



OCCUPATIONAL
SAFETY **72** AND HEALTH
SERIES

TECHNICAL AND ETHICAL GUIDELINES FOR WORKERS' HEALTH SURVEILLANCE



INTERNATIONAL LABOUR OFFICE · GENEVA



The International Programme for the Improvement of Working Conditions and Environment (PIACT) was launched by the International Labour Organization in 1976 at the request of the International Labour Conference and after extensive consultations with member States.

PIACT is designed to promote or support action by member States to set and attain definite objectives aiming at "making work more human". The Programme is thus concerned with improving the quality of working life in all its aspects: for example, the prevention of occupational accidents and diseases, a wider application of the principles of ergonomics, the arrangement of working time, the improvement of the content and organization of work and of conditions of work in general, and a greater concern for the human element in the transfer of technology. To achieve these aims, PIACT makes use of and coordinates the traditional means of ILO action, including:

- the preparation and revision of international labour standards;
- operational activities, including the dispatch of multidisciplinary teams to assist member States on request;
- tripartite meetings between representatives of governments, employers and workers, including industrial committees to study the problems facing major industries, regional meetings and meetings of experts;
- action-oriented studies and research; and
- clearing-house activities, especially through the International Occupational Safety and Health Information Centre (CIS) and the Clearing-house for the Dissemination of Information on Conditions of Work.

This publication is the outcome of a PIACT project.

**Technical and ethical guidelines
for workers' health surveillance**

OCCUPATIONAL SAFETY AND HEALTH SERIES No. 72

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First published 1998

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ILO

Technical and ethical guidelines for workers' health surveillance (OSH No. 72)

Geneva, International Labour Office, 1998 (Occupational Safety and Health Series No. 72)

/Guide/, /Occupational health service/, /Occupational health/, /Medical examination/, /Data collection/, /Confidentiality/. 13.04.2

ISBN 92-2-110828-7

Also published in French: *Principes techniques et éthiques de la surveillance de la santé des travailleurs: Principes directeurs* (ISBN 92-2-210828-0);
and in Spanish: *Principios directivos técnicos y éticos relativos a la vigilancia de la salud de los trabajadores* (ISBN 92-2-310828-4)

ILO Cataloguing in Publication Data

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Preface

Health data are of a sensitive nature. Inappropriate or inaccurate collection of health information can have serious and long-lasting consequences for individual workers. Some kinds of health assessments, tests and investigations may not be justified from an occupational health point of view, and may represent an unwarranted intrusion into the private life of the individual worker. They may also introduce discrimination based on health findings into the workplace. Thus, it is of great importance that health-related information is collected, processed and used in a well-controlled system that will protect the privacy of workers, as well as to ensure that health surveillance is not utilized for discriminatory purposes, or used in any other manner prejudicial to their interests.

Major fluctuations have occurred in employment patterns in recent years, due to rapid changes in technology, the development of the tertiary and other sectors and an increasingly competitive environment. These changes in turn have led to an increasing number of precarious and temporary workers, as well as epidemics of musculoskeletal disorders and occupational stress. Much has also changed in the health sector. For example, some newly developed and sophisticated means for conducting investigations – like genetic screening – could infringe workers' privacy. All these developments call for good practice in workers' health surveillance from a technical, ethical, social and economic point of view.

The surveillance of workers' health has to be designed and established to meet challenges arising from this new and rapidly changing environment. Workers' health surveillance should be an essential component of programmes aimed at the protection of workers, and such programmes should be able to provide medical examinations prescribed by legislation. It is a means to implement preventive action, as there are diseases caused by work which have to be identified, treated and compensated. There is an obvious need for a well-designed workers' health surveillance system which would provide information essential for the effective organization and implementation of occupational health services, in order to reduce the burden and the cost of diseases in relation to work, and to prevent any misuse of the information.

The purpose of these guidelines is to assist all those who have responsibilities to design, establish, implement and manage workers' health surveillance schemes that will facilitate preventive action towards ensuring a healthy and safe working environment for all. As ILO guidelines, they are not a legally binding document; rather, they constitute practical recommendations. These guidelines do not replace national laws, regulations, international labour standards or other accepted standards. Local circumstances and the availability of financial and technical resources will determine how far it is practicable to follow the provisions of the guidelines. These provisions are considered to be the basic requirements for the surveillance of workers' health, and are not intended to discourage competent authorities from adopting higher standards. The guidelines can be used in the development of legislation, regulations, collective agreements, work rules, policies and practical measures at enterprise level on workers' health surveillance. They are of particular relevance to competent authorities, other governmental or public authorities such as public health departments and social security institutions, employers and workers, and their organizations.

