OSH but issued under other Ministries (Health, Agriculture, Environment, Industry, Transport, etc.).
- 1.1.4 List ILO OSH Conventions that have been ratified by your country, are in the process of being ratified or have been selected for future ratification.

1.2 *OSH technical standards, guidelines and management systems*

- 1.2.1 Provide information on the implementation of OSH management systems at the enterprise level and any national regulatory or promotional action to apply these systems, including incentives. Indicate if the ILO guidelines on OSH management are or have been used as basis for action in this area. Indicate if any OSHMS auditing and certification schemes have been established, and if so, describe in some detail the mechanism and relation if any to regulatory systems.
- 1.2.2 Provide information on national and international technical standards used or applied either under existing regulations or on a voluntary basis. Indicate the type and source of the standard. Provide examples and relation if any to regulatory systems.

1.2.3 Provide information on the use of ILO codes of practice by national competent authorities, enterprises and trade unions.

2. National competent authorities

Include the designated authority or body or the authorities or bodies responsible for occupational safety and health. Where possible, include also human and economic resource data (number of staff, budget levels, etc.) for each system, agency, competent authority or body.

3. Inspection and enforcement systems

List and describe any inspectorate or inspection system having a significant role in the application of national OSH laws and regulations such as labour inspectorates, factory inspectorates, occupational health inspectorates, etc. For each inspection system, the following information elements if available should be provided:

- Scope of sectoral coverage (health, chemicals, transport, construction, mines, technical equipment, etc.);
- Scope of enforcement powers and their relation to an existing law or regulation if any;
- Related ministry or responsible body or administration;
- Structure and geographic distribution if applicable;
- Level of human resources (number of inspectors) and distribution of skills (general conditions of work, OSH, training, awareness raising, investigation or auditing, etc.);
- Total number of enterprises and undertakings covered by each inspection system;
- Any other pertinent information, if available, to characterize the inspection workload (number and types of inspections carried out per year, number of prosecutions, etc.); and
- Level and type of participation of inspectors in training and advisory services, if any.

4. Consultation, coordination and collaboration mechanisms

This section should provide information on all existing mechanisms established to ensure coordination, cooperation and collaboration among all the social partners with responsibilities in the implementation and management of OSH systems at the national and enterprise levels such as national tripartite advisory bodies, inter-agency/ministry, national boards or committees, mechanisms for employers' and workers' organizations collaboration and participation.

4.1 *At the national level*

For each mechanism include information on scope, membership, powers (advisory, etc.) and lines of communication (to which minister or ministry). Special attention

should be given to the level of participation of employers' and workers' organizations in these mechanisms. Describe any existing structures related to provincial or other territorial jurisdictions.

4.2 At the enterprise level

Information should be provided on any OSH requirements included in collective bargaining agreements with particular reference to the establishment and function of safety or joint safety and health committees. It should be indicated whether this inclusion is regulated or only part of the collective bargaining process.

5. National review mechanisms

Should be included here any existing national OSH councils, commissions, boards, committees or other bodies with the responsibility of reviewing periodically national legislation, policies and actions in the area of OSH. Indicate the extent to which national employers' and workers' organizations are involved or consulted in the functions of these bodies.

6. Information and advisory services and mechanisms

6.1 List national information centres or other similar bodies or mechanisms devoted to the production, collection and/or dissemination of OSH information such as newsletters, brochures, pamphlets, datasheets, databases, etc. Indicate linkage if any (national or collaborating centre) to ILO International OSH Information Centre (CIS) network. Provide data on level of technical capacities such as capacity to disseminate information via the Internet, publication volumes, etc.

6.2 List all designated OSH advisory services and mechanisms, such as Labour inspection services, OSH centres or dedicated agencies or bodies, as well as private service providers.

7. Occupational health services

Include any designated national system, agency or body having regulatory responsibility for, or involved in environment/exposure monitoring, the medical examination and surveillance of workers' health, and advisory services. Indicate any existing integration or linkages of such services with national primary health care systems.

8. OSH laboratories

Include key national or designated bodies responsible for carrying out analytical or assessment work related to the determination of worker exposure to various occupational hazards (analysis of air samples, biological samples, audiometric testing, etc.). Provide information on level of technical capabilities if possible, as well as eventual participation in accreditation schemes.

