

## Basic Occupational Health Services

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# Basic Occupational Health Services – Strategy, Structures, Activities, Resources

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## Introduction

Of the total 3 billion workers in the world over 80% work and live without having access to occupational health services (OHS). This in spite of the fact that several authoritative bodies, including the ILO, WHO and numerous professional organizations and the organisations of workers have, already for several decades, emphasized the need for services. The coverage today is diminishing rather than expanding. The ILO Convention No. 161 on Occupational Health Services and the WHO Global Strategy on Occupational Health call for the organization of services to all working people of the world. We are still far from this goal, and it is not likely that the coverage will essentially expand without concerted efforts.

Introduction of the concept of Basic Occupational Health Services (BOHS) has its roots in the WHO Alma Ata Declaration from the year 1978, which spells in article VI: *"Primary health care is essential health care based on practical scientifically sound and socially acceptable methods.....It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work....."*

As the previous health policies were primarily focused at developing hospital infrastructures, the Alma Ata policy with the WHO Health for All Strategy has shifted the priority to the organization of primary health care services for large populations throughout the world. The health impact of this policy shift cannot be over-estimated. It has made the health services accessible to people in villages and remote areas, and to poor people, i.e. to all those who have been traditionally under-served.

The BOHS are an application of the Alma Ata principles in occupational health. It is an effort to provide access to occupational health services to the so far underserved majority of the workers of the world.

The globalization changes the economic structures and conditions of work substantially in virtually each workplace of the world. The need for occupational health services increases rather than declines. The needs for the services change also qualitatively, and become more versatile, more difficult to organize and the served groups become more dynamic and mobile, the workplaces more unstable, and the jobs more temporary.

These trends set special demands to the provision of occupational health services in terms of their structure, contents and methods. A particular challenge is to organize services for the so far underserved sectors and sectors which do not have services at all.

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pational Health, ICOH, and as a joint priority during the 5-year period 2004–2008. Before its final editing, the guideline will be tested in field use in selected environments.

The guideline will be followed by a number of short practical guides for various technical activities of the BOHS.

## Policy and Mission

More than half of the world population belong to the global workforce. Health, safety, work ability and well-being of every worker are a key issue for the overall socio-economic development of each country. 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 the national economies through improved productivity, quality of products, work motivation, job satisfaction, and contribute also to the overall quality of life of working people and society.

The WHO Global Strategy on Occupational Health defines as an important objective the strengthening of occupational health services, expanding their coverage, and improving their content and activities. Training of occupational health personnel, organizing support services and providing a research basis and standards for OHS were the most important means to achieve that goal. To meet these objectives for the whole global workforce the BOHS initiative was made.



Figure 1. The WHO Strategy for Basic Occupational Health Services

### Concept, mission and objectives of BOHS

*The Basic Occupational Health Services are an essential service for protection of people's health at work, for promotion of health, well-being and work ability, as well as for prevention of ill-health and accidents. The BOHS provide services by using scientifically sound and socially acceptable occupational health methods through primary health care approach.*

The objective of Basic Occupational Health is to provide services for all workplaces in the world (in both industrialized and developing countries) which so far have not had such services available or the services have not met their occupational health needs. The BOHS are an effort to provide occupational health services available to each and every working individual in the world regardless of the sector of economy, size of company, geographic area, or nature of employment contract.

The following principles will be applied in the organization of basic occupational health services:

- **Available to all working people**
- **Addressing to local needs**
- **Adapted to local conditions**
- **Affordable to providers and clients**
- **Organized by the employer for employees**
- **Provided by public sector for the self-employed and the informal sector**
- **Supported by intermediate level services**

## BOHS system and infrastructures

The BOHS are an application of the Primary Health Care policy in the sector of occupational health. A wide coverage of services cannot be achieved without BOHS infrastructure. The OHS infrastructure is called OHS system. A model OHS system with numerous possibilities for national and local modifications looks like the following:

