

TOPIC 1.7 "SAFETY  
OF MEDICAL WORK"

# Principles of occupational health and safety

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# Outline

1. Main statements and definitions of OSH
2. Core OSH principles
3. The role of workers and employers in OSH
4. OSH in medical field

# 1. Main statements and definitions of OHS

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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.

# 1. Main statements and definitions of OHS

**Safety precautions** - preventive and protective measures to be instituted at workplaces in order to guarantee the safety and health of workers.

**Labour hygiene** – the practice of principles that maintain health for workers at the workplace. It is a health program studying related labor and labor conditions with the purpose to create the physiological requirement of human labor conditions so that workers are in the best state in the aspects of physical, psychological and social welfare. Labor hygiene belongs to preventive medicine, it studies occupational diseases and labor protection that has had a close contact.

**Electrical safety** – is a system of organizational measures and technical means to prevent harmful and dangerous effects on workers from electric current, electric arc, electromagnetic field and static electricity.

**Fire safety** – is the set of practices intended to prevent or reduce the destruction caused by fire.

# 1. Main statements and definitions of OHS

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

- fatal occupational injury
- non-fatal occupational injury

**Occupational injury** – is a death, any personal injury or disease resulting from an occupational accident.

**Occupational disease** – is a disease contracted as a result of an exposure to risk factors arising from work activity

**Risk** – the likelihood of an undesired event with specified consequences occurring within a specified period or in specified circumstances.

## 2. Core OSH principles

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Occupational safety and health is an extensive multidisciplinary field, 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.

Certain basic principles can be identified, including the following:

- 1) All workers have rights. Work should take place in a safe and healthy working environment.
- 2) 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
- 3) Health promotion is a central element of occupational health practice. Efforts must be made to enhance workers' physical, mental and social well-being.
- 4) 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.

# Workers' rights and duties

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It is increasingly recognized that the protection of life and health at work is a fundamental workers' right ; in other words, decent work implies safe work.

Furthermore, workers have a duty to take care of their own safety.

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 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.

**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.

# Occupational safety for medical workers

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Healthcare workers are exposed to a complex variety of health and safety hazards everyday, including:

- Biological hazards, such as TB, hepatitis, HIV
- Chemical hazards
- Physical hazards, such as noise, radiation, slips trips, falls
- Psychosocial hazards such as shiftwork, violence and stress
- Electrical hazards such as frayed electrical cords

# 3. The role of workers and employers in OSH

## The role of employers:

Under the law, employers are responsible for health and safety management. This means making sure that workers are protected from anything that may cause harm by effectively controlling any risks to health that could arise in the workplace.

Employers have duties under health and safety law to assess risks in the workplace.

Employers must give workers information about the risks in their workplace and how they are protected, and also instruct and train them on how to deal with the risks. Employers must consult workers on health and safety issues.

Employers need to promote a culture in which health and safety is integrated into everyone's roles



# The role of workers

The law also requires workers to play their part and help their employers to protect them by:

- taking care of their own and other people's safety and health;
- cooperating with their employer on safety and health;
- following the training they have received for doing their job safely, and for using equipment, tools, substances etc;
- being involved in trials, e.g. selection trials for personal protective equipment.





## 4. OSH in medical field

# Types of safety hazards of medical workers

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Physical exertion (back injuries, wet-floor hazards and etc.)

Fires and natural disasters

Compressed gases. Compressed gases used in hospitals include acetylene, anesthetic gases and they are flammable.

Flammable and combustible liquids, vapors and gases.

Electrical equipment: electrical malfunction, unsafe equipment

Assault

Stress, shift work

Infectious agents

# Specific safety hazards by hospital department

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1. Sterilization equipment – improper use of sterilization equipment can result in burns from steam and exposure to ethylene oxide. Detailed operating instructions should be posted in or near the sterilization units. Autoclaves should be inspected periodically
2. Sharp objects
3. Soaps and detergents
4. Disinfectants are used in some hospital area and operating rooms

# Specific safety hazards by hospital department. Physical hazards

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Heat: Heat stroke, heat exhaustion, heat cramps, fainting, heat rash. Some departments of the hospital may be hot during summer months, especially in older facilities that have inadequate ventilation and cooling system

Noise: loud noise damages nerves and decreasing hearing acuity. This decrease is called temporary threshold shift.

Noise may also trigger changing in cardiovascular, endocrine, neurologic and other functions, all of which suggest a general stress reaction

# Specific safety hazards by hospital department. Physical hazards

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Ionizing radiation. Ionizing radiation is used in the hospital for diagnostic radiology (X-rays, tomography scanners), therapeutic radiology, nuclear medicine in diagnostic and therapeutic procedures.

The following measures should be taken to reduce occupational radiation exposure in hospitals:

- Properly mark any rooms housing radiation sources
- Enclose all radioactive material
- Keep X-rays room doors closed when equipment is in use
- Prevent radiation exposure of pregnant workers
- Use thyroid shield and leaded glasses for consistently elevated exposure

# Specific safety hazards by hospital department. Physical hazards

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UV Radiation. UV Radiation may be emitted by germicidal lamps. Over-exposure may result in the burning of exposed skin and serious eye effects

Lasers (light amplification by stimulated emission of radiation). They can cause damage because they focus large amounts of light energy on a small surface

# Other safety hazards

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Dermatological hazards – skin injuries in the hospital include cuts, lacerations, punctures, burns. Allergic contact dermatitis – some persons become sensitized to chemicals days, months, years after their first exposure. This allergic reaction does not occur in every worker who contacts the chemical. Symptoms are red, itchy and blistering skin

Stress. Hospital work requires coping with some of the most stressful situations.

Hazardous wastes: infectious and non-infectious wastes

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Healthcare workers have a high risk of contact with infectious agents due to the various types of activities involved with their jobs and the possibilities of contamination.

Bloodborne Pathogens (BBP): HIV/AIDS, Hepatitis B, Hepatitis C

Tuberculosis (TB)

# Protection against Occupational exposure TO Hepatitis B Virus (HBV) and human immunodeficiency Virus (HIV)

Healthcare workers (HCWs) have a risk for occupational infection following exposure to blood or bodily fluids, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV) ranking as the most important pathogens, and requiring consideration of post-exposure prophylaxis.

The Centers for Disease Control and Prevention (CDC) define “exposure” as a percutaneous injury (e.g., needlestick or cut with a sharp object) or contact of mucous membrane or nonintact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other bodily fluids that are potentially infectious.

# Thank you for your attention

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