9. Social security, insurance schemes and compensation services

Describe any existing compensation, social security or insurance schemes covering occupational fatalities, injuries and diseases. Include extent of coverage and the

agencies or bodies responsible for the administration of such schemes. Indicate linkages to or involvement in the collection and treatment of statistics of occupational accidents and diseases. Indicate if any financial support is provided by the compensation bodies for the implementation of prevention programmes.

10. Educational, training and awareness raising structures

- 10.1** University and college courses related to OSH. Indicate existence; type, such as degree in public health, OSH or occupational medicine, OSH technician diplomas; and number of graduates per year in each category.
- 10.2** Training structures run by employers' or workers' organizations (identity and training capacities in persons per year).
- 10.3** Institutions conducting legally required training for OSH specialists such as safety officers, safety committee members, or for the delivery of certification in specific skills such as scaffold building, operating special equipment such as cranes or earth moving equipment, etc. Provide, if available, a list of the skills requiring certification training and information on the institutions providing this type of training (number of persons trained per year, etc.).
- 10.4** Training and educational functions of national safety councils and associations.

11. Specialized technical, medical and scientific institutions

- 11.1** List existing poison control centres, their links with occupational health services if any and level of human and financial resources devoted to poison control centres.
- 11.2** Standardizing bodies, i.e. bodies that produce technical standards, or provide the expertise necessary to certify the conformity of machines, processes and other mechanisms with regulatory requirements concerning safety. Examples include certification of pressure vessels, electrical tools and machines, machine guarding equipment, etc.
- 11.3** Institutions and laboratories specialized in occupational hazard and risk assessment related to chemicals (toxicology, epidemiology, product safety, etc). List designated and private bodies separately.
- 11.4** Emergency preparedness, warning and response services, such as civil defence, fire brigades, chemical spill responders training to deal with major emergencies, etc.
- 11.5** Non-governmental bodies involved in OSH-related activities, such as professional associations with activities directly linked to aspects of OSH such as OSH specialists, occupational physicians, chemists, safety engineers, etc.

12. Overall national level of human resources active in the area of OSH

- 12.1** If these data have been included partially in the sections above, summarize them in tabular form under this section. To the extent possible include

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information on legal and educational requirements to qualify for each profession.

- 12.2 Number of occupational health physicians.
- 12.3 Number of occupational health nurses.
- 12.4 Number of occupational safety and health specialists, including safety engineers and technicians.
- 12.5 Number of inspectors. List by group for each area covered (labour, health, OSH, machine safety, etc.).
- 12.6 Number of environmental protection specialists.

13. Statistics of occupational accidents and diseases

- 13.1 List existing mechanisms, if any for the recording and notification of occupational accidents and diseases. Indicate conformity with the ILO code of practice on the recording and notification of occupational accidents and diseases.
- 13.2 Indicate the presence of a national list of occupational diseases and the mechanisms available for its periodic review and updating.
- 13.3 Provide the number of occupational injuries per year for the last five years (total and per sector of economic activity). Provide also, if possible, an estimation of under-reporting as % range, with a description of the calculation methodology used.

14. Policies and programmes of employers' and workers' organizations

Provide a description of or indicate if the elements listed below exist in these organizations.

14.1 *Employers' organizations*

- 14.1.1 OSH policy statement.
- 14.1.2 Structure for policy implementation (OSH unit, OSH committee).
- 14.1.3 Programmes: training, information, and awareness-raising campaigns for members.
- 14.1.4 OSH elements in collective bargaining.
- 14.1.5 Participation in the national tripartite dialogue.

14.2 *Workers' organizations*

- 14.2.1 OSH policy statement.
- 14.2.2 Structure for policy implementation (OSH unit, OSH committee).
- 14.2.3 Programmes: training, information, and awareness-raising campaigns for members.
- 14.2.4 OSH elements in collective bargaining.

14.2.5 Participation in the national tripartite dialogue.

15. Regular and ongoing activities related to OSH

15.1.1 List regular activities at the national level designed to improve level of prevention and protection.

15.1.2 National initiatives such as awareness-raising campaigns, safety days (week), media campaigns, etc. (indicate only if these means are used and their periodicity).

15.1.3 Industry initiatives (such as responsible care programmes or product stewardship, implementation of OSH management system approaches, ISO 9000 and 14000, certification schemes, etc.).

15.2 *Joint trade union and employers' OSH activities and initiatives.*

16. International cooperation

List international capacity building, technical cooperation or other internationally based or motivated activities directly related to all aspects of OSH and the environment. Provide details on the funding agencies, intergovernmental and non-governmental organization involved.