These guidelines were adopted by an ILO Meeting of Experts on Workers' Health Surveillance, convened in Geneva from 2 to 9 September 1997 in accordance with the decision taken by the Governing Body of the ILO at its 267th Session (November 1996). The meeting was composed of 18 experts, six of whom were appointed following consultations with governments, and six each following consultations with the Employers' and Workers' groups of the Governing Body.¹

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International Confederation of Free Trade Unions (ICFTU).
International Organization of Employers (IOE).
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The meeting concluded that there should be a clear linkage between workers' health surveillance and workplace control measures. It was stressed that workers' health surveillance, in itself, would not prevent injuries and diseases. Health surveillance was not an independent answer, but it was a useful complement to guide preventive action. It had to be placed in the right perspective, which was the elimination of dangerous machinery, equipment and conditions as well as the improvement of working conditions and environment.

The experts stressed that the emphasis should be placed on primary prevention, defined in terms of occupational safety and health policies combined with engineering design and control measures. The removal of unfit workers from employment, or the rotation and "protective reassignment" of workers according to the traditional medical model, constitute secondary prevention and should not be understood as primary prevention. It was, however, noted that, because of different stages of development in different countries, safer technologies could not always be introduced immediately. Therefore, protection of workers' health through secondary prevention was still needed in some cases.

The experts indicated that workers' health surveillance was necessary for preventive purposes at the workplace level. Its focus should be on the surveillance of health in relation to work. However, its scope and purpose should be broad enough to elicit and address new problems, in addition to the occupational health issues which are already known. It was pointed out that medical examinations and workers' health surveillance had to be observed and used at two levels: individual and collective.

The meeting recommended that the ILO and the WHO should publicize the Guidelines and promote education and training in this respect, giving examples of good and poor practice.

The Governing Body of the ILO approved the publication and distribution of the Guidelines at its 270th Session (November 1997).

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Introduction

1.1. In the past, medical examinations were considered to be the starting-point of any programme for the protection of the health of a working community. 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 injury, poisoning and disease during the first quarter of the twentieth 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 the twentieth 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 well as for specific occupations. Subsequently, it was extended to all workers in a number of countries, for example France and Japan. Medical examinations were carried out by certified or approved physicians in some countries, or by any physician in other countries. Later, the trend was to create a medical service at the workplace, where such medical examinations were carried out as one of its functions. These medical services usually had other functions, such as treating work injuries or taking care of workers' health in general (curative and preventive aspects). During the second half of the twentieth century, preventive occupational medicine and occupational health services were developed and institutionalized.

1.3. Diseases caused by work had to be identified, 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 (for example, the total health of workers and multidisciplinary approaches) as well as on values (primary health care, and human and workers' rights) and organizational aspects that are conducive to sound practice from a technical, ethical, social and economic point of view.

1.4. The situation and the needs have changed over time. The concept of occupational health was redefined by the Joint ILO/WHO Committee on Occupational Health, at its 12th Session in 1995 (see Glossary). Expectations are different now. Some health surveillance programmes were poorly understood or ill-advised: their purposes and benefits were not always clearly expressed. The purpose of health surveillance needs to be clarified and its organization reassessed. Under these new circumstances the ILO convened a tripartite Meeting of Experts on Workers' Health Surveillance, which used the new definition as a starting-point for discussions.

General principles and purposes

2.1. These 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 programme on health surveillance at a workplace 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's Occupational Health Services Convention, 1985 (No. 161), and Recommendation (No. 171) (see Appendices 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 must identify 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 socio-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 studies, 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.

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, and the awareness of workers and employers of the functions and purposes of such surveillance as well as 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 (see Glossary), 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; and
- (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-needed 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 of health maintenance; and
- (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 injuries/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 to 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; and
- (vi) prevent the total exclusion of any worker from employment, and 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 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 the latter with safer materials or 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 using medical examinations may be desirable for people 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 also 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 they 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 exposures – 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 the lowest 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 they 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 for 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.¹

¹ As indicated in *Protection of workers' personal data: An ILO code of practice* (Geneva, ILO, 1997), "genetic screening should be prohibited or limited to cases explicitly authorized by national legislation".

Sickness monitoring

3.21. Monitoring sickness absence can help to 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 of sickness cases while medical confidentiality is respected. Occupational health professionals should not be required by the employer to verify the reasons for 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. *Recording and notification of occupational accidents and diseases: An ILO code of practice* (Geneva, ILO, 1996) 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, as well as for identifying high-risk jobs, occupations and activities for follow-up action.

3.26. The widespread underestimation (due to non-reporting or underreporting) 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 work-related, but might be. 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 aetiology 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 incidences across occupational and industry groups. The data can be used to identify areas for concern which require further investigation and to 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 deaths or births 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. Results of laboratory tests 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 could 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 – the national health survey and labour force survey – 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.

Collection, processing and communication of health-related data

4.1. *Protection of workers' personal data:* An ILO code of practice 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 the use 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 professional 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 that takes judicious account of the need to protect health and to maintain employment.

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 type of 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 considered to 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 oversimplification 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 alternative employment is provided, it should be consistent with the state of the worker's health and not likely to impede or retard recovery.

