

# **OCCUPATIONAL HEALTH AND SAFETY**

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Human Resource Management and Industrial Relations

Unit II

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## **Introduction:**

About 45 percent of the world's population and 58 percent of the population over 10 years of age are part of the global workforce.

The work performed by them contributes to the economic and material prosperity of the society.

Their working capacity has direct impact on the quality and quantity of the work.

That is why occupational health and safety of working population are fundamental prerequisites for improving worker and organizational productivity, and are highly important for overall socio-economic and sustainable development.

The workplace is a hazardous environment.

Occupational health and safety hazards are common in many economic sectors and affect large number of workers.

Approximately 30-50 percent of workers report hazardous physical, chemical or biological exposures or overload of unreasonably heavy physical work or ergonomic factors that may be hazardous to health and to working capacity; an equal number of working people report psychological overload at work resulting in stress symptoms.

Many individuals spend one-third of their adult life in such hazardous work environments.

About 120 million occupational accidents with 200,000 fatalities are estimated to occur annually and some 68-157 million new cases of occupational disease may be caused by various exposures at work.

In addition to unnecessary human suffering, the costs involved in these health hazards have been estimated to amount up to several percent of some countries' gross national product (GNP).<sup>1</sup>

According to the International Labour Organization (ILO), some two million people die every year from work-related accidents and diseases.

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<sup>1</sup> World Health Organization, Geneva, Occupational Health, Global Strategy on Occupational Health for All: the Way to Health at Work, Executive Summary,  
[http://www.who.int/occupational\\_health/publications/globstrategy/en/index1.html](http://www.who.int/occupational_health/publications/globstrategy/en/index1.html)

An estimated 160 million people suffer from work-related diseases, and there are an estimated 270 million fatal and non-fatal work-related accidents per year.

The suffering caused by such accidents and illnesses to workers and their families is incalculable.

In economic terms, the ILO has estimated that 4 percent of the world's annual gross domestic product (GDP) is lost as a consequence of occupational diseases and accidents.

Employers face costly early retirements, loss of skilled staff, absenteeism, and high insurance premiums due to work-related accidents and diseases.<sup>2</sup>

Only 15 percent of workers have access to occupational health services, and millions of workers worldwide are

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<sup>2</sup> International Labour Organization, Geneva, Occupational Safety and Health, <http://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/lang--en/index.htm>

impoverished every year due to catastrophic health expenditures from illness or injuries related to their jobs.<sup>3</sup>

Fast changes in working life are affecting both the health of workers and the health of the environment in all the countries of the world.

Workers face numerous workplace hazards. Several common workplace hazards are:

- *Mechanical hazards:* mechanical hazards by type of agent are impact force, collisions, falls from heights, struck by objects, confined space, slips and trips, falling on a pointed agent, compressed air / high pressure fluids, entanglement, and equipment-related injury; and hazards by type of damage are crushing, cutting, friction and abrasion, shearing, and stabbing and puncture.

- *Physical hazards:* Physical hazards include noise, vibration, lighting, barotraumas (hypobaric / hyperbaric

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<sup>3</sup> World Health Organization, Geneva, Occupational Health, World Safe Day, 28 April 2012, [http://www.who.int/occupational\\_health/world\\_safe\\_day/en/index.html](http://www.who.int/occupational_health/world_safe_day/en/index.html)

pressure), ionizing radiation, electricity, asphyxiation, cold stress (hypothermia), heat stress (hyperthermia), and dehydration (due to sweating).

- *Biological hazards:* Biological hazards include bacteria, virus, fungi, mold, blood-borne pathogens, and tuberculosis.

- *Chemical hazards:* Chemical hazards include acids, bases, heavy metals, lead, solvents, petroleum, particulates, asbestos and other fine dust / fibrous materials, silica, fumes (noxious gases / vapours), highly-reactive chemicals, fire, conflagration and explosion hazards (explosion, deflagration, detonation).

- *Psychological issues:* Psychological issues include work-related stress, violence from outside the organization, bullying which may include emotional and verbal abuse, sexual harassment, mobbing, burnout, and exposure to unhealthy elements during meetings with

business associates, example, tobacco, uncontrolled alcohol.

- *Musculoskeletal disorders.*<sup>4</sup>

## **Meaning, Objectives, Scope of and Need for Occupational Health and Safety:**

Occupational health and safety is a multi-disciplinary and an inter-sectoral area which is concerned with protecting health, safety and ensuring the welfare of persons engaged in work or employment.

