



IN THE NAME OF GOD

Introduction to Occupational Medicine



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History of Occupational Medicine

- ◆ The Industrial Revolution led to the first recognition of diseases at the workplace.
- ◆ The term “Occupational Health & Safety” has progressed from industrial / factory medicine of the industrial revolution days

According to ILO reports

- ◆ About **45%** of the world's population and **58%** of the population over 10 years of age belong to the global workforce.
- ◆ Importance:
 - Health
 - Productivity
 - Socioeconomic issues
 - Sustainable development



Rapid change of the modern working life:

- ◆ Increasing demands of learning new skills
- ◆ Need to adapt to new types of work
- ◆ Pressure of higher productivity and quality of work
- ◆ Time pressure
- ◆ Growing psychological workload
- ◆ Stress



What is occupational medicine ?

- ◆ Occupational Medicine is a new branch of clinical medicine most active in the field of Occupational Health.
- ◆ Its principal role is the provision of health advice to organisations and individuals to ensure that the highest standards of Health and Safety at Work can be achieved and maintained

Occupational Health

◆ Work → Health

(occupational disease/work related ill health)

◆ Health → Work

(medical fitness for work)



Work



Health

**Evaluate
Workplace Exposures**

**Identify Individuals at
Risk Based on
Exposure**

**Conduct Medical
Examinations for
Early Health
Effects**

**Report Medical
Findings to
Employees**

**Determine
Employee Medical
Restrictions**

**Accommodate
Medical
Restrictions**

**Analyze
Relationship
Between Medical
Results and
Occupational
Exposure**

**Implement
Workplace
Controls**

Profession Responsible for Activity Depicted



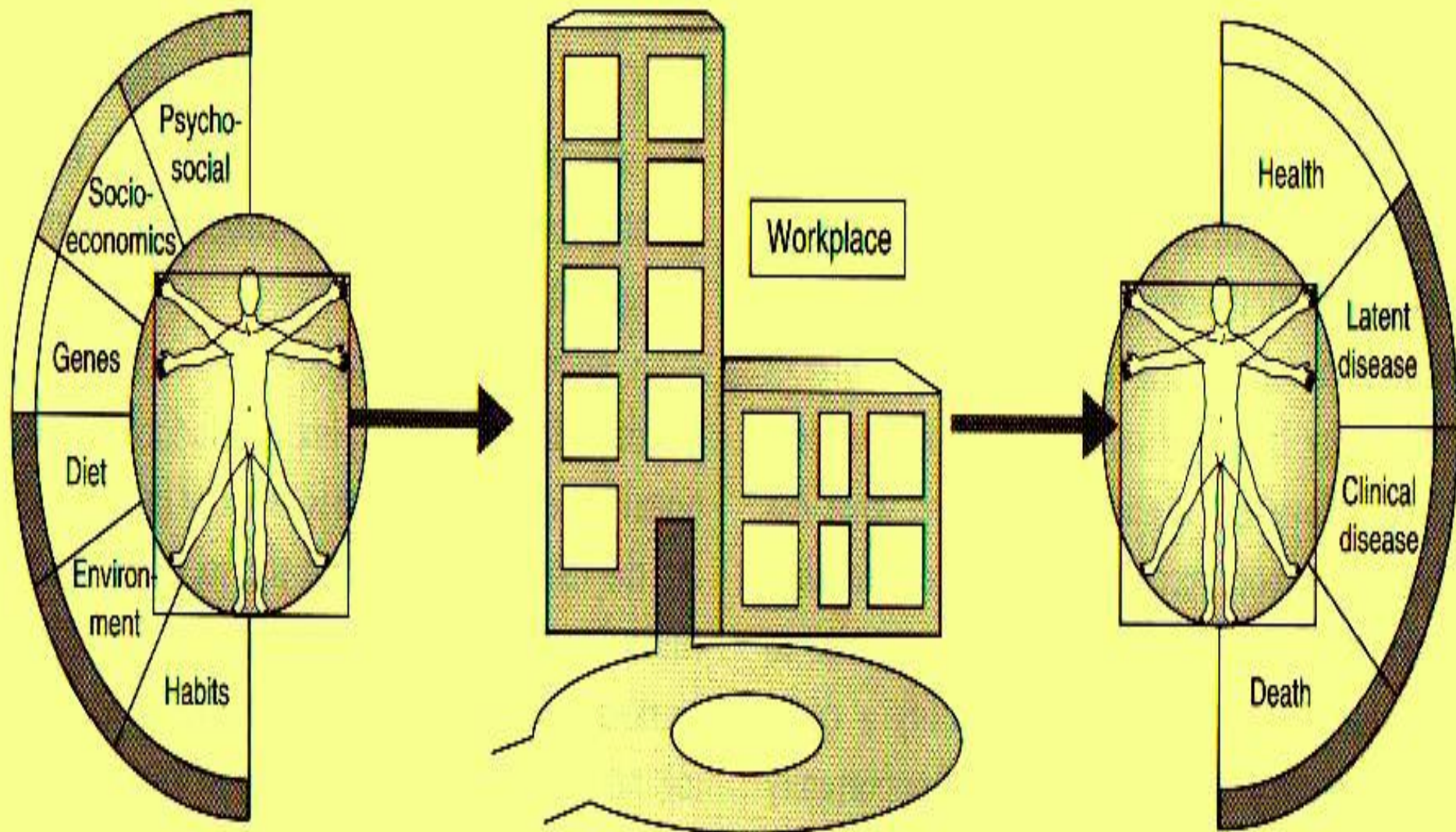
**Occupational
Hygienist**

