



## Technical and Ethical Guidelines for Workers' Health Surveillance

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### 1. Introduction

1.1. In the past, medical examinations were considered as the starting-point of any programme for the protection of the health of a working community in many countries. First aid and curative health care often represented an important step towards prevention and the protection of workers' health. The development of clinical and forensic medicine, coupled with the extension of compensation schemes for occupational injuries, poisoning, and occupational diseases during the first quarter of this century, further strengthened awareness of the need for prevention and led to the development of industrial medicine and industrial hygiene.

1.2. During the first half of this century, surveillance of the health of workers was limited to medical examinations for certain categories of workers (such as young workers) and for specific occupational hazards, as in specific occupations. Subsequently, it was extended to all workers in a number of countries, for example, France, Japan. Such examinations were carried out by certified or approved physicians in some countries or by any physician in certain countries. Later, the trend was to create medical services at the place of employment where such medical examinations were carried out as one of their functions. These services usually had other functions, such as the treatment of work injuries or taking care of workers' health in general (curative and preventive aspects). During the second half of this century, preventive occupational medicine and occupational health services were developed and institutionalized.

1.3. Diseases caused by work had to be found, treated and compensated. The need for a medical approach was obvious. Recently, many things have changed: technical progress, more sophisticated means of investigation (biological monitoring and surveillance of the working environment), renewed emphasis on

prevention and holistic approaches (total health of workers, multidisciplinary) as well as on values (primary health care, human and workers' rights) and organizational aspects which are conducive to a sound practice from a technical, ethical, social and economic point of view.

1.4. The situation and the needs have changed. The purpose of occupational health was modified by the Joint ILO/WHO Committee on Occupational Health, at its 12th Session in 1995 (see [Glossary](#)). The expectations are different. Some health surveillance programmes were poorly understood or ill-advised: their purposes and benefits were not always clearly expressed. The purpose of health surveillance has to be clarified and its organization redefined. That is why the ILO convened a Meeting of Experts on Workers' Health Surveillance.

## 2. General principles and purposes

2.1. The guidelines will place workers' health surveillance within the discipline of occupational safety and health. As a part of the occupational health programme, workers' health surveillance is used in conjunction with other tools including working environment surveillance. The central purpose is the primary prevention of occupational and work-related diseases and injuries. A particular workplace health surveillance programme must state, at its outset, whether or not the programme has primary prevention purposes and, if so, what they are. The particular programme must state what the other purposes of the programme are, e.g. secondary prevention.

2.2. The surveillance of workers' health should contribute to the aims of occupational health defined by the Joint ILO/WHO Committee on Occupational Health at its 12th Session in 1995 (see [Glossary](#)).

2.3. The surveillance of workers' health should be appropriate to the occupational risks in the enterprise. There is a need to develop a strategy which will combine in a suitable manner individual and collective health assessments. The surveillance of workers' health should be accompanied by a number of safeguards concerning its purpose, its quality, the protection of workers' interests and the collection, transmission and use of health and medical data.

2.4. Workers' health surveillance must take place under controlled conditions within an organized framework, preferably occupational health services set up in accordance with the ILO Occupational Health Services Convention, 1985 (No. 161) and Recommendation (No. 171) (see [Annexes 1 and 2](#)), which lay down general principles respecting occupational health practice, including workers' health surveillance, and the manner in which occupational health services should be established and operated.

2.5. Workers' health surveillance, within an organized framework, should be based on sound ethical and technical practice. Specifically, any workers' health surveillance programme must ensure:

- i. professional independence and impartiality of the relevant health professionals;
- ii. workers' privacy and confidentiality of individual health information.

Procedures in a particular programme must meet, clearly and demonstrably, four criteria of worth or value: need, relevance, scientific validity and effectiveness.

2.6. The collection, analysis and communication of workers' health information should lead to action. The particular programme must relate the results of the programme to its declared purposes and what the consequences will be for workers' health and livelihood (work, job security/income), and what the impact of the programme will be on the structure of the workplace and working conditions.

2.7. Workers' health surveillance programmes should be used for prevention purposes and in particular to:

- i. describe the health status of working populations and social-economic groups by estimating the occurrence of occupational injuries and diseases (frequency, severity and trends in mortality and morbidity);
- ii. stimulate occupational epidemiological studies and explain the causes of occupational injuries and diseases by identifying the physical, behavioural, organizational, psychosocial and occupational exposure factors that cause specific injuries and diseases or their respective risk factors;
- iii. predict the occurrences of occupational injuries and diseases and their distributions in working populations in order to determine the specific focus for prevention;
- iv. prepare action-oriented research and intervention epidemiology strategies to eliminate causal factors through prevention and to mitigate their consequences by curative and rehabilitative activities; and

- v. assess the effectiveness of previously implemented control measures.

2.8. Workers' health surveillance should be linked to the surveillance of occupational hazards present in the workplace. The surveillance of the respective workplace exposure or hazard may be just as useful as occupational injury and disease surveillance in targeting prevention programmes, even if the former is to be preferred.

### 3. Organization of workers' health surveillance

3.1. Workers' health surveillance should be organized to meet the aims of occupational safety and health, taking due account of the nature of occupational hazards in the workplace, the health requirements of the work, the health status of the working population, the resources available, the awareness of workers and employers of the functions and purposes of such surveillance and the relevant laws and regulations. The assessment of the level(s) of surveillance appropriate to an enterprise should be based on a thorough investigation of all work-related factors which may affect workers' health.

3.2. Workers' health surveillance may be carried out at the enterprise, industry, municipal, regional and national levels. It can be undertaken by occupational health services established in a variety of settings, e.g. within an enterprise or among enterprises, by the public health facilities available in the community where the enterprise is located, by worker-run centres, or contracted out to a professional institution, provided surveillance is carried out by qualified occupational health professionals.