The primary contributors to occupational health and safety are occupational health and safety professionals, appropriate governmental authorities, employers, employees / workers, and representatives of employers and employees.

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<sup>4</sup> Wikipedia, the free encyclopedia, Occupational Safety and Health, [http://en.wikipedia.org/wiki/Occupational\\_safety\\_and\\_health](http://en.wikipedia.org/wiki/Occupational_safety_and_health)

Since 1980s a great deal of progress has taken place for building a comprehensive approach in occupational health and safety.

At the international level International Labour Organization (ILO) and World Health Organization (WHO), the two specialized agencies of the United Nations, are immensely contributing to occupational health and safety.

The main focus of ILO activity has been on the provision of international guidelines and a legal framework for the development of occupational health policies and infrastructures on a tripartite basis (including governments, employers and workers) and the practical support for improvement actions at the workplace, while the WHO has concentrated on the provision of scientific backgrounds, methodologies, technical support and on the training of health and related manpower for occupational



health (Joint ILO / WHO Committee on Occupational Health, 1992).<sup>5</sup>

For the WHO, *occupational health* includes safety at work. Hygiene is conceptualized as directed towards disease prevention while safety is thought of as the discipline that prevents bodily injuries due to accidents.

For the ILO, *occupational safety and health* is considered as a discipline aiming at the prevention of work injuries (both occupational diseases and accidents) and at the improvement of working conditions and the environment.

The terms *occupational safety*, *occupational health*, *occupational medicine*, *occupational hygiene* and *occupational health nursing* are used to acknowledge the contribution of different professions (example, engineers,

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<sup>5</sup> Georges H. Coppee, Occupational Health Services and Practice,  
[http://www.ilo.org/safework\\_bookshelf/english?content&nd=857170174](http://www.ilo.org/safework_bookshelf/english?content&nd=857170174)

physicians, nurses, hygienists) and in recognition of the fact that the organization of occupational safety and health at the enterprise level very often comprises separate occupational safety services and occupational health services, as well as safety and health committees.<sup>6</sup>

Since 1950, the *International Labour Organization* and the *World Health Organization* have shared a common definition of occupational health.

It was adopted by the *Joint ILO / WHO Committee on Occupational Health* at its first session in 1950 and revised at its twelfth session in 1995. The definition reads:

"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

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<sup>6</sup> Georges H. Coppee, *Occupational Health Services and Practice*,  
[http://www.ilo.org/safework\\_bookshelf/english?content&nd=857170174](http://www.ilo.org/safework_bookshelf/english?content&nd=857170174)

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. The main focus in occupational health is on three different objectives: (i) the maintenance and promotion of workers' health and working capacity; (ii) the improvement of working environment and work to become conducive to safety and health and (iii) development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings. The concept of working culture is intended in this context to mean a reflection of the essential 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."<sup>7</sup>

The *key objectives* of occupational health and safety programmes are to promote a safe and healthy work environment and working conditions; protect workers, fellow workers, employers, family members, customers, suppliers, nearby communities, and general public from affects of workplace environment; protect and promote workers' health; reduce the burden imposed by medical care and costs incurred in providing disability benefits; maintain and improve working capacity and productivity of workers and organization; reduce the rate of sickness, absenteeism, work disability and losses caused by them; and promote socio-economic development, productivity,

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<sup>7</sup> Wikipedia, the free encyclopedia, Occupational Safety and Health, [http://en.wikipedia.org/wiki/Occupational\\_safety\\_and\\_health](http://en.wikipedia.org/wiki/Occupational_safety_and_health)

environmental health and well-being of countries, communities, families and dependents.

In 1992, the Joint ILO / WHO Committee emphasized that the *scope* of occupational health is *very broad* encompassing disciplines such as occupational medicine, occupational nursing, occupational hygiene, occupational safety, ergonomics, engineering, toxicology, environmental hygiene, occupational psychology and personnel management. Collaboration and participation of employers and workers in occupational health programmes is an essential prerequisite for successful occupational health practice.<sup>8</sup>

The reasons for protection and promotion of occupational health and safety can, broadly, be classified into moral, legal and economic.