17. General country data

17.1 *Demographic data*

17.1.1 Total population.

17.1.2 Total economically active population (employed persons in all sectors). Provide percentages per sector of economic activity if available.

17.1.2.1 Men workers (in millions or % of number in 17.1.2).

17.1.2.2 Young men workers (14 to 18 years old).

17.1.2.3 Women workers (in millions or % of number in 17.1.2).

17.1.2.4 Young women workers (14 to 18 years old).

17.1.3 Provide if possible a % estimate of men, women and young workers employed in each sector of economic activity.

17.1.4 Indicate also percentage of the labour force considered to be active in the informal economy and therefore not or marginally covered by any OSH, social protection measures or schemes (social security, accident insurance, workmen's compensation, etc.).

17.2 *Literacy levels*

17.2.1 Percentage of whole population with at least elementary school level of ability to read and write in national language.

17.2.2 Percentage of labour force with at least elementary school level and ability to read and write in national language.

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17.3 *Economic data*

17.3.1 Gross domestic product (GDP).

17.3.2 Annual per capita income.

17.3.3 Estimated overall level of resources (in US\$ or as percentage of GDP) devoted to OSH preventive and protective measures and enforcement of legislation. These can be estimated by totalling the approximate or average budgets of institutions and bodies.

18. **Other relevant information**

The national body or expert responsible for preparing the national profile should make available any national or other reports relevant to OSH issues in the country, such as annual reports produced by national institutions responsible for the implementation of the various aspects of OSH. Copies of the texts of the main OSH laws and regulations should also be provided if possible.

19. **Elements for input in the situation analysis**

In this section, the expert should provide a preliminary analysis of the collected data and summarize key points and elements which may be useful in undertaking a situation analysis to identify priorities for action to be considered for action under the national programme. This would include mainly strong points, weaknesses and gaps related to systems, methodology, infrastructures, skills, and capacities, economic and other aspects affecting the implementation of an OSH system in the country.

Note

¹ International Labour Office document developed in the context of preparations for the 2003 International Labour Conference general discussion on ILO standard-related activities in the area of occupational safety and health, and of the adoption of the Convention (No. 187) and the Recommendation (No. 197) on the Promotional Framework for Occupational Safety and Health, 2006.

A CHECKLIST FOR EMPLOYERS WRITING A SAFETY POLICY STATEMENT

ANNEX V

The following checklist is intended as an aid in drawing up and reviewing your safety policy statement. Some of the points listed may not be relevant in your case, or there may be additional points that you may wish to cover.

General considerations

- Does the statement express a commitment to safety and health and are your obligations towards your employees made clear?
- Does the statement say which senior officer is responsible for seeing that it is implemented and for keeping it under review, and how this will be done?
- Is it signed and dated by you or a partner or senior director?
- Have the views of managers and supervisors, safety representatives and of the safety committee been taken into account?
- Were the duties set out in the statement discussed with the people concerned in advance, and accepted by them, and do they understand how their performance is to be assessed and what resources they have at their disposal?
- Does the statement make clear that cooperation on the part of all employees is vital to the success of your safety and health policy?
- Does it say how employees are to be involved in safety and health matters, for example by being consulted, by taking part in inspections, and by sitting on a safety committee?
- Does it show clearly how the duties for safety and health are allocated, and are the responsibilities at different levels described? Does it say who is responsible for the following matters (including deputies where appropriate)?
 - reporting investigations and recording accidents
 - fire precautions, fire drill, evacuation procedures

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- first aid
- safety inspections
- the training programme
- ensuring that legal requirements are met, for example regular testing of lifts and notifying accidents to the safety and health inspector.

Special considerations

Plant and substances

- Keeping the workplace, including staircases, floors, ways in and out, washrooms, etc., in a safe and clean condition by cleaning, maintenance and repair.
- Maintenance of equipment such as tools, ladders, etc. Are they in safe condition?
- Maintenance and proper use of safety equipment such as helmets, boots, goggles, respirators, etc.
- Maintenance and proper use of plant, machinery and guards. Regular testing and maintenance of lifts, hoists, cranes, pressure systems, boilers and other dangerous machinery, emergency repair work, and safe methods of doing it. Maintenance of electrical installations and equipment.
- Safe storage, handling and, where applicable, packaging, labelling and transport of dangerous substances.
- Controls on work involving harmful substances such as lead and asbestos.
- The introduction of new plant, equipment or substances into the workplace – by examination, testing and consultation with the workforce.