3.3. A comprehensive system of workers' health surveillance includes individual and collective health assessments, occupational injury and disease recording and notification, sentinel event notification, surveys, investigations and inspections. It has three main components: collection of information from various sources; analysis and evaluation with regard to quality and intended use; and action and follow-up, including:

- i. feedback to ensure an improved match between the collection of information and its use;
- ii. guidance on health policies, occupational safety and health policies and programmes, including the financing of their implementation;
- iii. early warning capabilities so that the competent authority, employers, workers and their representatives, occupational health professionals and research institutions can be alerted, in due course, to the occupational safety and health problems existing or emerging in a country; the system should not be passive but active;
- iv. evaluation of the success of any follow-up action and measures taken to improve working conditions and workers' health.

### **Assessments of workers' health**

3.4. Workers' health surveillance may be prescribed by law or not and may be compulsory or voluntary. Any workers' health surveillance programme must be conducted in line with the basic principles outlined in Chapter 2.

3.5. Assessment of workers' health is one of the main components of any programme of prevention in the workplace. Medical examinations are the most commonly used means of health assessment of individual workers.

3.6. Medical examinations and consultations, either as part of screening programmes or on an as-needs basis, serve five main purposes:

- i. evaluation of the effectiveness of control measures in the workplace;
- ii. detection of pre-clinical and clinical abnormalities at a point when intervention is beneficial to individuals' health;
- iii. prevention of further deterioration in workers' health;
- iv. reinforcement of safe methods of work and health maintenance;
- v. assessment of fitness for a particular type of work, the present concern being the adaptation of the workplace to the worker.

3.7. During medical examinations and consultations, it may be appropriate for the occupational physician to:

- i. inform workers of potential injury/diseases and control measures necessary for prevention;
- ii. inform workers of potential diseases and conditions of work and exposures which are medically contra-indicated and to advise them where they can get help in the treatment or correction of their condition;
- iii. inform workers and their employers of the effectiveness or otherwise of control measures;
- iv. help the employer place workers in occupations that take into account their capacity for particular work;
- v. draw the attention of young persons to their physical and mental aptitudes in order to facilitate appropriate vocational guidance;
- vi. prevent the total exclusion of any worker from employment and to provide for the employment of each worker, despite any contra-indications, in work which he or she is capable of performing, taking into account the respective employment opportunities available.

3.8. Medical examinations and tests should not be carried out as a perfunctory routine. Due consideration should be given to their value and relevance. They should be governed by a set of principles which include:

- i. selecting appropriate tests which are acceptable to workers;
- ii. discarding tests that cannot meet requirements with respect to their relevance, specificity and sensitivity; and
- iii. periodically reviewing health surveillance programmes as a whole and modifying them in the light of improved working conditions.

3.9. The procedures of medical examinations comprise a personal history and a clinical examination. They may include questionnaires, diagnostic tests, function measurements and biological tests of exposure levels to environmental agents in the workplace. The contents of these examinations should be relevant to the nature of hazards. Occupational health physicians or medical practitioners engaged in an occupational health practice should retain overall responsibility for biological tests and other medical investigations as well as for the interpretation of results, although tests can be performed by nurses, technicians and other trained personnel under their supervision.

3.10. Medical examinations should take place, where appropriate, before or shortly after employment or assignment, to collect information and to act as a baseline for future health surveillance.

3.11. There should be no single form of pre-employment medical examination. Such examinations should be adapted to the type of work, vocational fitness criteria and workplace hazards. The following general guidance points should be kept in mind:

- i. a health assessment by questionnaire may suffice for most jobs;
- ii. there should be no discrimination against disabled or handicapped applicants who meet the requirements of a given job;
- iii. the health assessment should be conducted bearing in mind the possibility of improving the working conditions through ergonomic engineering, the innovative design of work processes and the elimination of occupationally hazardous agents, or through replacement or substitution of these with safer methods.

3.12. Medical examinations may take place at periodic intervals during employment and should be appropriate to the occupational risks of the enterprise. These examinations may also occur:

- i. on resumption of work after a prolonged absence for health reasons for the purpose of determining any possible occupational causes, recommending appropriate action to protect workers, and determining suitability for the job or the need for reassignment and rehabilitation;
- ii. at the request of the worker, for example, when a worker changes work and, in particular, when a worker changes work for medical reasons.

3.13. In some cases, occupational health physicians may be required to carry out a medical examination of workers on or after the cessation of their assignment or employment in order to establish a final bill of health and, taking into account the information provided by previous periodical examinations, to assess the effects which job assignments may have had on the workers' health. Continued post-employment surveillance through medical examinations may be desirable for persons who have been exposed to agents with delayed effects, for the purposes of ensuring early diagnosis and treatment of such diseases as skin or bladder cancer.

3.14. Medical examinations should serve for prevention and protection purposes which include not only the protection and promotion of workers' health but the protection of access to work, entitlement to compensation, health insurance benefits and social protection. Under no circumstances should medical examinations for employment be used as a substitute for measures to prevent and control hazardous exposures. Medical examinations should be used to improve working conditions in such a way that will facilitate the adaptation of work to workers.

3.15. Results of periodic examinations, in combination with information on environmental exposure levels, can be used to verify the level of protection provided by exposure limits and to contribute to their revision. In addition, such examinations may often be used to identify possible health effects of changes in working methods, work organization, working conditions, new technology, or materials used in the work process.

### **Biological tests and other investigations**

3.16. Specifically designed biological tests and other investigations to detect as early as possible any signs of organic disorders or potentially harmful exposure are available and are widely used. In most cases, they are an integral part of the medical examination. Such investigations are subject to the workers' informed consent and must be performed according to the highest professional standards and least possible risk.

3.17. Biological tests and other medical investigations must be carried out under the supervision of a physician and be subject to medical confidentiality and must be relevant to the protection of the health of the worker concerned, with due regard to their sensitivity, specificity and predictive values.

3.18. When it is possible and appropriate to make a choice, preference must always be given to non-invasive methods and to examinations which do not pose any danger to the health of the worker concerned. An invasive investigation or an examination which involves a risk to the health of the worker may be advised only after an evaluation of the benefits to the worker and the risks involved and cannot be justified in relation to insurance claims.

