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WORLD HEALTH ORGANIZATION

TECHNICAL REPORT SERIES

No. 66

JOINT ILO/WHO COMMITTEE ON OCCUPATIONAL HEALTH

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WORLD HEALTH ORGANIZATION

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GENEVA

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JOINT ILO/WHO COMMITTEE ON OCCUPATIONAL HEALTH

Second Session

Geneva, 6-12 October 1952

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- Dr. A. Grut, Former Chief, Industrial Hygiene Division, ILO (*Joint Secretary*)
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The report on the second session of this committee was originally issued in mimeographed form as document WHO/Occ.Health/7, 24 October 1952.

The report on the first session is available only in mimeographed form as document WHO/Occ.Health/2, 15 September 1950.

JOINT ILO/WHO COMMITTEE ON OCCUPATIONAL HEALTH

Second Report ¹

The second session of the Joint ILO/WHO Committee on Occupational Health was held in Geneva from 6 to 12 October 1952.

Dr. W. Bonne, Acting Assistant Director-General of WHO, and Mr. R. Rao, Assistant Director-General of ILO, greeted the committee on behalf of the Directors-General of the two organizations and emphasized the questions of common interest to both organizations in promoting the health of workers in all countries.

Mr. J. J. Bloomfield and Professor L. Carozzi were elected Chairman and Vice-Chairman, respectively.

The agenda submitted by the Directors-General of ILO and WHO was discussed in detail and was adopted under the following main headings :

(1) Measures of general health protection of workers in places of employment (utilizing the latter as an avenue of approach to general health problems).

(2) Notification of occupational diseases.

(3) Organization of comprehensive health-service programmes in large and small plants, and in agricultural enterprises.

(4) Methods of co-operation between public-health and industrial health services and of implementation of existing industrial health legislation and standards.

Discussing the agenda, the Chairman pointed out that its scope and general content followed logically from the broad definition of occupational

¹ The Executive Board, at its eleventh session, adopted the following resolution :
The Executive Board

1. NOTES the report of the Joint ILO/WHO Committee on Occupational Health on its second session ;
2. THANKS the members of the committee for their work ;
3. THANKS the International Labour Organisation for its excellent collaboration ;
4. NOTES that the Governing Body of ILO has reviewed the report favourably, and
5. AUTHORIZES its publication and distribution.

(Resolution EB11.R16, *Off. Rec. World Hlth Org.* 46, 5)

health agreed upon at the first session of the committee in 1950. This was as follows :

“ 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 among workers of departures from health caused by their working conditions ; the protection of workers in their employment from risks resulting from factors adverse to health ; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological equipment and, to summarize : the adaptation of work to man and of each man to his job.”²

The Chairman also noted that, at its first session, the committee had called for close co-operation between ILO and WHO “ ... conducted in all fields and by the most suitable means, with a view to achieving in the shortest possible time and in the most effective manner the above-mentioned aims ”.² He observed that, in the two years since the first session, considerable collaboration had been effected between the two organizations, as evidenced not only by the planning of the second meeting of the joint committee, but also in the planning and effectuation of field projects in occupational health, seminars, and fellowships throughout the world.

It was explained that the agenda of the meeting was intended to cover those subjects which were believed to be appropriate for collaboration between ILO and WHO, and not those which were more particularly within the competence of one or other of the organizations. Hence, there was to be no provision for the discussion of methods of control of occupational diseases and accidents, since these are questions of special concern to ILO. Likewise, the discussion of general health promotion was to be focused on measures possible through the work environment and not through the total community public-health programme, which is the special concern of WHO.

It was agreed that all discussions and recommendations must take into account existing international and national laws and regulations.

1. Measures of General Health Protection of Workers in Places of Employment

Several special fields of public health were reviewed from the point of view of how they might be useful in promoting the health of workers through places of employment. It was recognized that effective action required close co-operation with community health agencies working on parallel problems. In all fields there is, generally, a common objective in countries throughout the world, but the techniques of achieving it must differ in view of different social, economic, and legislative frameworks.

² Unpublished working document WHO/Occ.Health/2, pp. 3, 7

1.1 Nutrition

The nutrition of workers must be a concern of occupational health programmes. The agreed objective is that all workers should be nourished adequately to meet their total health needs, including any special demands of their work and their total living needs.