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 their accompanying Recommendations (Nos. 164 and 171).

6.2. Such a policy should: be supported by laws and regulations and by 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 of 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), as amended in 1980 in accordance with Article 31 of the Convention, and should preferably be expanded to include the occupational diseases mentioned in Annex B of *Recording and notification of occupational accidents and diseases: An ILO code of practice*, 1996 (see Appendices 3 and 4 of these guidelines, respectively).

6.8. The competent authority should adopt provisions 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 with 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 to 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 in order 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 to 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 purposes other than those intended, 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 recurrence 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 particular groups of workers (hypertension, cardiovascular diseases, low back pain, breast and colon cancer), health promotion programmes for workers, including medical check-ups (concerning, inter alia, smoking and alcohol consumption, physical exercise, etc.), 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

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.

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

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 they should only be used for medical purposes.

Occupational health: Since 1950, the ILO and the 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 (Geneva, November 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 workers in an occupational environment adapted to their physiological and psychological capabilities; and, to summarize, the adaptation of work to the workers and of each worker to his or her 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 the productivity of the enterprises. The concept of working culture is intended in this context to mean a reflection of the essential value systems adopted by the enterprise concerned. Such a culture is reflected in practice in the managerial systems, personnel policy, principles for participation, training policies and quality management of the enterprise.

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.

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.

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.

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 to the control of work-related ill health and injuries, as well as to the protection and promotion of workers' health. Occupational health surveillance includes workers' health surveillance and working environment surveillance.

Occupational health surveillance systems are systems which include 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.

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".

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

Sentinel events are designed to identify high-risk jobs and activities with regard to occupational health, as well as to provide pointers towards the aetiology of diseases.

Surveillance is the ongoing and systematic collection, analysis and interpretation of data and the appropriate dissemination of such data.

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 psychosocial factors in the workplace.

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.

Appendix 1

Occupational Health Services Convention, 1985 (No. 161)

The General Conference of the International Labour Organisation,

Having been convened at Geneva by the Governing Body of the International Labour Office, and having met in its Seventy-first Session on 7 June 1985, and

Noting that the protection of the worker against sickness, disease and injury arising out of his employment is one of the tasks assigned to the International Labour Organisation under its Constitution,

Noting the relevant international labour Conventions and Recommendations, and in particular the Protection of Workers' Health Recommendation, 1953, the Occupational Health Services Recommendation, 1959, the Workers' Representatives Convention, 1971, and the Occupational Safety and Health Convention and Recommendation, 1981, which establish the principles of national policy and action at the national level,

Having decided upon the adoption of certain proposals with regard to occupational health services, which is the fourth item on the agenda of the session, and

Having determined that these proposals shall take the form of an international Convention;

adopts this twenty-sixth day of June of the year one thousand nine hundred and eighty-five the following Convention, which may be cited as the Occupational Health Services Convention, 1985:

PART I. PRINCIPLES OF NATIONAL POLICY

Article 1

For the purpose of this Convention –

- (a) the term "occupational health services" means services entrusted with essentially preventive functions and responsible for advising the employer, the workers and their representatives in the undertaking on –
 - (i) the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work;
 - (ii) the adaptation of work to the capabilities of workers in the light of their state of physical and mental health;
- (b) the term "workers' representatives in the undertaking" means persons who are recognised as such under national law or practice.

Article 2

In the light of national conditions and practice and in consultation with the most representative organisations of employers and workers, where they exist, each Member shall formulate, implement and periodically review a coherent national policy on occupational health services.

Article 3

1. Each Member undertakes to develop progressively occupational health services for all workers, including those in the public sector and the members of production co-operatives, in all branches of economic activity and all undertakings. The provision made should be adequate and appropriate to the specific risks of the undertakings.

2. If occupational health services cannot be immediately established for all undertakings, each Member concerned shall draw up plans for the establishment of such services in consultation with the most representative organisations of employers and workers, where they exist.

3. Each Member concerned shall indicate, in the first report on the application of the Convention submitted under article 22 of the Constitution of the International Labour Organisation, the plans drawn up pursuant to paragraph 2 of this Article, and indicate in subsequent reports any progress in their application.

Article 4

The competent authority shall consult the most representative organisations of employers and workers, where they exist, on the measures to be taken to give effect to the provisions of this Convention.

PART II. FUNCTIONS

Article 5

Without prejudice to the responsibility of each employer for the health and safety of the workers in his employment, and with due regard to the necessity for the workers to participate in matters of occupational health and safety, occupational health services shall have such of the following functions as are adequate and appropriate to the occupational risks of the undertaking:

- (a) identification and assessment of the risks from health hazards in the workplace;
- (b) surveillance of the factors in the working environment and working practices which may affect workers' health, including sanitary installations, canteens and housing where these facilities are provided by the employer;
- (c) advice on planning and organisation of work, including the design of workplaces, on the choice, maintenance and condition of machinery and other equipment and on substances used in work;
- (d) participation in the development of programmes for the improvement of working practices as well as testing and evaluation of health aspects of new equipment;
- (e) advice on occupational health, safety and hygiene and on ergonomics and individual and collective protective equipment;
- (f) surveillance of workers' health in relation to work;
- (g) promoting the adaptation of work to the worker;
- (h) contribution to measures of vocational rehabilitation;
- (i) collaboration in providing information, training and education in the fields of occupational health and hygiene and ergonomics;
- (j) organising of first aid and emergency treatment;
- (k) participation in analysis of occupational accidents and occupational diseases.