Other hazards

- Noise problems – wearing of ear protection, and control of noise at source.
- Preventing unnecessary or unauthorized entry into hazardous areas.
- Lifting of heavy or awkward loads.
- Protecting the safety of employees against assault when handling or transporting the employer's money or valuables. Special hazards to employees when working on unfamiliar sites, including discussion with site manager where necessary.
- Control of works transport, e.g. fork lift trucks, by restricting use to experienced and authorized operators or operators under instruction (which should deal fully with safety aspects).

Emergencies

- Ensuring that fire exits are marked, unlocked and unobstructed.
- Maintenance and testing of fire fighting equipment, fire drills and evacuation procedures.

- First aid, including name and location of person responsible for first aid and of deputy, and location of first-aid box.

Communication

- Giving your employees information about the general duties under the national legislation and specific legal requirements relating to their work.
- Giving employees necessary information about substances, plant, machinery, and equipment with which they come into contact.
- Discussing with contractors, before they come on site, how they can plan to do their job, whether they need equipment of yours to help them, whether they can operate in a segregated area or when part of the plant is shut down and, if not, what hazards they may create for your employees and vice versa.

Training

- Training employees, supervisors and managers to enable them to work safely and to carry out their safety and health responsibilities efficiently.

Supervising

- Supervising employees so far as necessary for their safety – especially young workers, new employees and employees carrying out unfamiliar tasks.

Keeping check

- Regular inspections and checks of the workplace, machinery appliances and working methods.

Source: Health and Safety Executive, United Kingdom: *Writing a safety policy: Guidance for employers* (no date).

A CHECKLIST FOR PLANNING AND IMPLEMENTING A WORKPLACE POLICY ON HIV/AIDS

ANNEX VI

Employers, workers and their organizations should cooperate in a positive, caring manner to develop a policy on HIV/AIDS that responds to, and balances the needs of, employers and workers. Backed by commitment at the highest level, the policy should offer an example to the community in general of how to manage HIV/AIDS. The core elements of this policy, as defined in the ILO code of practice, include information about HIV/AIDS and how it is transmitted; educational measures to enhance understanding of personal risk and promote enabling strategies; practical prevention measures which encourage and support behavioural change; measures for the care and support of affected workers, whether it is they or a family member who is living with HIV/AIDS; and the principle of zero tolerance for any form of stigmatization or discrimination at the workplace. The following steps may be used as a checklist for developing a policy and programme:

- HIV/AIDS committee is set up with representatives of top management, supervisors, workers, trade unions, human resources department, training department, industrial relations unit, occupational health unit, health and safety committee, and persons living with AIDS, if they agree;
- committee decides its terms of reference and decision-making powers and responsibilities;
- national laws and their implications for the enterprise are reviewed;
- committee assesses the impact of the HIV epidemic on the workplace and the needs of workers infected and affected by HIV/AIDS by carrying out a confidential baseline study;
- committee establishes what health and information services are already available – both at the workplace and in the local community;
- committee formulates a draft policy; draft circulated for comment then revised and adopted;

- committee draws up a budget, seeking funds from outside the enterprise if necessary, and identifies existing resources in the local community;
- committee establishes plan of action, with timetable and lines of responsibility, to implement policy;
- policy and plan of action are widely disseminated through, for example, notice boards, mailings, pay slip inserts, special meetings, induction courses, training sessions;
- committee monitors the impact of the policy;
- committee regularly reviews the policy in the light of internal monitoring and external information about the virus and its workplace implications.

Every step described above should be integrated into a comprehensive enterprise policy that is planned, implemented and monitored in a sustained and ongoing manner.

Source: ILO, 2001a, Appendix III.

HIERARCHY OF CONTROLS APPLIED TO RISK OF BLOOD- BORNE PATHOGEN EXPOSURE¹

ANNEX VII

Methods to control occupational hazards have traditionally been discussed in terms of hierarchy and presented in order of priority for their effectiveness in preventing exposure to the hazard or preventing injury resulting from exposure to the hazard. The table below shows how to apply the hierarchy of controls framework to blood-borne pathogen hazards.

Method of control

Elimination of hazard – complete removal of a hazard from the work area. Elimination is the method preferred in controlling hazards and should be selected whenever possible. Examples include: removing sharps and needles and eliminating all unnecessary injections. Jet injectors may substitute for syringes and needles. Other examples include the elimination of unnecessary sharps like towel clips, and using needleless IV systems.