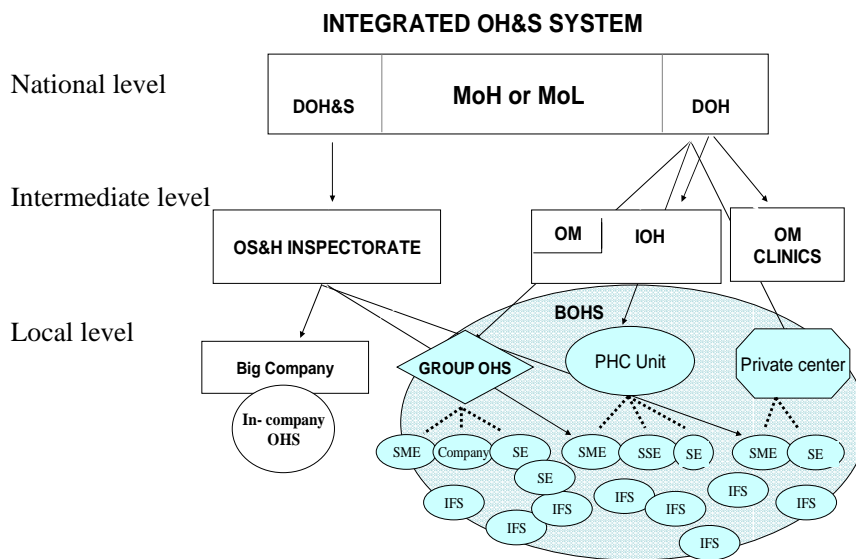


Figure 2. The Infrastructure system for OHS. The main field of operation for BOHS is indicated in the shadowed circle. (Abbreviations; MoH=Ministry of Health, MoL= Ministry of Labour, DoH&S= Department of Occupational Safety and Health, DoH = Department of (public) Health, IOH= Institute of Occupational Health, OM= Occupational medicine, PHC= Primary Health Care, SME= small and medium sized workplace, SSE= Small enterprise, SE= Self-employed, IFS=Informal sector

The overall national system for health services and for occupational safety and health determines the organizational form of the BOHS infrastructure system. The key issue is not the form but the availability and functionality of the system so that the health and safety needs of working people in all sectors and every workplace are adequately addressed.

The infrastructure of BOHS has the following characteristics:

- 1. Constitutes a part of integrated infrastructure for health and safety**
- 2. Can be carried out by several types of service units**
- 3. Collaborates with and takes support from primary health care**
- 4. Collaborates with safety services**
- 5. Specially tuned to serve the small and underserved workplaces**

## Activities and Content

In several international guidelines it has been emphasized that OHS should be multidisciplinary by addressing not only health but also safety, ergonomic, psychosocial, organizational and technical aspects of work and working conditions. Qualitatively the scope of activities of BOHS follow this principle, but as the available resources often are a physician and nurse only, the multidisciplinary content needs to be achieved with the help of adequate training of the BOHS personnel and with the support services.