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<sup>8</sup> Georges H. Coppee, Occupational Health Services and Practice, [http://www.ilo.org/safework\\_bookshelf/english?content&nd=857170174](http://www.ilo.org/safework_bookshelf/english?content&nd=857170174)

Some of the specific reasons are: duty of management to provide reasonable care to the employees as their health and safety cannot be put to risk; laws providing for enforcement of occupational health and safety provisions, and punitive measures for their non-compliance; and prevention of direct and indirect costs associated with unhealthy workplace environment and practices, and their impact on the organization.

According to WHO, in some regions and countries, only 5-10 percent of workers in developing countries and 20-50 percent of workers in industrialized countries (with a very few exceptions) have access to occupational health

services in spite of an evident need virtually at each place of work.

Rapid change of the modern working life is associated with increasing demands of learning new skills, need to adapt to new types of work, pressure of higher productivity and quality of work, time pressure and hectic jobs and with growing psychological workload and stress among the workforce.

Such developments require higher priority to be given for psychological quality of work and the work environment, and more attention to psychosocial aspects of work.

Health at work and healthy work environments are among the most valuable assets of individuals, communities and countries.

Occupational health is an important strategy not only to ensure the health of workers, but also to contribute positively to productivity, quality of products, work motivation, job satisfaction and thereby to the overall quality of life of individuals and society.<sup>9</sup>

### **Role of International Labour Organization:**

The *Preamble* of the ILO Constitution states:

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<sup>9</sup> World Health Organization, Geneva, Occupational Health, Global Strategy on Occupational Health for All: the Way to Health at Work, Executive Summary, [http://www.who.int/occupational\\_health/publications/globstrategy/en/index1.html](http://www.who.int/occupational_health/publications/globstrategy/en/index1.html)



“Whereas universal and lasting peace can be established only if it is based upon social justice; 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 imperiled; 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 regulation of the labour supply, the prevention of unemployment, the provision of an adequate living wage, the protection of the worker against sickness, disease and injury arising out of his employment, the protection of children, young persons and women, provision for old age

and injury, protection of the interests of workers when employed in countries other than their own, recognition of the principle of equal remuneration for work of equal value, recognition of the principle of freedom of association, the organization of vocational and technical education and other measures.”<sup>10</sup>

The Constitution, thus, mandates the ILO to protect the workers from sickness, disease and injury arising from their employment.

The ILO has adopted more than 40 standards which explicitly deal with occupational health and safety, and more than 40 codes of practice.

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<sup>10</sup> International Labour Organization, Geneva, Constitution, <http://www.ilo.org/ilolex/english/constq.htm>

About half of ILO instruments are directly or indirectly concerned with issues relating to occupational health and safety.

The Governing Body of ILO at its 307<sup>th</sup> session in March 2010 adopted a *Plan of action (2010-2016) to achieve widespread ratification and effective implementation of the occupational safety and health instruments (Convention No. 155, its 2002 Protocol and Convention No. 187)*.

The Plan of Action outlines strategies focused on mapping the current situation at the national level and the readiness to take action; promoting and supporting the development of a preventive safety and health culture; overcoming shortcomings in the implementation of ratified Conventions; and improving occupational safety

and health conditions in small and medium-sized enterprises and the informal economy.<sup>11</sup>

ILO has developed *Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001)* to serve as a practical tool for assisting organizations and competent institutions for achieving continuous improvement in occupational safety and health performance.

ILO is implementing a *Programme on Safety and Health at Work and the Environment (SafeWork)*. The SafeWork programme has four major goals:

- Preventive policies and programmes are developed to protect workers in hazardous occupations and sectors;

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<sup>11</sup> International Labour Organization, Geneva, Plan of action (2010-2016) to achieve widespread ratification and effective implementation of the occupational safety and health instruments (Convention No. 155, its 2002 Protocol and Convention No. 187, [http://www.ilo.org/global/standards/WCMS\\_125616/lang--en/index.htm](http://www.ilo.org/global/standards/WCMS_125616/lang--en/index.htm))

- Effective protection is extended to vulnerable groups of workers falling outside the scope of traditional protective measures;
- Governments and employers' and workers' organizations are better equipped to address problems of workers' well-being, occupational health promotion and the quality of working life; and
- The social and economic impact of improving workers' protection is documented and recognized by policy and decision makers.

Based on the principle that decent work must be safe work, SafeWork aims to create worldwide awareness of the dimensions and consequences of work-related accidents and diseases; to place occupational safety and health (OSH) on the international and national agendas; and to provide support to the national efforts for the

improvement of national OSH systems and programmes in line with relevant international labour standards.