Engineering controls – controls that isolate or remove a hazard from a workplace. Examples include sharps disposal containers (also known as safety boxes) and needles that retract, sheathe or blunt immediately after use (also known as safer needle devices or sharps with engineered injury-prevention features).

Efficacy of control measure

IV needleless systems were shown to be 78.7 per cent effective in reducing IV-line-related needle-stick injuries over one year in a Canadian study.

Sharps containers reduced injuries by two-thirds.
A review of seven studies of safer needle devices demonstrated a reduction in injuries from 23–100 per cent with an average of 71 per cent

Work practice controls – reduce exposure to occupational hazards through the behaviour of workers. Examples include no needle recapping, placing sharps containers at eye level and at arm’s reach, emptying sharps containers before they are full, and establishing means for the safe handling and disposal of sharps devices before beginning a procedure.

Administrative controls – policies aimed to limit exposure to the hazard such as Universal Precautions. Examples include allocation of resources demonstrating a commitment to health-worker safety, a needle-stick injury prevention committee, an exposure control plan, removing all unsafe devices, and consistent training on the use of safe devices.

Personal protective equipment (PPE) – barriers and filters between the worker and the hazard. Examples include eye goggles, gloves, masks and gowns.

Elimination of recapping resulted in a two-thirds reduction in needle-stick injuries

Poor safety climate and reduced staffing was associated with a 50 per cent increase in needle-stick injuries and near misses.

PPE will prevent exposures to blood splashes but will not prevent needle-stick injuries. Double gloving in the surgical setting reduced puncture of the inner glove by 60–70 per cent.

Note

¹ Taken from ILO/WHO, 2005, Fact Sheet No.4.

HAZARD CATEGORIES DEFINED IN THE GLOBALLY HARMONIZED SYSTEM FOR THE CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)¹

ANNEX VIII

Physical hazards

GHS hazard class	Hazard statements for physical hazards	Hazard category
Explosives	Unstable explosive	Unstable explosive
	Explosive; mass explosion hazard	Division 1.1
	Explosive; severe projection hazard	Division 1.2
	Explosive; fire, blast or projection hazard	Division 1.3
	Fire or projection hazard	Division 1.4
	May mass explode in fire	Division 1.5
Flammable gases	Extremely flammable gas	1
	Flammable gas	2
Flammable aerosols	Extremely flammable aerosol	1
	Flammable aerosol	2
Flammable liquids	Extremely flammable liquid and vapour	1
	Highly flammable liquid and vapour	2
	Flammable liquid and vapour	3
	Combustible liquid	4
Flammable solids	Flammable solid	1, 2
Self-reactive substances and mixtures and organic peroxides	Heating may cause an explosion	Type A
	Heating may cause a fire or explosion	Type B
	Heating may cause a fire	Types C, D, E, F

Pyrophoric liquids; pyrophoric solids	Catches fire spontaneously if exposed to air	1
Self-heating substances and mixtures	Self-heating; may catch fire	1
	Self-heating in large quantities; may catch fire	2
Substances and mixtures which, in contact with water, emit flammable gases	In contact with water releases flammable gases which may ignite spontaneously	1
	In contact with water releases flammable gas	2, 3
Oxidizing gases	May cause or intensify fire; oxidizer	1
Oxidizing liquids; oxidizing solids	May cause fire or explosion; strong oxidizer	1
	May intensify fire; oxidizer	2, 3
Gases under pressure	Contains gas under pressure; may explode if heated	Compressed gas
		Liquefied gas
		Dissolved gas
Gases under pressure	Contains refrigerated gas; may cause cryogenic burns or injury	Refrigerated liquefied gas
Corrosive to metals	May be corrosive to metals	1

Health hazards

GHS hazard class	Hazard statements for health hazards	Hazard category
Acute toxicity – oral	Fatal if swallowed	1, 2
	Toxic if swallowed	3
	Harmful if swallowed	4
	May be harmful if swallowed	5
Aspiration hazard	May be fatal if swallowed and enters airways	1
	May be harmful if swallowed and enters airways	2
Acute toxicity – dermal	Fatal in contact with skin	1, 2
	Toxic in contact with skin	3
	Harmful in contact with skin	4
	May be harmful in contact with skin	5