3.19. The use of biological monitoring tests, which are simple and have the best validated action levels (e.g. tests for lead, cadmium, mercury, and carbon monoxide in blood and cadmium, fluoride and mercury in urine), are particularly useful in workers' health surveillance when properly used and are cost-effective when used for the individual or collective monitoring of exposed workers. However, they should not be a substitute for the surveillance of the working environment and the assessment of individual exposures. Priority should be given to environmental (exposure limits) over biological (biological exposure limits) criteria. Values commonly found in the general public should be taken into account when assessing the significance of such results of biological monitoring.

3.20. At present, it is generally believed that genetic screening in relation to work is a disproportionate infringement of individual rights. Current scientific knowledge is not sufficient to warrant its use for an occupational health purpose.

### **Sickness monitoring**

3.21. 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 in the workplace.

3.22. Occupational health professionals should not become involved in the administrative management and control of sickness absence, but it is acceptable for occupational health professionals to advise on medical aspects on sickness cases whilst medical confidentiality is kept. Occupational health professionals should not be required by the employer to verify the reasons of absence from work. They may be asked by employers or workers' representatives to provide advice on the health status of the workforce in the enterprise and on medical problems which affect attendance and fitness for work.

3.23. For the purpose of the identification of possible relations between the reasons for ill health or absence and any health hazards which may be present in the workplace, occupational health physicians should have full access to data on the occurrence of ill health among workers and on absences from work for health reasons. In some cases, occupational health physicians may feel it necessary to liaise with a worker's family doctor. If this

is the case, the worker's informed consent must be obtained before the liaison is established. The worker must have the right of access to the family doctor's medical report prior to its disclosure.

### **Recording and notification systems**

3.24. Systems for monitoring the mortality and morbidity of occupational injuries and diseases are generally established by national authorities within the framework of occupational disease and injury prevention, compensation or benefit programmes. There are also voluntary occupational injury and disease reporting systems. The ILO Code of practice entitled *Recording and notification of occupational accidents and diseases* could also be used by member States as a basis for developing their own systems.

3.25. Workers' compensation data are a useful source of surveillance information concerning cases of occupational disorders and the cost of work-related injuries and diseases. These data are useful for monitoring trends in the occurrence of selected occupational injuries and diseases and for identifying high-risk jobs, occupations and activities for follow-up action.

3.26. The widespread underestimation (due to non-reporting or under-reporting) of actual incidences of occupational injuries and diseases should be properly addressed. Epidemiological and other data from comparable conditions should be utilized to obtain a realistic picture of the magnitude of the problems. Surveillance of any disease depends upon its recognition (diagnosis). Appropriate attention should be given to the development of diagnostic criteria and to the training of physicians in applying these criteria and in gaining knowledge about diseases that are linked to patients' occupations.

### **Surveys, voluntary programmes and inspections**

3.27. Epidemiological surveys, as well as studies and research in occupational health and safety, are very useful approaches in the surveillance of diseases due to work. The ethical principles of scientific research, professional ethics and the protection of individual rights and confidentiality apply to all surveys and research.

3.28. Individual workers' health surveillance may identify health disorders which are not necessarily but might be work-related. This could justify targeted special workers' health surveillance programmes or targeted surveys for individuals or groups presenting a common health disorder or exposed to specific occupational hazards in the enterprise. Such surveys, carried out on a regular basis, represent a useful addition to workers' health surveillance.

3.29. The sentinel events approach is a very helpful procedure to identify high-risk jobs and activities for occupational disease and to provide clues to the etiology of diseases. Sentinel surveillance may be used as a supplement and useful alternative solution to the under-reporting and underestimation problems faced by occupational injury and disease notification systems.

3.30. Significant incident reporting schemes developed for the rapid identification of hazards, the timely initiation of preventive measures and the prompt control of accidents and industrial disasters can also be used as sources of information by workers' health surveillance systems. Near accident recording provides a wealth of information where surveillance of actual injuries yields insufficient data.

3.31. Walk-through surveys, voluntary inspection programmes and audits carried out by occupational health professionals may identify specific or suspected occupational hazards which would justify a specific workers' health survey.

3.32. The medical inspections carried out by the labour inspectorate should play an essential role in ensuring that laws and regulations governing workers' health surveillance are properly applied. Medical inspectors should control and monitor the operation of occupational health services, where they exist, and collaborate with occupational physicians, nurses, hygienists and engineers engaged in an occupational health practice. In specific cases, medical inspectors may consider it necessary to organize or recommend targeted surveys concerning specific occupational hazards which have come to their knowledge during the course of their inspections. The role of occupational safety and health inspectors where medical inspectors do not exist is particularly important to maintain a liaison between occupational health services, research institutions, universities, public health services and the institutions responsible for treatment, compensation and

rehabilitation, as well as links with the regulatory process.

### **Other data sources**

3.33. In addition to records on workers' health surveillance by occupational health services, some health and disease data, routinely collected at national and regional levels for surveillance and administrative purposes, may be a relatively easy and efficient means of surveillance of workers' health in general and of occupational injuries and diseases in particular.

3.34. The advantages and disadvantages of the use of existing data sources for workers' health surveillance should be carefully considered. The utility of different data sources needs to be evaluated, as well as their possible use in the ongoing programmes of prevention of occupational illnesses and injuries.

3.35. National administrative data collection provides low cost sources of information which can give an overview of the distribution of deaths, disease and injury incidence across occupational and industry groups. The data can be used to identify areas for concern which require further investigation and provide statistical estimates for the health status of workers and the extent of their health disorders.

3.36. Death certificates are an accessible source of mortality data and the analysis of death records is one of the most common forms of surveillance. The distribution of causes of death across occupational groups may indicate excess mortality which warrants further investigation. Medical examiners' and coroners' reports provide an additional and sometimes detailed source of mortality data. Routinely collected morbidity data (injury and disease notifications, case reports, etc.) are another source of useful information for workers' health surveillance. Vital event statistical information on death or birth and some population-based registers are often relevant to surveillance.