Areas of work of SafeWork include national occupational safety and health systems and programmes; occupational safety and health management systems; occupational safety and health information and knowledge sharing; occupational health; chemical safety and the environment; hazardous work; radiation protection; workplace health promotion and well-being; occupational safety and health inspection; economic aspects of occupational safety and health; and gender and occupational safety and health.<sup>12</sup>

### **Role of World Health Organization:**

According to WHO, occupational health is considered to be a multidisciplinary activity aiming at:

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<sup>12</sup> International Labour Organization, Geneva, Programme on Safety and Health at Work and the Environment (SafeWork), <http://www.ilo.org/safework/lang--en/index.htm>

- protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work;
- development and promotion of healthy and safe work, work environments and work organizations;
- enhancement of physical, mental and social well-being of workers and support for the development and maintenance of their working capacity, as well as professional and social development at work; and
- enablement of workers to conduct socially and economically productive lives and to contribute positively to sustainable development.

Thus occupational health has gradually developed from a mono-disciplinary risk-oriented activity to a multidisciplinary and comprehensive approach that

considers individual's physical, mental and social well-being, general health and personal development.<sup>13</sup>

The key strategy principles of international and national occupational health and safety policies are:

- avoidance of hazards (primary prevention);
- safe technology;
- optimization of working conditions;
- integration of production and health and safety activities;
- government's responsibility, authority and competence in the development and control of working conditions;
- primary responsibility of the employer and entrepreneur for health and safety at the workplace;
- recognition of employees' own interest in occupational health and safety;

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<sup>13</sup> World Health Organization, Geneva, Occupational Health, Global Strategy on Occupational Health for All: the Way to Health at Work, a Proposed Global Strategy on Occupational Health for All, Basis for the Strategy, [http://www.who.int/occupational\\_health/publications/globstrategy/en/index5.html](http://www.who.int/occupational_health/publications/globstrategy/en/index5.html)



- cooperation and collaboration on an equal basis by employers and workers;
- right to participate in decisions concerning one's own work;
- right to know and principle of transparency; and
- continuous follow-up and development of occupational health and safety.

Implementation of such principles requires appropriate legal provisions, administrative enforcement and service systems for occupational safety and health and occupational health services. For occupational health services, the following functional principles are recognized: prevention and promotion; adaptation and adjustment of working conditions to the worker; rehabilitation; curative services and acute response (first aid and emergency response). By implementing such principles occupational health serves as a catalyst for change at the workplace towards the development of

better management of production and better control of hazards at work.<sup>14</sup>

The Constitution of WHO specifies the fundamental right of all people to highest attainable standard of health. The Constitution pronounces:

“The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States”.<sup>15</sup>

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<sup>14</sup> World Health Organization, Geneva, Occupational Health, Global Strategy on Occupational Health for All: the Way to Health at Work, a Proposed Global Strategy on Occupational Health for All, Basis for the Strategy, [http://www.who.int/occupational\\_health/publications/globstrategy/en/index5.html](http://www.who.int/occupational_health/publications/globstrategy/en/index5.html)

<sup>15</sup> World Health Organization, Geneva, Constitution, <http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf>

Prevention of accidental injuries and the promotion of improvement of working conditions have been spelt out as the functions of WHO in Article 2 of Chapter II of the Constitution.<sup>i</sup>

Since 1950 WHO had a special programme for occupational health. The *Alma Ata Declaration on Primary Health Care* stressed the need to organize both preventive and curative primary health care services as close as possible to where people live and work; and to give high priority to the people most in need, including the working populations at high risk, in the organization of such services.

The *World Health Assembly* adopted *Resolution WHA32.14* on the *Comprehensive Workers' Health Programme*. *Resolution WHA33.31*, adopted in 1980, urged countries to integrate occupational health and primary health care services in order to cover underserved populations, especially in developing countries; and laid

stress on the need for more development of occupational health services, training and research.

Several WHO programmes have relevance for occupational health. These are *Programme on Chemical Safety*, *Programme for Promotion of Environmental Health*, and programmes on communicable and non-communicable diseases and human resources development.

The *WHO VIII General Programme of Work* for the years 1990-95 emphasized the need for extending primary health care to the underserved working populations, and providing guiding principles for supporting legislation for primary health care action in the workplace.

This programme set the target that at least 70 percent of the countries should develop occupational health programmes.