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Skin corrosion/irritation	Causes severe skin burns and eye damage	1A, 1B, 1C
	Causes skin irritation	2
	Causes mild skin irritation	3
Sensitization – skin	May cause an allergic skin reaction	1
Serious eye damage/ eye irritation	Causes serious eye damage	1
	Causes serious eye irritation	2A
	Causes eye irritation	2B
Acute toxicity – inhalation	Fatal if inhaled	1, 2
	Toxic if inhaled	3
	Harmful if inhaled	4
	May be harmful if inhaled	5
Sensitization – respiratory	May cause allergy or asthma symptoms or breathing difficulties if inhaled	1
Specific target organ toxicity – single exposure; respiratory tract irritation	May cause respiratory irritation	3
	May cause drowsiness or dizziness	3
Germ cell mutagenicity	May cause genetic defects	1A, 1B
	Suspected of causing genetic defects	2
Carcinogenicity	May cause cancer	1A, 1B
	Suspected of causing cancer	2
Reproductive toxicity	May damage fertility or the unborn child	1A, 1B
	Suspected of damaging fertility or the unborn child	2
Reproductive toxicity – effects on or via lactation	May cause harm to breast-fed children	Additional category
Specific target organ toxicity – single exposure	Causes damage to organs	1
	May cause damage to organs	2
Specific target organ toxicity – repeated exposure	Causes damage to organs	1
	May cause damage to organs	2

Environmental hazards

GHS hazard class	Hazard statements for environmental hazards	Hazard category
Hazardous to the aquatic environment – acute toxicity	Very toxic to aquatic life	1
	Toxic to aquatic life	2
	Harmful to aquatic life	3

Hazardous to the aquatic environment – chronic toxicity	Very toxic to aquatic life with long-lasting effects	1
	Toxic to aquatic life with long-lasting effects	2
	Harmful to aquatic life with long-lasting effects	3
	May cause long-lasting harmful effects to aquatic life	4

Note

¹ Adapted from UN, 2003.

THE ILO'S PROGRAMME ON SAFETY, HEALTH AND THE ENVIRONMENT (SAFEWORK)¹

ANNEX IX

The objectives of the ILO Programme on Safety, Health and the Environment (SafeWork) are set within the Social Protection Sector, which includes also other programmes such as Conditions of Work and Employment (TRAVAIL), HIV/AIDS (ILO/AIDS), International Migration (MIGRANT), Social Security (SEC/SOC) and Strategies and Tools Against Social Exclusion and Poverty (STEP). The objectives of SafeWork are to:

- promote preventive policies and programmes;
- extend protection to vulnerable groups of workers;
- better equip governments and employers' and workers' organizations to address workers' well-being, occupational health care and the quality of working life; and
- document the social and economic impact of improving worker protection.

These objectives will be pursued using a four-pronged strategy of advocacy, development of a knowledge base, capacity building for constituents and support for direct action programmes. The main components cover research, policy formulation, training and developing tools needed for programme implementation. Particular attention will be paid to sectors in which risks to life and safety are manifestly high, such as agriculture, mining, transportation and construction, as well as workers in the informal sector and those occupationally exposed to abuse and exploitation, including women, children and migrants.

SafeWork will be comprehensive, taking into consideration all factors which influence health, safety and productivity. It has been strengthened with the integration of a health promotion component (dealing with substance abuse, stress, violence, etc.) and labour inspection services.

Advocacy, networking and technical cooperation are seen as integral parts of the programme and establish the framework within which a business plan on SafeWork should be built that will truly tap into its potential and maximize the programme's impact on promoting health, well-being, safety and productivity worldwide.

SafeWork aims to create worldwide awareness of the dimensions and consequences of work-related accidents, injuries and diseases; to place the health and safety of all workers on the international agenda; and to stimulate and support practical action at all levels. With this in mind, the programme will launch ground-breaking research, statistical work and media-related activities, and will support national action through a global programme of technical assistance. Human suffering and the cost to society, as well as the potential benefits of protection, such as enhanced productivity, quality and cost savings, will be better documented and publicized. The programme will promote, as a policy and operational tool, the primacy of prevention as an efficient and cost-effective way of providing health and safety protection to all workers.

Strategy

SafeWork will do first things first. It will focus on hazardous work and give primary attention to workers in especially hazardous occupations in sectors where the risks to life and safety are manifestly high, such as agriculture, mining and construction, workers in the informal sector, and those occupationally exposed to abuse and exploitation, such as women, children and migrants.

SafeWork will adopt an integrated approach, including non-traditional aspects of workers' health and safety such as drugs and alcohol, stress and HIV/AIDS. The programme will also make extensive use of gender analysis and planning. There will be strong links within the social protection sector and links with other sectors, InFocus programmes and the field. A key component of SafeWork is its global technical cooperation programme. Partnerships with donors will be strengthened to mobilize additional external resources.