PART III. ORGANISATION

Article 6

Provision shall be made for the establishment of occupational health services –

- (a) by laws or regulations; or
- (b) by collective agreements or as otherwise agreed upon by the employers and workers concerned; or
- (c) in any other manner approved by the competent authority after consultation with the representative organisations of employers and workers concerned.

Article 7

1. Occupational health services may be organised as a service for a single undertaking or as a service common to a number of undertakings, as appropriate.

2. In accordance with national conditions and practice, occupational health services may be organised by –

- (a) the undertakings or groups of undertakings concerned;
- (b) public authorities or official services;
- (c) social security institutions;
- (d) any other bodies authorised by the competent authority;
- (e) a combination of any of the above.

Article 8

The employer, the workers and their representatives, where they exist, shall co-operate and participate in the implementation of the organisational and other measures relating to occupational health services on an equitable basis.

PART IV. CONDITIONS OF OPERATION

Article 9

1. In accordance with national law and practice, occupational health services should be multidisciplinary. The composition of the personnel shall be determined by the nature of the duties to be performed.

2. Occupational health services shall carry out their functions in co-operation with the other services in the undertaking.

3. Measures shall be taken, in accordance with national law and practice, to ensure adequate co-operation and co-ordination between occupational health services and, as appropriate, other bodies concerned with the provision of health services.

Article 10

The personnel providing occupational health services shall enjoy full professional independence from employers, workers, and their representatives, where they exist, in relation to the functions listed in Article 5.

Article 11

The competent authority shall determine the qualifications required for the personnel providing occupational health services, according to the nature of the duties to be performed and in accordance with national law and practice.

Article 12

The surveillance of workers' health in relation to work shall involve no loss of earnings for them, shall be free of charge and shall take place as far as possible during working hours.

Article 13

All workers shall be informed of health hazards involved in their work.

Article 14

Occupational health services shall be informed by the employer and workers of any known factors and any suspected factors in the working environment which may affect the workers' health.

Article 15

Occupational health services shall be informed of occurrences of ill health amongst workers and absence from work for health reasons, in order to be able to identify whether there is any relation between the reasons for ill health or absence and any health hazards which may be present at the workplace. Personnel providing occupational health services shall not be required by the employer to verify the reasons for absence from work.

PART V. GENERAL PROVISIONS

Article 16

National laws or regulations shall designate the authority or authorities responsible both for supervising the operation of and for advising occupational health services once they have been established.

Article 17

The formal ratifications of this Convention shall be communicated to the Director-General of the International Labour Office for registration.

Article 18

1. This Convention shall be binding only upon those Members of the International Labour Organisation whose ratifications have been registered with the Director-General.
2. It shall come into force twelve months after the date on which the ratifications of two Members have been registered with the Director-General.
3. Thereafter, this Convention shall come into force for any Member twelve months after the date on which its ratification has been registered.

Article 19

1. A Member which has ratified this Convention may denounce it after the expiration of ten years from the date on which the Convention first comes into force, by an act communicated to the Director-General of the International Labour Office for registration. Such denunciation shall not take effect until one year after the date on which it is registered.

2. Each Member which has ratified this Convention and which does not, within the year following the expiration of the period of ten years mentioned in the preceding paragraph, exercise the right of denunciation provided for in this Article, will be bound for another period of ten years and, thereafter, may denounce this Convention at the expiration of each period of ten years under the terms provided for in this Article.

Article 20

1. The Director-General of the International Labour Office shall notify all Members of the International Labour Organisation of the registration of all ratifications and denunciations communicated to him by the Members of the Organisation.

2. When notifying the Members of the Organisation of the registration of the second ratification communicated to him, the Director-General shall draw the attention of the Members of the Organisation to the date upon which the Convention will come into force.

Article 21

The Director-General of the International Labour Office shall communicate to the Secretary-General of the United Nations for registration in accordance with Article 102 of the Charter of the United Nations full particulars of all ratifications and acts of denunciation registered by him in accordance with the provisions of the preceding Articles.

Article 22

At such times as it may consider necessary the Governing Body of the International Labour Office shall present to the General Conference a report on the working of this Convention and shall examine the desirability of placing on the agenda of the Conference the question of its revision in whole or in part.