The *Agenda 21* of the *United Nations Conference on Environment and Development*; and the recommendations of the *WHO Commission on Health and Environment*, and the *European Charter on Environment and Health* have several items which are directly or indirectly concerned with occupational health.

The *WHO Health for All principles* and *ILO Conventions on Occupational Safety and Health (No. 155)* and *on Occupational Health Services (No. 161)* provide that every worker has the right of access to occupational health and safety services, irrespective of the sector of the economy, size of the company, or type of assignment and occupation.

The second meeting of the WHO Collaborating Centres in Occupational Health, held in Beijing, People's Republic of China, in October 1994, adopted a proposal for a WHO Global Strategy for 'Occupational Health for All.'

WHO's *Global Strategy on Occupational Health for all: the Way to Health at Work* was endorsed by the World Health Assembly in 1996. The 10 priority objectives proposed by the strategy are as follows:

- Strengthening of international and national policies for health at work and developing the necessary policy tools;
- Development of healthy work environment;
- Development of healthy work practices and promotion of health at work;
- Strengthening of occupational health services;
- Establishment of support services for occupational health;
- Development of occupational health standards based on scientific risk assessment;
- Development of human resources for occupational health;

- Establishment of registration and data systems, development of information services for experts, effective transmission of data and raising of public awareness through public information;
- Strengthening of research; and
- Development of collaboration in occupational health and with other activities and services.

Each objective has two different targets in view of the international and national actions that are needed to meet the strategy objectives.

The objectives emphasize the importance of primary prevention and encourage countries, with guidance and support from WHO, to establish national policies and programmes with the required infrastructures and

resources for occupational health. In this development of national systems the role of government is central.<sup>16</sup>

The Seventh Meeting of the WHO Collaborating Centres for Occupational Health, held at Stresa, Italy, in June 2006, approved *Declaration on Workers Health*. The meeting discussed follow up of the Global Strategy for Occupational Health and noted with satisfaction the progress made in implementing it.

The World Health Assembly endorsed the *WHO Global Plan of Action on Workers' Health (GPA) (2008-2017)* in 2007. This plan is a follow up of the WHO Global Strategy on Occupational Health for All.

Three priority activities are being undertaken by WHO in the area of occupational health. These are:

### ***1. Healthy workplaces:***

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<sup>16</sup> World Health Organization, Geneva, Occupational Health, Global Strategy on Occupational Health for All: the Way to Health at Work, Executive Summary,  
[http://www.who.int/occupational\\_health/publications/globstrategy/en/index1.html](http://www.who.int/occupational_health/publications/globstrategy/en/index1.html)



Healthy workplaces are to be ensured by considering health and safety concerns in the physical work environment; health, safety and well-being concerns in the psycho-social work environment including organization of work and workplace culture; personal health resources in the workplace; and ways of participating in the community to improve the health of workers, their families and other members of the community.

In 2009, WHO developed a *healthy workplaces model* which is a comprehensive way of thinking and acting that addresses work-related physical and psycho-social risks; promotion and support of healthy behaviours; and broader social and environmental determinants.

## ***2. Needle stick injuries:***

Since 2003, WHO is implementing a special project “*Health Care Workers / Prevention of Needle Sticks*” to reduce the exposure to HIV / AIDS and others sharps-related infections (Hepatitis B and C) in health care workers associated with injections.

### ***3. Practical solutions:***

WHO is supporting the countries to implement practical solutions in order to tackle most serious and prevalent occupational hazards. WHO has developed the concept of toolkits for health and safety management. Toolkits are frameworks for addressing key health and safety issues. Each toolkit has a particular focus.<sup>17</sup>

WHO and ILO celebrate the *World Day for Safety and Health at Work* every year on the 28 April to promote the

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<sup>17</sup> World Health Organization, Geneva, Occupational Health, Activities, [http://www.who.int/occupational\\_health/activities/en/](http://www.who.int/occupational_health/activities/en/)

prevention of occupational accidents and diseases globally.

It is an awareness-raising campaign which focuses international attention on rising trends in the field of occupational safety and health; and on the extent of work-related injuries, diseases and fatalities worldwide.

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<sup>i</sup> Article 2 of the Chapter II of Constitution of the World Health Organization describes the functions of the WHO. Its functions, among others, are to promote, in cooperation with other specialized agencies where necessary, the prevention of accidental injuries; and to promote, in co-operation with other specialized agencies where necessary, the improvement of nutrition, housing, sanitation, recreation, economic or working conditions and other aspects of environmental hygiene.