Specific strategies are elaborated below for each of the four goals, and include advocacy, building of the knowledge base, capacity building for constituents and support for direct action programmes.

- Showing that protection pays. The prevention of accidents, improvement of working conditions and enforcement of standards are often seen as a cost to business. Little is known about the costs of not preventing accidents or poor working conditions, or about the benefits of improvements for productivity and competitiveness. Better information and analytical tools can help increase firms' and governments' willingness to invest in prevention. This strategy will have two main thrusts: extending the knowledge base through a major drive for comprehensive, reliable and sustainable data, and new research on the economics of labour protection. The programme will foster the development of a safety culture worldwide. It will thus demonstrate that prevention policies and programmes benefit all ILO constituents.
- Protecting workers in hazardous conditions. Priority must be given to workers in the most hazardous occupations and sectors, such as mining, construction or agriculture, or where working relationships or conditions create particular risks, such as very long working hours, exposure to hazardous chemicals, work in isolation and work by migrants, etc. The ILO will make use of its extensive

Fundamental principles of occupational health and safety

experience in the development of standards, codes of practice and technical guides in exploiting the world's information resources, and in developing means of practical action. Member States will be encouraged to set objectives and targets for the protection of workers in hazardous conditions. Particular attention will be given to strengthening the advisory and enforcement capacity of labour inspectorates.

- **Extending protection.** The large majority of workers whose conditions are most in need of improvement are excluded from the scope of existing legislation and other protective measures. Existing policies and programmes need to be reviewed to extend their coverage. This will go hand in hand with action to strengthen labour inspectorates' capacity to develop broad prevention policies and programmes and to promote the protection of vulnerable workers, particularly women workers. Alliances and networks will be extended to include ministries of health, industry, local government, education and social services, as well as local community groups. Emphasis will also be placed on achieving tangible results through practical action and exchanges of information on good practices.
- **Promoting workers' health and well-being.** The strategy to promote workers' health and well-being will involve the establishment of a databank on policies, programmes and good enterprise-level practices so as to improve constituents' capacity to identify workers' protection issues and to provide guidance on new approaches. Governments' capacity for prevention, protection, and the application and enforcement of key labour protection instruments will be strengthened.

SafeWork's projected major outputs

Protecting workers in hazardous jobs

- a *World report on life and death at work*, presenting the world situation regarding risks, accidents and diseases, policies and experience, and guidance for future action
- a film on safety and health, focusing on manifestly hazardous conditions
- new standards on safety and health in agriculture established through tripartite agreement
- a review of standards on occupational safety and health to determine the action needed to update and possibly consolidate them, and to translate them into practical policy and programmatic tools such as codes of practice and guidelines
- tools and guidance for member States to facilitate the ratification and implementation of ILO standards
- harmonized chemical labelling systems, safety data sheets and hazard communication methods

- guidelines for radiation protection and the classification of radiographs of pneumoconiosis
- a rapid response capacity, especially on chemical health and safety issues, including readily accessible networks and timely information

Extending protection to all workers

- training programmes and tools for owners of small and medium sized enterprises (SMEs) to promote labour protection and improve productivity
- strengthening the effectiveness, efficiency and coverage of labour inspection systems
- guidelines for the extension of labour protection to informal sector workers
- partnerships with community organizations and others to develop and implement approaches for reaching out to hard-to-reach groups of workers

Promoting workers' health and well-being

- a data bank on policies, programmes and good enterprise-level practices
- training methodologies and diagnostic tools
- guidelines on occupational health care for all
- programmes to prevent and deal with the effects of workplace problems, including drugs, alcohol and stress

Showing that protection pays

- a statistical programme to develop new survey tools and carry out national surveys
- better national and global estimates of occupational fatalities and injuries
- report on the economics of accidents and preventive measures
- tools for inspection services to promote the benefits of prevention
- guides on occupational health and safety management systems and safety culture
- tools to reduce work-related environmental damage

Promoting national and industry-based action

- a global technical cooperation programme on safety, health and the environment
- national and industry-level programmes of action to tackle priority issues

Note

¹ Adapted from the SafeWork website, <http://www.ilo.org/safework>.