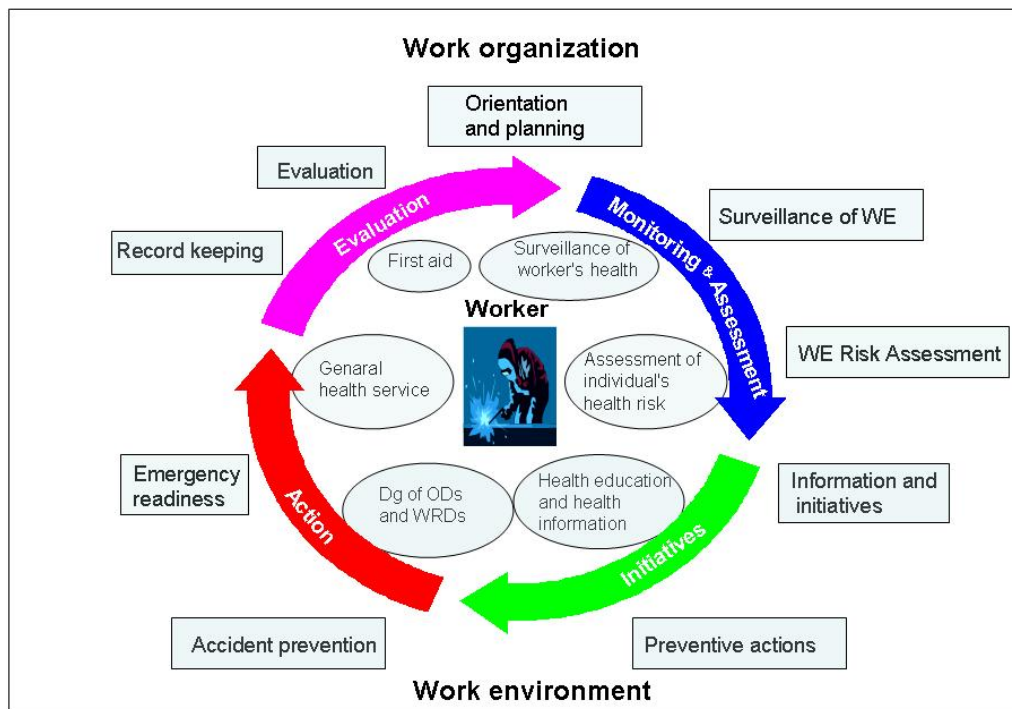


Figure 3. The flow scheme of activities within the framework of BOHS.

## Orientation and planning

If occupational health services have not been previously provided or when new occupational health service staff members are recruited, a preliminary orientation to the occupational safety and health situation of the enterprise is needed. This involves the following steps:

- 1. Analysis of the type of production will indicate the risks and problems typical of the branch or occupation in concern**
- 2. Review of problems that have been identified previously in the company**
- 3. Review of the characteristics of the workforce of the company**
- 4. Available data on occupational diseases and accidents**
- 5. Data on working methods, chemical substances, etc.**
- 6. The knowledge by employers and employees of occupational health problems**
- 7. Plans for changes in production systems, e.g. installation of new facilities, machinery and equipment**

Such orientation helps to decide what kind of activities need to be planned in more detail.

## Surveillance of the work environment

The surveillance of the work environment is one of the key activities of BOHS. It is carried out for the identification of hazardous exposures and other conditions of work, identification of exposed workers, and assessment of the levels of exposures for various groups of workers. At best, surveillance is made by regular walk-through surveys by a multidisciplinary occupational health team supplemented by employers' and workers' representatives. In smaller companies it may be done by the occupational health personnel alone together with the representatives of workers and the employer.

Numerous checklists and guidelines are available and are recommended for surveillance. The survey may contain:

- 1. Identification and evaluation of ergonomic factors which may affect the workers' health**
- 2. Assessment of conditions of occupational hygiene and factors such as physical, chemical, biological exposures which may generate risks to the health of workers**
- 3. Assessment, where appropriate, of exposure of workers to adverse psychological factors and aspects of work organization**
- 4. Assessment of risk of occupational accidents and major hazards**
- 5. Assessment of collective and personal protective equipment**
- 6. Assessment of control systems designed to eliminate, prevent or reduce exposure**

## Surveillance of worker's health

The surveillance of worker's health is made through various types of health examinations. The main purpose of health examinations is to assess the suitability of a worker to carry out certain jobs, to assess any health impairment which may be related to the exposure to harmful agents inherent in the work process and to identify cases of occupational diseases which may have resulted from exposures at work. They are also used to check the ultimate effect of preventive actions and, for example, for assessing work ability of workers.

Numerous guidelines are available for health examinations, their methodology, conclusions and actions on the basis of results, and communication of information to various parties taking into consideration the confidentiality of personal health data.

The following types of health examinations are carried out either on the basis of regulations or as a part of good occupational health practice:

- 1. Pre-assignment (pre-employment) health examinations**
- 2. Periodic health examinations**
- 3. Return to work health examinations**
- 4. General health examinations**
- 5. Health examinations at termination or after ending of service**

## Assessment of health and safety risks

Information from surveillance of the work environment is combined with information from health surveillance, and other relevant available data are used for risk assessment.