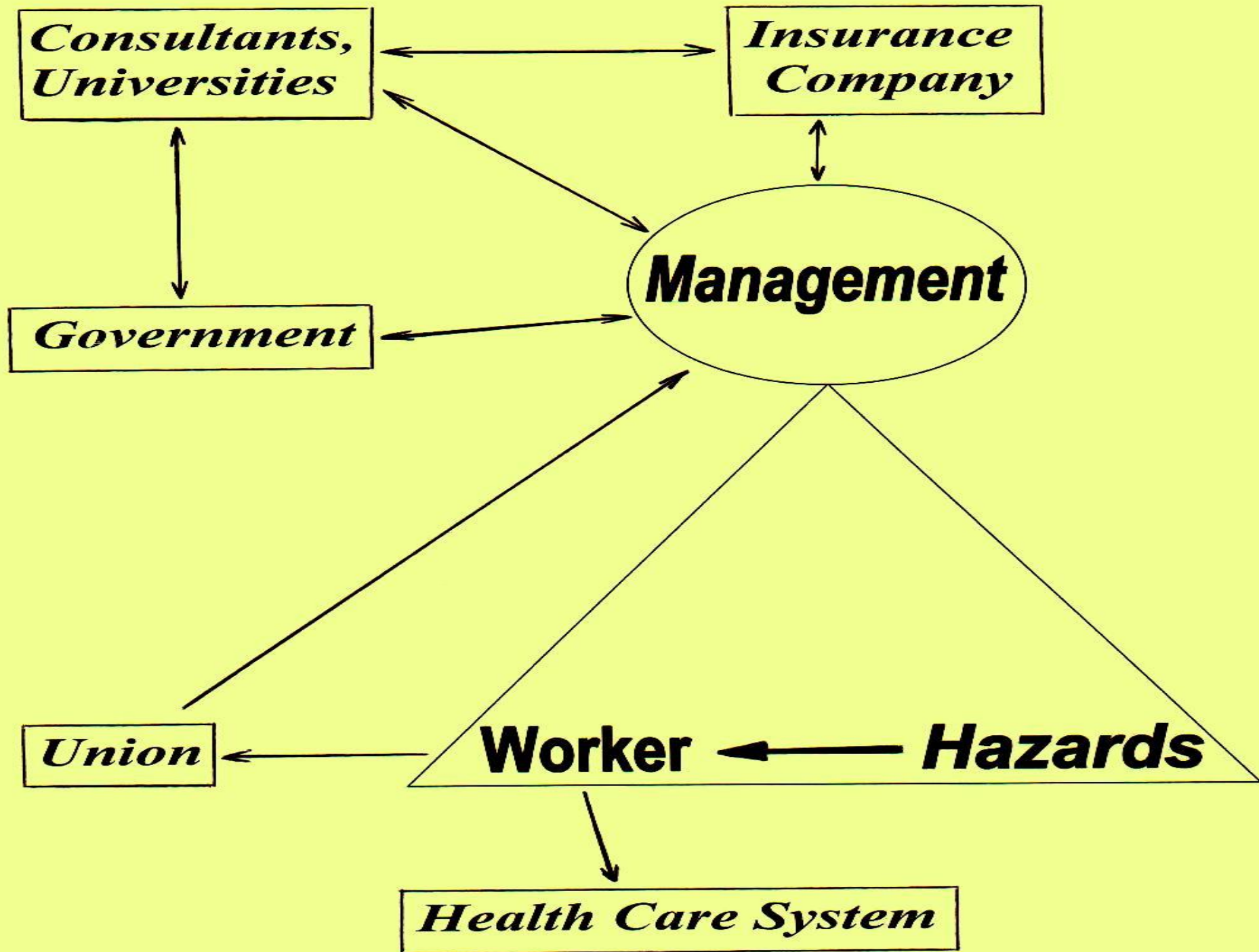


**Shared
Responsibility**



**Occupational
Physician**





The Rationale for Occupational Medicine Services

- ***Size of Working Population***
- ***Economic Consequences***
- ***Special Hazards associated with Work***

Occupational Medicine Service Program

- ***OMSs for Applicants***
- ***OMSs for Well Employees***
- ***OMSs for ill or injured Employees***



Occupational Medicine Services

- Preventive Services
- Curative Services
- Rehabilitative Services
- Consultative Services
- Research Services
- Educational & Training Services
- Other Services

ILO - WHO



- ◆ The modern definition of Occupational Health (ILO and WHO) is:

“The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations – total health of all at work”



ILO - WHO



- ◆ The prevention among 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
- ◆ Placing and maintenance of a worker in an occupational environment adapted to his physiological and psychological characteristics.
- ◆ To summarize, the adaptation of work to people and of each person to their job.

Occupational Health

- ◆ The definition of occupational health has broadened considerably and there has been a transition from the strict concept of “prevention of occupational injuries and diseases” to “overall protection and promotion of workers’ general health”.



- ◆ According to the principles of the United Nations, WHO and ILO, every citizen of the world has a **RIGHT** to healthy and safe work and to a work environment that enables him or her to live a socially and economically productive life.

ILO Reports

- ◆ Only 5 - 10% of workers in developing countries and 20 - 50% of workers in industrialized countries have access to occupational health services.
- ◆ Approximately 8 out of 10 of the worlds workers live in newly industrialized countries.