Article 23

1. Should the Conference adopt a new Convention revising this Convention in whole or in part, then, unless the new Convention otherwise provides –

- (a) the ratification by a Member of the new revising Convention shall *ipso jure* involve the immediate denunciation of this Convention, notwithstanding the provisions of Article 19 above, if and when the new revising Convention shall have come into force;
- (b) as from the date when the new revising Convention comes into force this Convention shall cease to be open to ratification by the Members.

2. This Convention shall in any case remain in force in its actual form and content for those Members which have ratified it but have not ratified the revising Convention.

Article 24

The English and French versions of the text of this Convention are equally authoritative.

Appendix 2

Occupational Health Services Recommendation, 1985 (No. 171)

The General Conference of the International Labour Organisation,
Having been convened at Geneva by the Governing Body of the International Labour
Office, and having met in its Seventy-first Session on 7 June 1985, and

Noting that the protection of the worker against sickness, disease and injury arising out
of his employment is one of the tasks assigned to the International Labour
Organisation under its Constitution,

Noting the relevant international labour Conventions and Recommendations, and in
particular the Protection of Workers' Health Recommendation, 1953, the
Occupational Health Services Recommendation, 1959, the Workers'
Representatives Convention, 1971, and the Occupational Safety and Health
Convention and Recommendation, 1981, which establish the principles of
national policy and action at the national level, and the Tripartite Declaration of
Principles concerning Multinational Enterprises and Social Policy adopted by
the Governing Body of the International Labour Office,

Having decided upon the adoption of certain proposals with regard to occupational health
services, which is the fourth item on the agenda of the session, and

Having determined that proposals shall take the form of a Recommendation
supplementing the Occupational Health Services Convention, 1985;

adopts this twenty-sixth day of June of the year one thousand nine hundred and eighty-five the
following Recommendation, which may be cited as the Occupational Health Services
Recommendation, 1985:

I. PRINCIPLES OF NATIONAL POLICY

1. Each Member should, in the light of national conditions and practice and in
consultation with the most representative organisations of employers and workers, where they
exist, formulate, implement and periodically review a coherent national policy on occupational
health services, which should include general principles governing their functions, organisation
and operation.

2. (1) Each Member should develop progressively occupational health services for all
workers, including those in the public sector and the members of production co-operatives, in
all branches of economic activity and all undertakings. The provision made should be adequate
and appropriate to the specific health risks of the undertakings.

(2) Provision should also be made for such measures as may be necessary and
reasonably practicable to make available to self-employed persons protection analogous to that
provided for in the Occupational Health Services Convention, 1985, and in this
Recommendation.

II. FUNCTIONS

3. The role of occupational health services should be essentially preventive.

4. Occupational health services should establish a programme of activity adapted to the undertaking or undertakings they serve, taking into account in particular the occupational hazards in the working environment as well as the problems specific to the branches of economic activity concerned.

A. SURVEILLANCE OF THE WORKING ENVIRONMENT

5. (1) The surveillance of the working environment should include –

- (a) identification and evaluation of the environmental factors which may affect the workers' health;
- (b) assessment of conditions of occupational hygiene and factors in the organisation of work which may give rise to risks for the health of workers;
- (c) assessment of collective and personal protective equipment;
- (d) assessment where appropriate of exposure of workers to hazardous agents by valid and generally accepted monitoring methods;
- (e) assessment of control systems designed to eliminate or reduce exposure.

(2) Such surveillance should be carried out in liaison with the other technical services of the undertaking and in co-operation with the workers concerned and their representatives in the undertaking or the safety and health committee, where they exist.

6. (1) In accordance with national law and practice, data resulting from the surveillance of the working environment should be recorded in an appropriate manner and be available to the employer, the workers and their representatives in the undertaking concerned or the safety and health committee, where they exist.

(2) These data should be used on a confidential basis and solely to provide guidance and advice on measures to improve the working environment and the health and safety of workers.

(3) The competent authority should have access to these data. They may only be communicated by the occupational health service to others with the agreement of the employer and the workers or their representatives in the undertaking or the safety and health committee, where they exist.

7. The surveillance of the working environment should entail such visits by the personnel providing occupational health services as may be necessary to examine the factors in the working environment which may affect the workers' health, the environmental health conditions at the workplace and the working conditions.

8. Occupational health services should –

- (a) carry out monitoring of workers' exposure to special health hazards, when necessary;
- (b) supervise sanitary installations and other facilities for the workers, such as drinking water, canteens and living accommodation, when provided by the employer;
- (c) advise on the possible impact on the workers' health of the use of technologies;
- (d) participate in and advise on the selection of the equipment necessary for the personal protection of the workers against occupational hazards;
- (e) collaborate in job analysis and in the study of organisation and methods of work with a view to securing a better adaptation of work to the workers;
- (f) participate in the analysis of occupational accidents and occupational diseases and in accident prevention programmes.