3.37. Hospital discharge records can also provide information for the surveillance of occupational diseases and injuries. The magnitude of some diseases and injuries can be estimated by sampling emergency room records or records of primary health care services (at community or district levels in a particular population or geographical area). However, since such data are collected within hospitals or curative health services, they may represent only a conservative estimate of the targeted disorder in the area.

3.38. Trauma registries provide important and comprehensive surveillance data for serious injuries. Disease registries are advantageous because mortality and morbidity data already collected for other reasons can be used at a relatively low cost. Cancer registry data are compiled from a range of sources including pathologists, hospitals, nursing homes, cancer treatment centres and death registries. They represent another source of information for occupational disease surveillance. Exposure registries, such as those for carcinogenic agents, are useful in providing information on possible occurrences of occupational diseases with a long latency period.

3.39. Workplace (employer) records of occupational injury and disease, if available, could be another useful information source for workers' health surveillance. Some manufacturers keep detailed records of workers' health problems relevant to their products, which could be a good source for surveillance purposes within the framework of a responsible care programme. Trade unions may also have morbidity or mortality data which may prove relevant or useful.

3.40. Laboratory test results of biological samples (e.g. blood and urine) to determine the concentration of toxic substances absorbed by workers from their working environment can be used as an index of disease status in selected instances and provide valuable information for workers' health surveillance.

3.41. Since the cost of conducting a large scale survey is often high, the relatively cheaper option of including items in major surveys conducted by government or other agencies should be explored. Two major surveys C the national health survey and labour force survey C are important sources of information for workers' health surveillance. Studies should be carried out to assess the potential usefulness of such data sources, and to further improve the relevance and usefulness of these data to the study of occupational disorders.

3.42. Surveillance of occupational hazards and hazard mapping are also useful sources of information, even in the absence of a simultaneous health status assessment, because hazard surveillance establishes a link with prevention. Hazard surveillance may be used to identify hazardous processes where health surveillance is

required. Hazard surveillance should be organized with a view to collecting information on known health hazards and identifying unknown hazards which may exist within the working environment and which would justify an individual health surveillance.

#### 4. Collection, processing and communication of health-related data

4.1. The ILO Code of Practice on the Protection of Workers' Personal Data contains general principles which should be applied in workers' health surveillance. Workers' health data should be collected for justified purposes and in conformity with the general principles of occupational health and safety. The ultimate goal of collecting workers' health information should be to enhance the protection of the health and safety of workers and the public in line with the objectives which appear in the definition of occupational health.

4.2. Workers' health surveillance should process only the information which is useful for the assigned purpose. Appropriate attention should be attached to the extension of information technology which, if not properly controlled, may result in a widespread misuse of data. Special instructions concerning health and medical records maintained in electronic form should be issued by the competent authority in addition to general rules and regulations concerning privacy and personal data.

4.3. Good records and documentation are vital to all systems of workers' health surveillance. Health and occupational health professionals should contribute to the workers' personal health files with information relevant to the protection of workers' health and in accordance with their professional judgement and ethics. Personnel providing occupational health services should have access to the information contained in the file to the extent that it is relevant to the performance of their duties.

4.4. Workers' personal medical data should be collected in conformity with medical confidentiality and the general principles of occupational health and safety.

4.5. Workers' personal health data covered by medical confidentiality should be stored only by personnel bound by rules on medical confidentiality. Such data should be maintained separately from all other health data. Access to medical files and data should be restricted to medical professionals.

4.6. Workers have the right of access to their own personal health and medical files. This right should preferably be exercised through a medical professional of their choice. Special attention should be devoted to the need to maintain accurate and up-to-date records. Measures should be taken to facilitate the exercise of the right of each worker to have any erroneous data corrected.

4.7. Confidentiality must be respected in the whole process of workers' health surveillance. Personal health files and medical records must be kept secure under the responsibility of the occupational health physicians or occupational health nurses. The conditions under which, and the length of time during which, workers' health and medical records should be maintained should be prescribed by national laws and regulations or by the competent authority.

4.8. Personal information of a medical nature should only be communicated in accordance with the provisions governing medical confidentiality. Workers should be informed prior to such communications. Personal health data may be communicated to third parties only with the informed consent of the worker concerned.

4.9. General and collective information on the health of workers in the enterprise must be provided to employers and workers and their representatives in an appropriate manner for prevention, protection and promotion purposes. Communication of data may imply an interaction between the originator and the receiver. It may entail an obligation on the receiver's side, for example, the need to take action.

4.10. Special attention should be given to the manner in which forms are conceived. There may be irrelevant questions and some important aspects may be missing. Forms and questionnaires to be filled in by workers or by occupational health professionals may not meet the necessary criteria of respect and confidentiality. Occupational health professionals should examine such forms and questionnaires and endeavour to have them revised if necessary.

4.11. The danger that sophisticated investigations are often coupled with a lack of communication and explanations by the health profession should not be overlooked. Efforts should be made to limit investigations to those which are necessary for occupational health purposes and to ensure transparency, which will build a climate of confidence in the professional judgement and ability of occupational health professionals to provide

sound advice which takes judicious account of the need to protect health and to maintain employment.

## 5. Use of health-related data

5.1. Workers' health data collected within the framework of workers' health surveillance should be used to protect the health of workers (physical, mental and social well-being) individually and collectively.

5.2. When the results of workers' health surveillance are used for assessing the fitness of the worker for a specific job or work, the principles below should be followed:

- i. within an occupational health perspective, there is no such thing as fitness for employment in general; fitness can be defined only in terms of a particular job or type of work; similarly, there is no such case as absolute unfitness for employment;
- ii. fitness reflects the relationship between the demands of the specific work and the abilities of the worker who is to do the work; as both the work and the worker's health status are subject to change, any assessment of fitness for employment should be open to review, since it relates to one point in time;
- iii. caution should be exercised when a diseased or physically disabled person is examined for fitness for employment, when two major risks should be avoided: the first is to overestimate functional disability by failing to allow for any adaptation of the job to the worker, while the second is to underestimate an intelligent and determined person's ability to overcome a disability and produce satisfactory results in a job that might be beyond such determination;
- iv. fitness for employment should be viewed in the light of the interactions between fitness, ergonomics, functional and vocational rehabilitation.