The steps in an occupational health risk assessment include:

- 1. Identification of occupational health hazards (as a result of surveillances)**
- 2. Identification of workers or groups of workers exposed to specific hazards**
- 3. Analysis of how the hazard may affect the worker (ways of entry and type of exposure, threshold limit values, dosage/response relationships, adverse health effects it may cause, etc.)**
- 4. Identification of individuals and groups with special vulnerabilities**
- 5. Evaluation of available hazard prevention and control measures**
- 6. Making conclusions and recommendations for the management and control of risks**
- 7. Documenting the findings of the assessment**
- 8. Periodic review and, if necessary, reassessment of risks**
- 9. The results of risk assessment must be documented.**



Special guidelines for assessment of various types of risks are available. The assessment of individual's health risk is made in connection of health surveillance and health examinations.

### **Information and education on risks and advice on need for preventive and control actions**

Information on identified workplace health hazards and risks must be communicated to the managers responsible for implementing prevention and control measures. Legislation also requires full information to the workers on risks and on methods for protection and on avoidance of risks. The national law and practice may also require appropriate information to the safety and health committee and, often in case of severe risks, to occupational safety and health authorities. In informing on health conditions of individual workers the regulations on protection of confidential data and on informed consent must be observed.

To ensure proper understanding and use of information the employer is responsible for education of his or her workers on risks and hazards at work and on their avoidance, prevention and protection, as well as on safe working practices.

Such information and education tasks are often delegated to occupational health experts. The information and education include the following aspects:

- 1. The employer and the self-employed have an obligation to know the hazards of the workplace and works in concern.**
- 2. The workers have a right to know and get continuously information on hazards related to their own work and the workplace.**
- 3. The employer is responsible for training the workers on safe and healthy work practices.**
- 4. Confidential health information of an individual worker is subject to special legislation and practices and to informed consent.**

### **Preventive actions for management and control of health and safety hazards and risks**

Occupational health services should propose appropriate prevention and control measures for the elimination of hazardous exposures and for protecting workers' health. Where appropriate, the measures are recommended after consulting the enterprise management, employers, workers or their representatives. Recommendations must be documented.

Control measures should be adequate to prevent unnecessary exposure during normal operating conditions, as well as during possible accidents and emergencies. Planned modifications in the work processes should also be taken into account and recommen-

dations should be adaptable to the future needs. In many countries, the use of best available technology for safety management is required.

Numerous guidelines for occupational health and safety management systems provide a practical approach for such actions. It is important to document the proposed recommendations so that their implementation can be followed up. Such documentation should emphasize the responsibility of the management for preventive and control actions at the enterprise, and collaboration with the employers and workers.

The actions may comprise:

- **Control of hazards at the source**
- **Ventilation or control technology**
- **Dust control**
- **Ergonomic measures**
- **Use of personal protective equipment**
- **Regulation of thermal conditions**

### **Diagnosis of occupational and work-related diseases**

Occupational diseases may be detected in connection of health examinations, in diagnosis and treatment of general diseases or on symptoms presented by the worker him- or herself. Many occupational diseases can be diagnosed in the BOHS service but many of them need to be referred to specialized occupational medicine clinics. In both instances, the diagnostics follows a special scheme:

- 1. Identification of exposure which may cause the disease**
- 2. Examination of clinical findings which are known to be associated with the specific exposure (lists of ODs)**
- 3. Exclusion of non-occupational factors as a possible cause of disease**
- 4. Conclusion on existence or non-existence of occupational disease (diagnosis)**
- 5. Statement on occupational disease for workmen's compensation**
- 6. Proposals for preventive actions to the workplace of the worker in concern**
- 7. Notification of occupational diseases to authorities**

The diagnosis of work-related diseases does not have definitive legal importance in terms of compensation, but it may have an important impact on preventive and control measures.

## Prevention of accidents

Accidental injuries are one of the most common adverse health outcomes at work. BOHS has a role to play in accident prevention in several different ways:

- Accident risk is identified and assessed in the surveillance of the work environment
- Several factors in the work environment may aggravate accident risk such as exposure to chemicals, haste and stress, shift work, etc.
- The health aspects of the worker may affect accident risk.