9. Personnel providing occupational health services should, after informing the employer, workers and their representatives, where appropriate –

- (a) have free access to all workplaces and to the installations the undertaking provides for the workers;
- (b) have access to information concerning the processes, performance standards, products, materials and substances used or whose use is envisaged, subject to their preserving the confidentiality of any secret information they may learn which does not affect the health of workers;
- (c) be able to take for the purpose of analysis samples of products, materials and substances used or handled.

10. Occupational health services should be consulted concerning proposed modifications in the work processes or in the conditions of work liable to have an effect on the health or safety of workers.

B. SURVEILLANCE OF THE WORKERS' HEALTH

11. (1) Surveillance of the workers' health should include, in the cases and under the conditions specified by the competent authority, all assessments necessary to protect the health of the workers, which may include –

- (a) health assessment of workers before their assignment to specific tasks which may involve a danger to their health or that of others;
- (b) health assessment at periodic intervals during employment which involves exposure to a particular hazard to health;
- (c) health assessment on resumption of work after a prolonged absence for health reasons for the purpose of determining its possible occupational causes, of recommending appropriate action to protect the workers and of determining the worker's suitability for the job and needs for reassignment and rehabilitation;
- (d) health assessment on and after the termination of assignments involving hazards which might cause or contribute to future health impairment.

(2) Provisions should be adopted to protect the privacy of the workers and to ensure that health surveillance is not used for discriminatory purposes or in any other manner prejudicial to their interests.

12. (1) In the case of exposure of workers to specific occupational hazards, in addition to the health assessments provided for in Paragraph 11 of this Recommendation, the surveillance of the workers' health should include, where appropriate, any examinations and investigations which may be necessary to detect exposure levels and early biological effects and responses.

(2) When a valid and generally accepted method of biological monitoring of the workers' health for the early detection of the effects on health of exposure to specific occupational hazards exists, it may be used to identify workers who need a detailed medical examination, subject to the individual worker's consent.

13. Occupational health services should be informed of occurrences of ill health amongst workers and absences from work for health reasons, in order to be able to identify whether there is any relation between the reasons for ill health or absence and any health hazards which may be present at the workplace. Personnel providing occupational health services should not be required by the employer to verify the reasons for absence from work.

14. (1) Occupational health services should record data on workers' health in personal confidential health files. These files should also contain information on jobs held by the workers, on exposure to occupational hazards involved in their work, and on the results of any assessments of workers' exposure to these hazards.

(2) The personnel providing occupational health services should have access to personal health files only to the extent that the information contained in the files is relevant to the performance of their duties. Where the files contain personal information covered by medical confidentiality this access should be restricted to medical personnel.

(3) Personal data relating to health assessments may be communicated to others only with the informed consent of the worker concerned.

15. The conditions under which, and time during which, personal health files should be kept, the conditions under which they may be communicated or transferred and the measures necessary to keep them confidential, in particular when the information they contain is placed on computer, should be prescribed by national laws or regulations or by the competent authority or, in accordance with national practice, governed by recognised ethical guide-lines.

16. (1) On completing a prescribed medical examination for the purpose of determining fitness for work involving exposure to a particular hazard, the physician who has carried out the examination should communicate his conclusions in writing to both the worker and the employer.

(2) These conclusions should contain no information of a medical nature; they might, as appropriate, indicate fitness for the proposed assignment or specify the kinds of jobs and the conditions of work which are medically contra-indicated, either temporarily or permanently.

17. Where the continued employment of a worker in a particular job is contra-indicated for health reasons, the occupational health service should collaborate in efforts to find alternative employment for him in the undertaking, or another appropriate solution.

18. Where an occupational disease has been detected through the surveillance of the worker's health, it should be notified to the competent authority in accordance with national law and practice. The employer, workers and workers' representatives should be informed that this notification has been carried out.

C. INFORMATION, EDUCATION, TRAINING, ADVICE

19. Occupational health services should participate in designing and implementing programmes of information, education and training on health and hygiene in relation to work for the personnel of the undertaking.

20. Occupational health services should participate in the training and regular retraining of first-aid personnel and in the progressive and continuing training of all workers in the undertaking who contribute to occupational safety and health.

21. With a view to promoting the adaptation of work to the workers and improving the working conditions and environment, occupational health services should act as advisers on occupational health and hygiene and ergonomics to the employer, the workers and their representatives in the undertaking and the safety and health committee, where they exist, and should collaborate with bodies already operating as advisers in this field.

22. (1) Each worker should be informed in an adequate and appropriate manner of the health hazards involved in his work, of the results of the health examinations he has undergone and of the assessment of his health.

(2) Each worker should have the right to have corrected any data which are erroneous or which might lead to error.

(3) In addition, occupational health services should provide workers with personal advice concerning their health in relation to their work.

D. FIRST AID, TREATMENT AND HEALTH PROGRAMMES

23. Taking into account national law and practice, occupational health services in undertakings should provide first-aid and emergency treatment in cases of accident or indisposition of workers at the workplace and should collaborate in the organisation of first aid.