5.3. The establishment of fitness criteria is often an over-simplification which may not be consistent with sound occupational health practice. In practice, it is preferable to express fitness in terms of *no medical contra-indication* to a specific job or work and to express *unfitness* in terms of the kinds of jobs and conditions of work and exposure to hazards which are medically contra-indicated, temporarily or permanently.

5.4. The shift from a *fitness* to *adaptation* approach implies that the results of the health assessment should also be used for the objectives of advising the worker and the employer on the measures that they should take to overcome the problem; on which lifestyle might minimize work-related problems; the use of individually adapted protective equipment; and advising the employer, management, workers' representatives and the safety and health committee, where it exists, on measures (collective, individual or both) to adapt the working environment or the work organization to the physiological and psychological needs of workers.

5.5. When workers' health surveillance reveals that the health conditions of the worker and the nature of the tasks performed are likely to endanger the safety of others, the decision with regard to fitness may be difficult to take. The worker must be clearly informed of the situation so that he or she can take remedial action. In the case of a particular hazardous situation, the management must be informed and take the necessary measures to safeguard other persons.

5.6. When an occupational disease has been detected in a worker and continued employment might jeopardize health, remedial action should be taken in the interest of the worker. Primarily, this should consist of removing the hazards and improving the working environment and working conditions. However, occupational hazards may be intrinsically linked to the work and, in such cases, the removal from exposure or a particular work situation, either temporarily or permanently, may be the only solution. When an alternative employment is provided, it should be consistent with the state of the worker's health and not likely to impede or retard recovery.

## 6. Responsibilities, rights and duties

### Competent authority

6.1. The competent authority should, in consultation with the most representative organizations of employers and workers, formulate a comprehensive national policy on occupational health in general and on workers' health surveillance in particular, as required or recommended by the Occupational Safety and Health Convention, 1981 (No. 155), the Occupational Health Services Convention, 1985 (No. 161), and Recommendations (Nos. 164 and 171).

6.2. Such a policy should be supported by laws and regulations and a mechanism of inspection for their enforcement; indicate the goal of covering all workers and providing for a progressive extension of occupational health services; make provisions for coordination so that national health and labour infrastructures, expertise and resources are used efficiently to provide occupational health care to populations; and include provisions for a workers' health surveillance system which would be an integral part of the programme of prevention, protection and promotion at national, community and enterprise levels.

6.3. The competent authority should set minimum standards with regard to workers' health surveillance including the right to access to appropriate health surveillance. Surveillance should include all necessary assessments to protect the health of workers and make use of all the resources available in order to encourage the coverage of all workers, including the self-employed.

6.4. In order to ensure that workers' health surveillance is carried out in an appropriate manner, the competent authority should encourage the establishment of occupational health services and the designation (registration, licensing) of specific medical services and local hospitals within the national health infrastructure for the provision of occupational health services. The competent authority should also determine the qualifications required for personnel providing occupational health services, according to the nature of the duties to be performed.

6.5. The competent authority should supervise the implementation of workers' health surveillance, have an advisory role in this respect and disseminate information on different national and international practices and experiences on this issue.

6.6. The competent authority should review national practice on workers' health surveillance, establish priorities and devise an approach to ensure that the workers' health surveillance reflects the needs at enterprise and local levels, so that workers' health surveillance is managed in a cost-effective manner with no loss of quality.

6.7. The competent authority should establish a list of occupational diseases subject to surveillance, which should be periodically reviewed. Such a list should comprise those diseases listed in Schedule I of the Employment Injury Benefits Convention, 1964 (No. 121), and should preferably be expanded to include the occupational diseases mentioned in Annex B of the ILO Code of practice, entitled *Recording and notification of occupational accidents and diseases*, 1996 (see [Annex 3](#) and [Annex 4](#) of these guidelines).

6.8. The competent authority should adopt provision for the purposes of protecting the privacy of workers and ensuring that health surveillance is not used for discriminatory purposes or in any other manner contrary to their interests. A procedure of appeal should be established to address cases where there is a difference of opinion between the occupational health physician and the worker concerning fitness for a specific occupation.

## Employers

6.9. The employer should make the necessary arrangements to provide workers access to health surveillance, preferably during working hours and at no cost to the worker concerned. Such arrangements should be part of the occupational safety and health management system of the workplace. The employer should structure the administrative and organizational arrangements for workers' health surveillance in such a way that they operate in a smooth and effective manner.

6.10. The employer should ensure that workers have access to health surveillance appropriate to the health and safety risks they incur at work.

6.11. Employers may request a medical examination for workers in their employment or for workers they intend to recruit, but there should be a justification. In the case of recruitment, the examination should be conducted at the end of the process, when a decision about the employment of the person has been taken in principle, subject to the result of the medical examination.

6.12. The employer in consultation with workers' representatives and the joint safety and health committees, where they exist, may offer medical surveillance and health promotion programmes to workers in their employment, preferably within the framework of organized occupational health services.

6.13. The employer may request from occupational health professionals anonymous, collective health-related information for prevention purposes and should be given appropriate and relevant information for taking

effective measures to protect workers' health and prevent further occurrences of occupational accidents and health disorders.

6.14. If a particular job is found medically contra-indicated for a worker, the employer must make every effort to find alternative employment or another appropriate solution, such as retraining or facilitating access to social benefits, rehabilitation or a pension scheme.

## **Workers**

6.15. Workers' representatives and the joint safety and health committees, where they exist, should have the right to receive collective reports on health surveillance and medical examinations, subject to the confidentiality of personal data.

6.16. Workers or their representatives should be involved in the decision-making process concerning the organization of the implementation of workers' health surveillance. Those representatives and the joint safety and health committees, where they exist, should also play an adequate role to prevent work-related injuries and diseases and promote workers' health in cooperation with occupational health professionals.

6.17. Workers must participate and cooperate with occupational health professionals and the employer in the implementation of workers' health surveillance, which is conducted in conformity with these guidelines including respecting instructions and benefiting from medical examinations as appropriate.