SELECTED SOURCES OF RELIABLE OSH INFORMATION

ANNEX X

The institutions and organizations listed below have been selected on the basis of the high quality, currency, accessibility and reliability of the information they provide. They have also been selected because they provide access to a large number of institutions and bodies specialized in various aspects of OSH. Many of these bodies provide some of their information in several languages, making it more widely accessible, particularly to enterprises and workers in countries without sophisticated national OSH information development and dissemination systems.

General international OSH

ILO – Occupational Safety, Health and the Environment (SafeWork)

Access point to all the ILO activities, information and standards on OSH:
<http://www.ilo.org/safework>

ILO – International Occupational Safety and Health Information Centre (CIS)

Access point to free and reliable online databases on many aspects of OSH and to a network of over 100 national OSH information centres (LEGOSH, CISDOC, IPCS ICSCs, database of Occupational Exposure Limits, online Encyclopaedia of Occupational Health and Safety, etc.): <http://www.ilo.org/cis>

World Health Organization (WHO)

Access point to information on many aspects of occupational health, OSH and chemical safety: <http://www.who.int>

European Agency for Safety and Health at Work

Portal to all the OSH information and legislation developed by the European Commission and the Member States of the European Union: <http://osha.europa.eu/>

International Occupational Hygiene Association (IOHA)

Portal to the information on and activities of over 25 national associations of professional OSH specialists: <http://www.ioha.com>

General national OSH

Finnish Institute for Occupational Health (FIOH)

ILO CIS national centre. Research and specialist organization in the sector of occupational health and safety: <http://www.ttl.fi/internet/english>

Health and Safety Executive (United Kingdom)

Reliable information on all aspects of OSH: <http://www.hse.gov.uk>

Canadian Centre for Occupational Health and Safety (CCOHS)

ILO CIS national centre. Access to reliable information and databases on all aspects of OSH: <http://www.ccohs.ca>

US Occupational Safety and Health Administration (US-OSHA)

Practical and reliable information on all aspects of OSH: <http://www.osha.gov>

US National Institute for Occupational Safety and Health (NIOSH)

ILO CIS national centre. Information on research in all areas of OSH. One of the many access points to the IPCS ICSCs: <http://www.cdc.gov/niosh>

OSH standards and legislation

ILO – International Labour Standards

Access to full texts of ILO Conventions and Recommendations and related databases: <http://www.ilo.org/public/english/standards/norm/index.htm>

ILO – CIS Database of Legislative Texts on OSH

Free access to legislative texts and references of over 140 countries and international organizations: <http://www.ilo.org/public/english/protection/safework/cis/products/legosh.htm>

HIV/AIDS

ILO Programme on HIV/AIDS and the World of Work (ILO/AIDS)

<http://www.ilo.org/aids>

World Health Organization

Information, fact sheets and activities related to the public health and health services aspects of HIV/AIDS: http://www.who.int/topics/hiv_infections/en/

Joint United Nations Programme on HIV/AIDS (UNAIDS)

Portal to information and activities of the UN and other co-sponsor intergovernmental organizations: <http://www.unaids.org>

Chemicals

United Nations Committee of Experts on the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS) and the Transport of Dangerous Goods (TDG)

Main access point to the GHS and Recommendations on TDG activities and documents: <http://www.unece.org/trans/danger/danger.htm>

Inter-Organization Programme for the Sound Management of Chemicals (IOMC)

Information on the chemical safety and related activities of the seven intergovernmental organizations participating in the coordination programme (UNEP, ILO, FAO, WHO, UNIDO, UNITAR, OECD): <http://www.who.int/iomc/>

Organization for Economic Cooperation and Development (OECD)

Information on chemical hazard and risk assessments and management, testing methodology and other international activities of the Chemical Safety Department of the OECD: <http://www.oecd.org/ehs>

United Nations Environment Programme (UNEP), Chemicals

Access to UNEP environmental protection activities, information and environmental protection standards: <http://www.chem.unep.ch/>

United Nations Institute for Training and Research (UNITAR)

Access to methodology, training information and databases related to chemical safety: <http://www.unitar.org/cwm/>

International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM)

Access point to trade union activities and information on chemical safety: <http://www.icem.org/>

International Council of Chemical Associations

Access point to the chemical industries chemical safety activities and information <http://www.icca-chem.org/>

International Programme on Chemical Safety (IPCS)

Access to internationally peer reviewed information on hazardous substances: <http://www.who.int/ipcs>

American Conference of Governmental Industrial Hygienists

Production of occupational exposure limits (threshold limit values, TLVs) for various occupational hazards: <http://www.acgih.org/>

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