24. Taking into account the organisation of preventive medicine at the national level, occupational health services might, where possible and appropriate –

- (a) carry out immunisations in respect of biological hazards in the working environment;
- (b) take part in campaigns for the protection of health;
- (c) collaborate with the health authorities within the framework of public health programmes.

25. Taking into account national law and practice and after consultation with the most representative organisations of employers and workers, where they exist, the competent authority should, where necessary, authorise occupational health services, in agreement with all concerned, including the worker and his own doctor or a primary health care service, where applicable, to undertake or to participate in one or more of the following functions:

- (a) treatment of workers who have not stopped work or who have resumed work after an absence;
- (b) treatment of the victims of occupational accidents;
- (c) treatment of occupational diseases and of health impairment aggravated by work;
- (d) medical aspects of vocational re-education and rehabilitation.

26. Taking into account national law and practice concerning the organisation of health care, and distance from clinics, occupational health services might engage in other health activities, including curative medical care for workers and their families, as authorised by the competent authority in consultation with the most representative organisations of employers and workers, where they exist.

27. Occupational health services should co-operate with the other services concerned in the establishment of emergency plans for action in the case of major accidents.

E. OTHER FUNCTIONS

28. Occupational health services should analyse the results of the surveillance of the workers' health and of the working environment, as well as the results of biological monitoring and of personal monitoring of workers' exposure to occupational hazards, where they exist, with a view to assessing possible connections between exposure to occupational hazards and health impairment and to proposing measures for improving the working conditions and environment.

29. Occupational health services should draw up plans and reports at appropriate intervals concerning their activities and health conditions in the undertaking. These plans and reports should be made available to the employer and the workers' representatives in the undertaking or the safety and health committee, where they exist, and be available to the competent authority.

30. (1) Occupational health services, in consultation with the employers' and the workers' representatives, should contribute to research, within the limits of their resources, by participating in studies or inquiries in the undertaking or in the relevant branch of economic activity, for example, with a view to collecting data for epidemiological purposes and orienting their activities.

(2) The results of the measurements carried out in the working environment and of the assessments of the workers' health may be used for research purposes, subject to the provisions of Paragraphs 6 (3), 11 (2) and 14 (3) of this Recommendation.

31. Occupational health services should participate with other services in the undertaking, as appropriate, in measures to prevent its activities from having an adverse effect on the general environment.

III. ORGANISATION

32. Occupational health services should, as far as possible, be located within or near the place of employment, or should be organised in such a way as to ensure that their functions are carried out at the place of employment.

33. (1) The employer, the workers and their representatives, where they exist, should co-operate and participate in the implementation of the organisational and other measures relating to occupational health services on an equitable basis.

(2) In conformity with national conditions and practice, employers and workers or their representatives in the undertaking or the safety and health committee, where they exist, should participate in decisions affecting the organisation and operation of these services, including those relating to the employment of personnel and the planning of the service's programmes.

34. (1) Occupational health services may be organised as a service within a single undertaking or as a service common to a number of undertakings, as appropriate.

(2) In accordance with national conditions and practice, occupational health services may be organised by –

- (a) the undertakings or groups of undertakings concerned;
- (b) the public authorities or official services;
- (c) social security institutions;
- (d) any other bodies authorised by the competent authority;
- (e) a combination of any of the above.

(3) The competent authority should determine the circumstances in which, in the absence of an occupational health service, appropriate existing services may, as an interim measure, be recognised as authorised bodies in accordance with subparagraph 2 (d) of this Paragraph.

35. In situations where the competent authority, after consulting the representative organisations of employers and workers concerned, where they exist, has determined that the establishment of an occupational health service, or access to such a service, is impracticable, undertakings should, as an interim measure, make arrangements, after consulting the workers' representatives in the undertaking or the safety and health committee, where they exist, with a local medical service for carrying out the health examinations prescribed by national laws or regulations, providing surveillance of the environmental health conditions in the undertaking and ensuring that first-aid and emergency treatment are properly organised.

IV. CONDITIONS OF OPERATION

36. (1) In accordance with national law and practice, occupational health services should be made up of multidisciplinary teams whose composition should be determined by the nature of the duties to be performed.

(2) Occupational health services should have sufficient technical personnel with specialised training and experience in such fields as occupational medicine, occupational hygiene, ergonomics, occupational health nursing and other relevant fields. They should, as far as possible, keep themselves up to date with progress in the scientific and technical knowledge necessary to perform their duties and should be given the opportunity to do so without loss of earnings.

(3) The occupational health services should, in addition, have the necessary administrative personnel for their operation.

37. (1) The professional independence of the personnel providing occupational health services should be safeguarded. In accordance with national law and practice, this might be done through laws or regulations and appropriate consultations between the employer, the workers, and their representatives and the safety and health committees, where they exist.

(2) The competent authority should, where appropriate and in accordance with national law and practice, specify the conditions for the engagement and termination of employment of the personnel of occupational health services in consultation with the representative organisations of employers and workers concerned.