6.18. A worker undergoing a health assessment must be informed in advance of its purpose, the use to which information collected will be put and of the consequences (positive and negative) of accepting or refusing such an assessment. Workers should be informed in an objective and comprehensible manner of the reasons for the examinations and investigations relating to the health hazards involved in their work. They should be informed individually of the results of the medical examinations and of the respective assessment of health. When informing individual workers, their level of literacy and comprehension must be taken into account.

6.19. Before any medical examination or health assessment, an informed consent is necessary and it should also be voluntary when the health surveillance is not prescribed by national laws and regulations. Workers must have the right to be advised individually on their health in relation to work. They must have the right to appeal and be informed of the procedure of appeal, should they disagree with the conclusions of their examinations.

6.20. Workers' representatives or the joint safety and health committees, where they exist, may request collective health assessments in relation to work when a problem of an occupational health nature is suspected. The worker should have the right to request an assessment of health (i.e. a medical examination or other tests as appropriate) if a disorder occurs which the worker believes is due or related to work.

## **Occupational health professionals**

6.21. Taking into account relevant laws and regulations concerning workers' health surveillance and professional ethics, including ethical guidance at national and international levels, the occupational health professionals should assist:

- i. employers in fulfilling their obligations of due care towards the health and safety of the workers in their employment;
- ii. workers in protecting and promoting their health in relation to work and in maintaining their working capacity;
- iii. workers' representatives and the joint safety and health committees, where they exist, to fulfil their tasks.

6.22. Medical confidentiality with regard to communications on conclusions of workers' health assessments should be strictly observed in accordance with national practice and recognized ethical guidelines. Occupational health professionals should take all necessary measures to prevent the results of a medical examination being used for other than the intended purpose and to ensure that medical confidentiality is fully respected.

6.23. Occupational health professionals, in coordination with the management system of the workplace, should

notify the competent authority of occupational accidents and diseases, in conformity with professional ethics, if required to do so by national law. They should provide appropriate information in this respect to employers and workers, their representatives, and the joint health and safety committees, where they exist, so that the reoccurrence of similar cases can be prevented and remedial action taken.

6.24. Occupational health professionals must acquire and maintain the competence necessary for their duties. They should consult or seek further expertise whenever necessary. They should be fully conversant with the respective conditions of work in order to match them with an individual worker's state of health and to make a sound decision on whether a worker is fit to undertake a specific job.

6.25. Medical examinations of workers should be carried out only by a physician or a nurse under the former's responsibility. Health assessments of workers should be made by health professionals or within the framework of recognized occupational health services and under the supervision of a physician.

6.26. Within the framework of their broad mandate to take care of workers' health in the enterprise, occupational health professionals should have the right to request, when necessary, health assessments in addition to the minimum requirements of national laws and regulations.

6.27. Occupational health professionals have a special responsibility in preserving and safeguarding their professional independence in all circumstances, including by having a clause on ethics inserted in their contract of employment. Competent authorities should have an appeal procedure in the case of conflict between an occupational health professional and his or her employer. Occupational health professionals should have the right to contact the competent authority if necessary (duty of alert) and must preserve this right and exercise it in an impartial and responsible manner.

6.28. Occupational health professionals should regularly examine their occupational health practice on technical or ethical grounds. They should contribute to the establishment of referral systems and provide assistance to workers who need to benefit from further expertise or wish to appeal against a decision. Their professional associations should adopt national codes of ethics, taking into account the guidance given at the international level and they should encourage their use and enforcement.

6.29. Occupational health professionals should have the duty to maintain a network of connections so as to facilitate multidisciplinary cooperation (safety, medicine, hygiene, ergonomics, etc.) and to provide workers with comprehensive occupational health care (prevention, rehabilitation, treatment, compensation).

6.30. Occupational health professionals should establish links between the workers' health surveillance targeted at specific hazards, specific diseases in specific groups of workers (hypertension, cardiovascular diseases, low back pain, breast and colon cancer), health promotion programmes for workers, including medical check-ups (smoking and alcohol consumption, physical exercise), environmental health programmes and research in occupational health. Occupational health professionals should report objectively to the scientific community on the new findings of workers' health surveillance when appropriate. Occupational health epidemiological research should be linked to workers' health surveillance. Guidelines for biomedical research involving human subjects should apply to research in occupational health.

## Glossary

**Occupational safety and health** is identified as the discipline dealing with the prevention of work-related injuries and diseases as well as the protection and promotion of the health of workers. It aims at the improvement of working conditions and environment. Members of many different professions (e.g. engineers, physicians, hygienists, nurses) contribute to *occupational safety, occupational health, occupational hygiene and improvement of the working environment*.

**Occupational health care** refers to the care of the health of workers. It includes preventive health care, health promotion, curative health care, first aid, rehabilitation and compensation, where appropriate, as well as strategies for prompt recovery and return to work.

**Health professionals** are persons who have been accredited through appropriate procedures to practise a profession in health (e.g. medicine, nursing).

**Occupational health professionals** are persons who have been accredited through appropriate procedures to practise a profession related to occupational health or who provide occupational health services according to the provisions of relevant regulations. Occupational health professionals include all those who by profession carry out occupational safety and health activities, provide occupational health services or who are involved in occupational health practice, even if only occasionally. They may be occupational health physicians, nurses, occupational safety and health inspectors, occupational hygienists, occupational psychologists and specialists involved in ergonomics, accident prevention and the improvement of the working environment, as well as in occupational health and safety research. Many others, in addition to occupational health and safety professionals, are involved in the protection and promotion of the health of workers, e.g. management and workers' representatives.

**Medical data** are those data collected for medical purposes, i.e. for the purpose of practising medicine; such data are those collected by a physician or by a health professional (for instance, a nurse or a paramedic) working under a physician's responsibility and should only be used for medical purposes.

**Occupational health data** are those data collected for occupational health purposes; such data are collected by an occupational health professional, as defined in this document. Minimum requirements should be established with regard to sensitive health data which should be covered by medical confidentiality.

**Personal data** are any information related to an identified or identifiable person; minimum requirements for confidentiality should be established for health data.