Magnitude of problem

- ◆ According to the estimates by ILO for accidents and diseases, there are globally about **2.2 million** work-related deaths annually.
- ◆ The largest share of work related fatalities is made up by fatal diseases: **1.7 - 2** million deaths annually.
- ◆ Almost half of these fatalities occur in Asian countries.
- ◆ The annual number of non-fatal work-related diseases has been estimated to be **160 million**.

Global Burden of Occupational Injury and Disease/Year

	Injuries	Diseases	Total
Fatal	100,000	700,000	800,000
Non-Fatal	99,000,000	10,300,000	109,300,000
	100,000,000	11,000,000	111,000,000

Reported

Not Reported

*Recognized
as being
Related to work*

*Medical Attention
Received , But
Relationship of illness
to work not Recognized*

*Symptoms , But
No Medical Attention Sought*

*Affected ,
But No Symptoms*

The Occupational and Environmental Medicine (OEM) Team

The OEM physician is part of a team that includes:

Industry

- ◆ Safety Professional
- ◆ Industrial Hygienist
- ◆ Worker Representative
- ◆ Management
- ◆ Ergonomist
- ◆ Environmental Engineer

Medicine

- ◆ Private Physician
- ◆ Physical Therapist
- ◆ Epidemiologist
- ◆ Clinic
- ◆ Hospital

The Team Approach

Working with management and other occupational and environmental health professionals, the OEM physician achieves:

- Enhanced health and safety in the workplace
- A match between the worker and the task
- Rapid and Appropriate medical management of illness/injury
- Appropriate return to work
- Effective communication for all
- Cost effectiveness/efficiency

Role of the OEM Physician

The occupational and environmental medicine physician assists employers in:

- ◆ Identifying hazards
- ◆ Detecting exposures
- ◆ Protecting the workforce
- ◆ Educating people regarding workplace hazards

What occupational medicine specialists do ?