38. Each person who works in an occupational health service should be required to observe professional secrecy as regards both medical and technical information which may come to his knowledge in connection with his functions and the activities of the service, subject to such exceptions as may be provided for by national laws or regulations.

39. (1) The competent authority may prescribe standards for the premises and equipment necessary for occupational health services to exercise their functions.

(2) Occupational health services should have access to appropriate facilities for carrying out the analyses and tests necessary for surveillance of the workers' health and of the working environment.

40. (1) Within the framework of a multidisciplinary approach, occupational health services should collaborate with –

- (a) those services which are concerned with the safety of workers in the undertaking;
- (b) the various production units, or departments, in order to help them in formulating and implementing relevant preventive programmes;
- (c) the personnel department and other departments concerned;
- (d) the workers' representatives in the undertaking, workers' safety representatives and the safety and health committee, where they exist.

(2) Occupational health services and occupational safety services might be organised together, where appropriate.

41. Occupational health services should also, where necessary, have contacts with external services and bodies dealing with questions of health, hygiene, safety, vocational rehabilitation, retraining and reassignment, working conditions and the welfare of workers, as well as with inspection services and with the national body which has been designated to take part in the international occupational Safety and Health Hazard Alert System set up within the framework of the International Labour Organisation.

42. The person in charge of an occupational health service should be able, in accordance with the provisions of Paragraph 38, to consult the competent authority, after informing the employer and the workers' representatives in the undertaking or the safety and health committee, where they exist, on the implementation of occupational safety and health standards in the undertaking.

43. The occupational health services of a national or multinational enterprise with more than one establishment should provide the highest standard of services, without discrimination, to the workers in all its establishments, regardless of the place or country in which they are situated.

V. GENERAL PROVISIONS

44. (1) Within the framework of their responsibility for their employees' health and safety, employers should take all necessary measures to facilitate the execution of the duties of occupational health services.

(2) Workers and their organisations should provide support to the occupational health services in the execution of their duties.

45. The occupational health-related facilities provided by the occupational health services should not involve any expense to the worker.

46. In cases where occupational health services are established and their functions specified by national laws or regulations, the manner of financing these services should also be so determined.

47. For the purpose of this Recommendation the term "workers' representatives in the undertaking" means persons who are recognised as such under national law or practice.

48. This Recommendation, which supplements the Occupational Health Services Convention, 1985, supersedes the Occupational Health Services Recommendation, 1959.

Appendix 3

Schedule I from the Employment Injury Benefits Convention, 1964 (No. 121)

List of occupational diseases (amended 1980)¹

Occupational diseases	Work involving exposure to risk ²
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 dust	"
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 dusts, 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 hydrocarbons	"
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 nitroglycerine or other nitric acid esters	"
20. Diseases caused by alcohols, glycols or ketones	"

¹ Ed.: The original Schedule I to the Employment Injury Benefits Convention, 1964 (No. 121), was amended in 1980 in accordance with Article 31 of the Convention.

² In the application of this Schedule the degree and type of exposure should be taken into account when appropriate.

Schedule I from the Employment Injury Benefits Convention (No. 121)

Occupational diseases	Work involving exposure to risk ²
21. Diseases caused by asphyxiants: Carbon monoxide, hydrogen cyanide or its toxic derivatives, hydrogen sulphide	"
22. Hearing impairment caused by noise	"
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

Appendix 4

Proposed list of occupational diseases¹

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 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.

- 1.1.30 Diseases due to ozone, phosgene
- 1.1.31 Diseases due to irritants: benzoquinone 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, anthracosis, 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 the 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 other items
- 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) vibrationLocal 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. Other

4.1 Miners' nystagmus

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TECHNICAL AND ETHICAL GUIDELINES FOR WORKERS' HEALTH SURVEILLANCE

The purpose of workers' health surveillance required clarification and redefinition because of recent changes in occupational health, such as technical progress, more sophisticated means of investigation and greater emphasis on prevention, holistic approaches, primary health care, human rights and organizational aspects. Thus, using the new definition of occupational health adopted by the Joint ILO/WHO Committee on Occupational Health in 1995 as a starting point, a tripartite ILO Committee of Experts developed and then adopted these guidelines.

Workers' health surveillance, based on sound ethical and technical practice, must ensure workers' privacy and the confidentiality of individual health information, and the professional independence and impartiality of relevant health professionals. These guidelines are invaluable in the design, establishment, implementation and management of workers' health surveillance schemes, leading to a healthy and safe working environment for everyone. Although the competent authorities are free to adopt higher standards, these guidelines constitute basic requirements. They can serve the purpose of primary prevention of occupational and work-related diseases and injuries, and should be linked to other measures, such as monitoring occupational hazards through surveillance of the working environment. This book covers practical aspects of organizing workers' health surveillance and the collection, processing and communication of health-related data. Equally, it provides guidance on the use of such data and on the rights, responsibilities and duties of the different parties.

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