**Health** is defined in the Preamble of the Constitution of the WHO as *a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*. In 1978, WHO-EURO (Copenhagen) referred to health as a dynamic process which depends largely on the individual capacity to adapt to the environment; to be healthy means to maintain an intellectual and social activity despite any disorders or handicaps.

**Occupational health:** Since 1950, the ILO and WHO have had a common definition of occupational health. This definition was adopted by the Joint ILO/WHO Committee on Occupational Health at its First Session (1950) and revised at its 12th Session (1995):

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.

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.

**Surveillance** is the ongoing and systematic collection, analysis and interpretation of data and the appropriate dissemination of such data. Occupational health surveillance is the ongoing systematic collection, analysis, interpretation, and dissemination of data for the purpose of prevention. Surveillance is essential to the planning, implementation and evaluation of occupational health programmes and control of work-related ill health and injuries and the protection and promotion of workers' health. Occupational health surveillance includes workers' health surveillance and working environment surveillance.

**Occupational health surveillance system** is a system which includes a functional capacity for data collection, analysis and dissemination linked to occupational health programmes. It refers to all activities at individual, group, enterprise, community, regional and country levels to detect and assess any significant departure from health caused by working conditions and to monitor workers' general health. Occupational health surveillance programmes record instances of occupational exposures or work-related illness, injury or death and monitor

trends in their occurrences across different types of economic activities, over time, and between geographical areas.

**Workers' health surveillance** is a generic term which covers procedures and investigations to assess workers' health in order to detect and identify any abnormality. The results of surveillance should be used to protect and promote the health of the individual, collective health at the workplace, and the health of the exposed working population. Health assessment procedures may include, but are not limited to, medical examinations, biological monitoring, radiological examinations, questionnaires or a review of health records.

**Surveillance of the working environment** is a generic term which includes the identification and evaluation of environmental factors which may affect workers' health. It covers assessments of sanitary and occupational hygiene conditions, factors in the organization of work which may pose risks to the health of workers, collective and personal protective equipment, exposure of workers to hazardous agents and control systems designed to eliminate and reduce them. From the standpoint of workers' health, the surveillance of the working environment may focus on, but not be limited to, ergonomics, accident and disease prevention, occupational hygiene in the workplace, work organization, and psycho-social factors in the workplace.

## Annex 1

The [Occupational Health Services Convention, 1985 \(No.161\)](#)

## Annex 2

The [Occupational Health Services Recommendation, 1985 \(No.171\)](#)

## Annex 3

### Schedule 1: List of occupational diseases (amended 1980)\*

#### Occupational diseases

##### Work involving exposure to risk

1. Pneumoconioses caused by sclerogenic mineral dust (silicosis, anthraco-silicosis, asbestosis) and silico-tuberculosis, provided that silicosis is an essential factor in causing the resultant incapacity or death  
All work involving exposure to the risk concerned
2. Bronchopulmonary diseases caused by hard-metal dust
3. Bronchopulmonary diseases caused by cotton dust (byssinosis) or flax, hemp or sisal
4. Occupational asthma caused by sensitizing agents or irritants both recognized in this regard and inherent in the work process
5. Extrinsic allergic alveolitis and its sequelae caused by the inhalation of organic c as prescribed by national legislation
6. Diseases caused by beryllium or its toxic compounds
7. Diseases caused by cadmium or its toxic compounds
8. Diseases caused by phosphorus or its toxic compounds
9. Diseases caused by chromium or its toxic compounds
10. Diseases caused by manganese or its toxic compounds
11. Diseases caused by arsenic or its toxic compounds
12. Diseases caused by mercury or its toxic compounds
13. Diseases caused by lead or its toxic compounds
14. Diseases caused by fluorine or its toxic compounds
15. Diseases caused by carbon disulphide
16. Diseases caused by the toxic halogen derivatives of aliphatic or aromatic hydrocarbo
17. Diseases caused by benzene or its toxic homologues
18. Diseases caused by toxic nitro- and amino-derivatives of benzene or its homologues

19. Diseases caused by nitroglycerin or other nitric acid esters
20. Diseases caused by alcohols, glycols or ketones
21. Diseases caused by asphyxiants: Carbon monoxide, hydrogen cyanide or its toxic derivatives, hydrogen sulphide
22. Hearing impairment caused by noise All work involving exposure to the risk concerned
23. Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral blood vessels or peripheral nerves)
24. Diseases caused by work in compressed air
25. Diseases caused by ionizing radiations  
All work involving exposure to the action of ionizing radiations
26. Skin diseases caused by physical, chemical or biological agents  
not included under other items  
All work involving exposure to the risk concerned
27. Primary epitheliomatous cancer of the skin caused by tar, pitch, bitumen, mineral oil, anthracene, or the compounds, products or residues of these substances
28. Lung cancer or mesotheliomas caused by asbestos
29. Infectious or parasitic diseases contracted in an occupation  
where there is a particular risk of contamination
  - (a) Health or laboratory work
  - (b) Veterinary work
  - (c) Work handling animals, animal carcasses, parts of such carcasses, or merchandise which may have been contaminated by animals, animal carcasses, or parts of such carcasses
  - (d) Other work carrying a particular risk of contamination

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#### [Footnotes]

- Schedule 1 to the [Employment Injury Benefits Convention, 1964 \(No. 121\)](#).
  - In the application of this Schedule the degree and type of exposure should be taken into account when appropriate.
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#### Annex 4