Accident risks are managed according to the same logic as other risks at work: identification of risks, assessment of the magnitude of risk, identification of exposed workers and planning and proposing preventive and control measures. The practical methods for accident risk control or elimination are, for example:

- 1. Safe planning of facilities, machinery, etc.**
- 2. Good housekeeping, order and cleanliness**
- 3. Making walkways and other structures safe (e.g. scaffolds, fences etc)**
- 4. Guarding dangerous machines**
- 5. Technical aids for moving and lifting heavy loads**
- 6. Safe tools and safety equipment for workers**
- 7. Analysis of major hazard risks and provision of "redundant safety"**

Dozens of sector- or work-specific checklists and guidelines are available for the identification of accident risks in various works. These guidelines also include methods for risk elimination, prevention or reduction, and methods for the analysis and control of major hazards.

## Maintaining preparedness to first aid and participation in emergency preparedness

Capacity and readiness to first aid is a legislation-based activity in most countries. The BOHS personnel need to be able to provide first aid and train the workplace personnel in first aid activities. The BOHS should also control the availability and condition of first aid facilities and equipment at the workplace.

Although the BOHS are not primarily responsible for major hazard preparedness, the occupational health experts need to participate in the building up of emergency preparedness, to ensure appropriate planning, training, equipment, and contacts with the emergency polyclinics and hospitals, as well as with the rescue teams.

The role of BOHS in first aid and emergency preparedness:

- 1. Providing first aid services at the workplace when appropriate**
- 2. Introducing and training first aid practices to workers and supervisors**
- 3. Maintaining and periodically inspecting the first aid readiness and facilities**
- 4. Participating from the health point of view in emergency planning and organising the health elements in emergency response**

### **General health care, curative and rehabilitation services**

BOHS personnel may provide general preventive health services by providing immunizations and by guiding preventive and health promotion activities to introduce healthy lifestyles.

Besides diagnosis of diseases BOHS services may be involved in the treatment and rehabilitation of occupational and work-related injuries and diseases. The knowledge of occupational diseases and injuries coupled with the knowledge of the job demands, hazards of the work environment and occupational exposures present in the workplace enable the occupational health professionals to play a key role in the management of work-related health problems and in rehabilitation. A special activity is focused to the workers on return to work after an injury or a long sick leave.

In some countries, occupational health services provide ambulatory general health services during working hours. Certain benefits from such services are found in providing quick service to workers and thus saving working time and also in combining the information on occupational health, working conditions and general health of workers. This is necessary, for example, in promotion and maintenance of work ability of ageing workers. This activity may be fully integrated with BOHS if the occupational health services are provided by primary health care units.

Where appropriate the BOHS may include:

- 1. Immunizations and other preventive measures**
- 2. Participation in public health actions and programmes**
- 3. GP level general health services**
- 4. Inspection and advice on canteens, sanitary facilities etc.**
- 5. Advice and education in general personal and community hygiene**
- 6. General health promotion and introduction of healthy lifestyles**

## Record keeping by BOHS

As a health service BOHS have a general obligation to keep record on health service provided to the workers, on exposures detected or measured, and on all events dealing with the health of individual workers or health and safety aspects of the workplace.

In occupational health there are several record-keeping obligations such as:

- 1. General health record if the workers are treated as patients or health service clients**
- 2. Data on surveyed, detected and measured occupational exposures and risk assessments which have been made**
- 3. Statistics on occupational diseases and injuries**
- 4. Data on health examinations**
- 5. Documents on proposals for preventive and control measures**

## Evaluation

To learn from the experience and to undertake measures which may be needed for the improvement of services the BOHS should annually make a self-evaluation on its own activities and their effectiveness in prevention of health and safety hazards and in the provision of services to working people. The evaluation result should be documented and presented to the employers' and workers' representatives. Guidelines and tools for the self-evaluation practices are available.