- ◆ prevention, evaluation and management of populations exposed to hazardous environmental agents.
- ◆ Pre-placement, post-offer physical examinations
- ◆ Fitness for duty assessment (based on Job analysis and medical assessments of worker)
- ◆ Surveillance examinations and record keeping



Occupational Medicine
is a branch of
Preventive medicine



What is Preventive Medicine?



Preventive medicine physicians work with large population groups as well as with individual patients to promote health and understand the risks of disease, injury, disability and death.

Types of Prevention

Primary – **Target:** those with potential for exposure; no disease yet.

Goal: change exposure conditions

Secondary – **Target:** those with early stage of disease, no symptoms yet

Goal: reverse disease, delay symptom onset

Tertiary – **Target:** those with clinical disease

Goal: cure or control of disease.

Opportunities for Prevention

Primary

Prevention



Secondary

Prevention



Tertiary

Prevention



time →

Healthy
Worker

Asymptomatic
Disease

Symptomatic
Disease



Occupational illnesses

ILO classification



- ◆ Today, it is recognised that a host of diseases besiege the worker. They are classified into :-
 - a) General diseases
 - b) Work-related diseases
 - c) Occupational diseases



General Diseases

- ◆ Medical conditions prevalent in the community
eg. diabetes mellitus, certain types of anaemia,
malaria

Work-related Diseases

- ◆ Multi-factorial in origin
- ◆ Workplace factors may be associated in their occurrence but need not be a risk factor in each case

Eg. certain psychosomatic illnesses, non-specific chronic respiratory diseases and hypertension

Occupational Diseases

- ◆ Caused by exposure to specific hazards at the workplace
- ◆ Work induced diseases

Eg. Pneumoconiosis (asbestosis from asbestos exposure,...), mesothelioma

Differences between Occupational and Work-Related Diseases

<u>Work-related Diseases</u>	<u>Occupational Diseases</u>
Occurs largely in the community	Occurs mainly among working population
“Multi-factorial” in origin	Cause specific
Exposure to workplace may be a factor	Exposure to workplace is essential
May be notifiable and compensable	Notifiable and compensable

Occupational Diseases

- ◆ Work-related diseases
- ◆ Occupational diseases



Work-related diseases

Occupational diseases



Occupational Diseases


- ◆ Specific occupational hazards encountered by healthcare workers are well-documented and generally fall into 5 categories:

Classification of work hazards

- ◆ Chemical
 - liquids, fumes, mists vapours, gases, dusts
- ◆ Physical
 - radiation, noise, vibrations, temperature, humidity
- ◆ Ergonomic
 - body position, repetitive actions, work pressure
- ◆ Biological / Infectious
 - bacteria, viruses, fungi
- ◆ Psychosocial
 - shift work, stress

Routs of exposure

- ◆ Inhalation
- ◆ Absorption
- ◆ Ingestion
- ◆ Transfer across placenta
- ◆ Intravenous
- ◆ Intramuscular
- ◆ subcutaneous

- 
- ◆ To minimize the damage caused by occupational diseases, the best approach is early detection of pathological changes at a stage when they are reversible.
 - ◆ There are many clinical, laboratory or other tests that have been developed to detect these early changes, each exposure having its specific test.