##### Proposed list of occupational diseases\*\*

1. Diseases caused by agents
  - 1.1 Diseases caused by chemical agents
    - 1.1.1 Diseases caused by beryllium or its toxic compounds
    - 1.1.2 Diseases caused by cadmium or its toxic compounds
    - 1.1.3 Diseases caused by phosphorus or its toxic compounds
    - 1.1.4 Diseases caused by chromium or its toxic compounds
    - 1.1.5 Diseases caused by manganese or its toxic compounds
    - 1.1.6 Diseases caused by arsenic or its toxic compounds
    - 1.1.7 Diseases caused by mercury or its toxic compounds
    - 1.1.8 Diseases caused by lead or its toxic compounds
    - 1.1.9 Diseases caused by fluorine or its toxic compounds
    - 1.1.10 Diseases caused by carbon disulphide
    - 1.1.11 Diseases caused by the toxic halogen derivatives of aliphatic or aromatic hydrocarbons
    - 1.1.12 Diseases caused by benzene or its toxic homologues
    - 1.1.13 Diseases caused by toxic nitro- and amino-derivatives of benzene or its homologues
    - 1.1.14 Diseases caused by nitroglycerine or other nitric acid esters
    - 1.1.15 Diseases caused by alcohols, glycols or ketones

- 1.1.16 Diseases caused by asphyxiants: carbon monoxide, hydrogen cyanide or its toxic derivatives, hydrogen sulphide
- 1.1.17 Diseases caused by acrylonitrile
- 1.1.18 Diseases caused by oxides of nitrogen
- 1.1.19 Diseases caused by vanadium or its toxic compounds
- 1.1.20 Diseases caused by antimony or its toxic compounds
- 1.1.21 Diseases caused by hexane
- 1.1.22 Diseases of teeth due to mineral acids
- 1.1.23 Diseases due to pharmaceutical agents
- 1.1.24 Diseases due to thallium or its compounds
- 1.1.25 Diseases due to osmium or its compounds
- 1.1.26 Diseases due to selenium or its compounds
- 1.1.27 Diseases due to copper or its compounds
- 1.1.28 Diseases due to tin or its compounds
- 1.1.29 Diseases due to zinc or its compounds
- 1.1.30 Diseases due to ozone, phosgene
- 1.1.31 Diseases due to irritants: benzo quinone and other corneal irritants
- 1.1.32 Diseases caused by any other chemical agents not mentioned in the preceding items 1.1.1 to 1.1.31, where a link between the exposure of a worker to these chemical agents and the diseases suffered is established
- 1.2 Diseases caused by physical agents
  - 1.2.1 Hearing impairment caused by noise
  - 1.2.2 Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral blood vessels or peripheral nerves)
  - 1.2.3 Diseases caused by work in compressed air
  - 1.2.4 Diseases caused by ionizing radiations
  - 1.2.5 Diseases caused by heat radiation
  - 1.2.6 Diseases caused by ultraviolet radiation
  - 1.2.7 Diseases due to extreme temperature (e.g. sunstroke, frostbite)
  - 1.2.8 Diseases caused by any other physical agents not mentioned in the preceding items 1.2.1 to 1.2.7, where a direct link between the exposure of a worker to these physical agents and the diseases suffered is established
- 1.3 Biological agents
  - 1.3.1 Infectious or parasitic diseases contracted in an occupation where there is a particular risk of contamination
- 2. Diseases by target organ systems
  - 2.1 Occupational respiratory diseases
    - 2.1.1 Pneumoconioses caused by sclerogenic mineral dust (silicosis, anthraco-silicosis, asbestosis) and silicotuberculosis, provided that silicosis is an essential factor in causing the resultant incapacity or death
    - 2.1.2 Bronchopulmonary diseases caused by hard metal dust
    - 2.1.3 Bronchopulmonary diseases caused by cotton, flax, hemp or sisal dust (byssinosis)
    - 2.1.4 Occupational asthma caused by recognized sensitizing agents or irritants inherent to the work process
    - 2.1.5 Extrinsic allergic alveolitis caused by the inhalation of organic dusts as prescribed by national legislation 2.1.6 Siderosis
    - 2.1.7 Chronic obstructive pulmonary diseases
    - 2.1.8 Diseases of lung, due to aluminium
    - 2.1.9 Upper airways disorders caused by recognized sensitizing agents or irritants inherent to the work process
    - 2.1.10 Any other respiratory disease not mentioned in the preceding items 2.1.1 to 2.1.9, caused by an agent where a direct link between the exposure of a worker to this agent and the disease suffered is established
  - 2.2 Occupational skin diseases
    - 2.2.1 Skin diseases caused by physical, chemical or biological agents not included under 2.2.2
    - 2.2.2 Occupational vitiligo
  - 2.3 Occupational musculo-skeletal disorders
    - 2.3.1 Musculo-skeletal diseases caused by specific work activities or

work environment where particular risk factors are present

Examples of such activities or environment include:

- (a) rapid or repetitive motion
- (b) forceful exertion
- (c) excessive mechanical force concentration
- (d) awkward or non-neutral postures
- (e) vibration Local or environmental cold may potentiate risk

3. Occupational cancer

3.1 Cancer caused by the following agents:

- 3.1.1 Asbestos
- 3.1.2 Benzidine and salts
- 3.1.3 Bis chloromethyl ether (BCME)
- 3.1.4 Chromium and chromium compounds
- 3.1.5 Coal tars and coal tar pitches; soot
- 3.1.6 Betanaphthylamine
- 3.1.7 Vinyl chloride
- 3.1.8 Benzene or its toxic homologues
- 3.1.9 Toxic nitro- and amino-derivatives of benzene or its homologues
- 3.1.10 Ionizing radiations
- 3.1.11 Tar, pitch, bitumen, mineral oil, anthracene, or the compounds, products or residues of these substances
- 3.1.12 Coke oven emissions
- 3.1.13 Compounds of nickel
- 3.1.14 Dust from wood
- 3.1.15 Cancer caused by any other agents not mentioned in the preceding items 3.1.1 to 3.1.14, where a direct link between the exposure of a worker to this agent and the cancer suffered is established

4. Others

- 4.1 Miners' nystagmus

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**Footnote**

- As indicated in the ILO Code of Practice on the Protection of Workers' Personal Data, *genetic screening should be prohibited or limited to cases explicitly authorized by national legislation.*

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List of occupational diseases proposed by the Informal Consultation on the Revision of the List of Occupational Diseases, appended to the [Employment Injury Benefits Convention, 1964 \(No. 121\)](#), Geneva, 9-12 Dec. 1991.

Updated by EC. It was approved by JT. It was last updated on 18 May 1998.

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