## Provision of Basic Occupational Health Services

In general, numerous models for the provision of occupational health services are available:

- Primary health services model**
- Big company model with in-company services**
- Group services organized jointly by several SMEs**
- Social security institution as a service provider**
- Private physician who has special competence in occupational health**
- Private health centre either providing occupational health services only or occupational health as a part of its services**
- Local or regional outpatient clinic of hospitals**

The clients for BOHS are mainly the SMEs and the self-employed, as well as farmers and the workers in the informal sector. This excludes the use of some models either for structural (scattered distribution) or economic (affordability) reasons. The widest coverage of services is possible to achieve through primary health services unit model. In the countries where the public primary health care units provide BOHS for SMEs and the

self-employed, they may cover a substantial proportion of the total occupational health service provision in the country (up to 40%). Often they are in practice the only option to cover the informal sector. The social security institutions organize occupational health services in some countries. The coverage is there defined by the coverage of insurance and the non-insured are not covered. In some countries, the hospital outpatient clinics provide publicly funded occupational health services for the SMEs and other underserved groups.

As the competence of the frontline BOHS is not sufficient to ensure solution of all the problems of practical occupational health and safety, the governments should consider organizing the necessary secondary level support services which provide specialized analytical, measurement and consultations services to BOHS providers, including clinical services in occupational medicine.

## **Human resources for Basic Occupational Health Services**

In the optimal case the occupational health services will be provided by a multidisciplinary team (comprising a physician, nurse, occupational hygienist, ergonomist and psychologist). Such a resource is not possible to organize for most of the small service provision units and particularly for the SMEs, rural agricultural and informal sectors. The service provision needs to be trusted to a physician and a nurse who may not always have specialty in occupational health.

In many industrialized countries, the basic training curricula for physicians and nurses contain short introductory course in occupational health. Such an element should be included in curricula in all countries. While larger units may have possibility to hire occupational health specialists, most of the BOHS will be provided by non-specialists, primary health care personnel, or general practitioners. It is, however, not possible to provide competent occupational health services without special training in occupational health. Therefore, it is vitally important that even the non-specialists have a certain minimum training in occupational health services. The reasonable minimum postgraduate training should be a well-designed course of about 10 weeks supplemented with a certain amount of self-studies.

The quantitative need for OHS personnel in BOHS is not easy to estimate as the structures of constituents and their needs may vary widely. An experience-based estimate speaks for a minimum need of one physician and two nurses per 5000 workers with a great variation depending on the branch of industry and size of workplaces, as well as on their geographic distribution. The public authorities are responsible for ensuring that such a resource is available and its competence is regularly updated in each country.

## **Financing**

According to the ILO Convention No. 161 on Occupational Health Services, the financial responsibility for the provision of occupational health services rests on the employer. As the ability of the SMEs and the self-employed, and particularly the informal sector enterprises and workers, to buy external services is poor or non-existent, often the

only possibility to provide services is the provision of BOHS by the public sector, i.e. the primary health care units, public polyclinics or by social security organizations. In some countries, special external OHS are well developed and the OHS units can provide services through the market mechanism to all enterprises and workplaces that wish to get them. Even in such a model the ability of the underserved sector to buy services needs to be ensured through some kind of financial support. Irrespective of the service provision model it is realistic to assume that the need for subsidizing of services for SMEs and the self-employed, agricultural and informal sectors is remarkable, amounting to 50–100%.

## **Actors in organization and development of Basic Occupational Health Services**

The clients of BOHS are heterogeneous, scattered, poorly organized and poor in resources. The only party with an overall view is the public sector, government occupational health and safety, health or social security authority (often Ministry of Labour or Ministry of health). The organization of services requires several other actors, who vary according to the sector and target group. In addition to government's competent authority, following partners can contribute and should be involved, when appropriate:

- **Government's special agencies in occupational safety and health and in health sector**
- **Provincial and local municipal authorities**
- **Social partners, employers' organizations and trade unions**
- **Branch organizations and chambers of commerce**
- **Associations of agricultural producers and small enterprises**
- **Associations of occupational health professionals**
- **Safety representatives of local workplaces and communities**
- **Ministry of Agriculture and Ministry of Industry**

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