Preventive measure



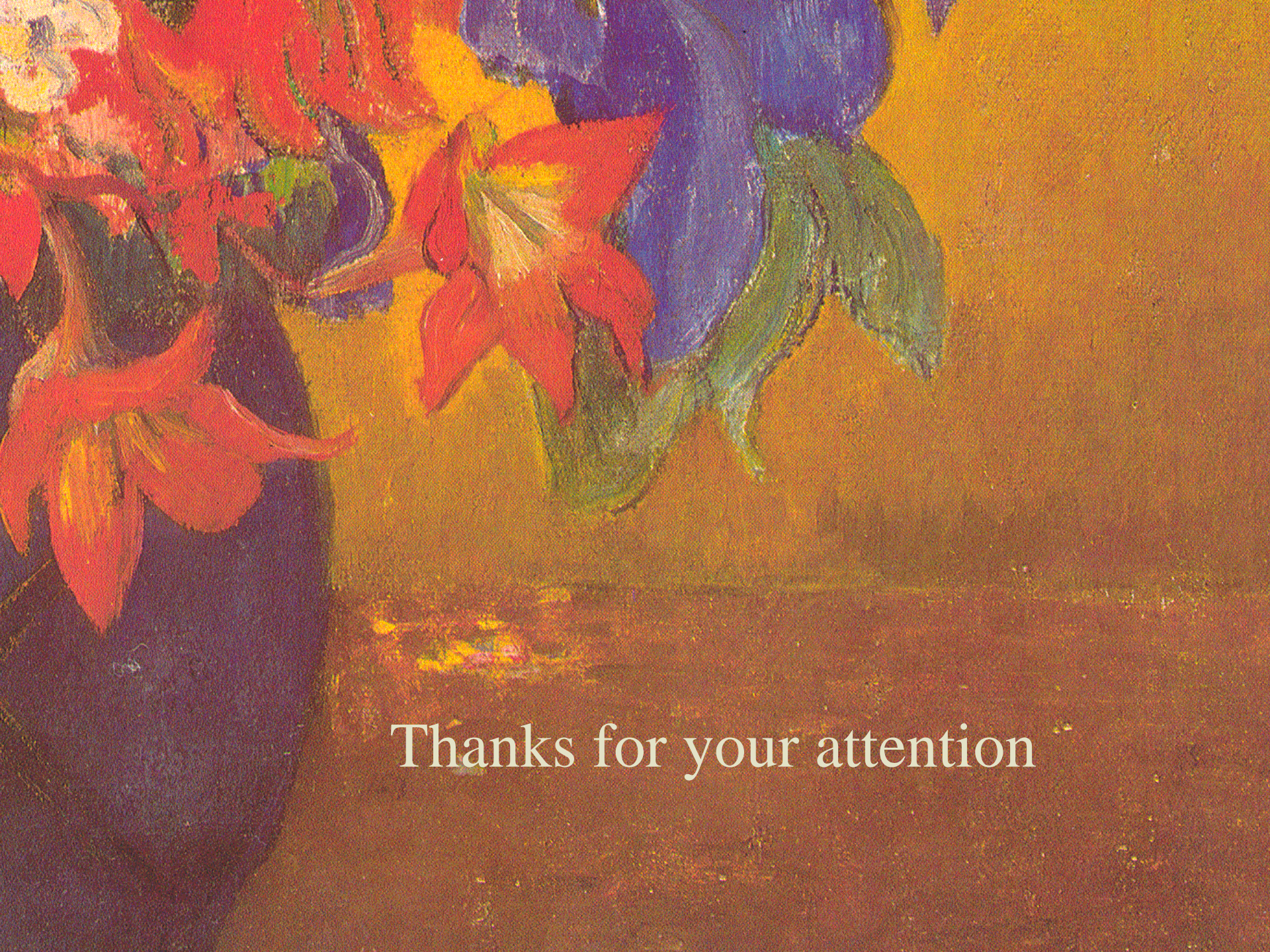
- ◆ Elimination
- ◆ Substitution
- ◆ Engineering control
- ◆ Administrating control
- ◆ Personal protective equipment
- ◆ Monitoring
- ◆ Training

ILO List of Occupational Diseases

- ◆ **Diseases caused by agents**
 - ✓ Chemical, physical, biological, Psychologic,...
- ◆ **Diseases by target organ system**
 - ✓ Respiratory, skin, musculoskeletal , ...
- ◆ **Occupational cancer**
 - ✓ Cancer caused by the workplace agents

The World Health Organization (WHO):

- ◆ 37 percent of low back pain
- ◆ 16 percent of hearing loss
- ◆ 13 percent of chronic obstructive pulmonary disease
- ◆ 11 percent of asthma
- ◆ 10 percent lung cancer
- ◆ 8 percent of injuries are related to work.



Thanks for your attention