The attainment of this objective is difficult and must follow different methods in different social and industrial situations. The method put forward as an ideal by some highly industrialized countries is that the worker should receive a sufficiently high wage to enable him to purchase an adequate diet for himself and his family. In practice, however, this ideal is not always achieved. Impediments may be economic, when wages are low; educational, when food habits are hygienically unsound; and geographical, when the place of work is at a great distance from the home and transportation is inadequate. However, industrial and agricultural establishments can often assist in the attainment of the objective by making special provision for meals for workers. They can also assist greatly by educating workers (and their families) about the composition of a balanced diet.

In many countries, the organization of canteens or industrial feeding-centres has proved useful in advancing the nutrition of the workers. In some more industrially developed countries national laws require that industrial establishments whose employees exceed a certain number shall provide canteens meeting minimum standards. The employer is expected to pay the cost of the installations, while the worker pays for the cost of the meals served. Subsidies may be granted to reduce the cost of meals.

In South America, some governmental agencies provide meals for workers at low cost in special restaurants. Simple, but basic, foods are provided with the intention of giving the worker essential nutrients. In economically underdeveloped countries, rations may be provided to men while they are on the job, these contributing a "payment in kind" in lieu of a part of the wages. For single men the complete meal may be provided; for married men "dry rations" which may be cooked and prepared by the family are supplied. In some countries, wages cannot be paid in kind because of the fear that such payment might be used as a subtle means of depressing wages. If payment is provided in the form of food, it is important that the food be such as is likely to help the worker in achieving a well-balanced diet.

Canteens provided by the employer are sometimes not used by the workers. It is a good principle to encourage representatives of the workers to participate in the planning and routine management of the canteen. In this way their wishes concerning the management of the canteen can be taken into consideration so that the workers are more likely to use its resources.

Caution must be exercised, however, to avoid simply "pleasing the customer" when his wishes may be based on unsound dietary habits. It is important to provide nutritious foods and to combine this action with education of the workers on the value of a balanced diet.

Education about sound nutrition must also be directed to the housewife who prepares the worker's meals. However, customs differ in different provinces, and even within communities, so that such educational campaigns cannot be nationally uniform: they must be adjusted to the food culture of each region.

In some industrial establishments, full meals may not be provided, but food supplements or between-meal snacks (especially on night shifts) are furnished. These should be calculated to advance nutrition and not simply to satisfy cravings for substances which are of low nutritional value. Workers should be educated not to consider these supplements as substitutes for full meals.

The need for feeding arrangements is especially great in regions where the employee works at a great distance from his home. If the worker carries his own lunch to work, provision should be made for a safe and uncontaminated place to store the food before it is eaten to avoid spoilage or contamination. Likewise, some place separate from the work-room should be provided so that the meal may be eaten in sanitary surroundings.

The design of canteens and eating facilities should be geared to the cultural preferences of the workers. Industry can often be assisted by the consultant services of trained nutritionists. These consultants can advise on ways of satisfying nutritional needs within the general framework of the workers' traditional eating-habits.

In planning a nutrition programme in industry, studies should first be made of the current practices and problems. Feeding activities and educational campaigns should be based on the findings of such studies, and not on mere theoretical assumptions.

Finally, much attention has been drawn to the supposed value of "protective foods" as a preventive of numerous industrial intoxications. It is to be emphasized that this approach is faulty and even dangerous. The prevention of poisoning should be attained by reducing the exposure of the worker through control of the environment. As for the assurance of good resistance in the worker, all that is needed is a well-balanced diet, and not extra quantities of special foods. Actual contamination of food with toxic substances must, of course, be avoided. This is true at the place of work and elsewhere.

The proper nutrition of workers cannot be assured by industry alone, but depends on the total economic and social situation. Nevertheless, industry can assist in gaining this end by the methods suggested, and the

results can be enjoyed in higher productivity. Governmental authorities concerned with occupational health can foster such activities by suitable efforts.

1.2 Communicable-disease control

The problems of communicable diseases among workers are complex and vary for each disease and in different regions. It is a general objective everywhere, however, to detect cases of communicable disease and to render them non-infectious to others by treatment or removal from the working environment, or both. This objective is especially important in industry, not only because there are hazards of infection of large numbers of persons in the working environment, but also because the place of employment provides valuable opportunities for the finding, treatment, and rehabilitation of cases.

In nearly all countries tuberculosis is a serious communicable disease among workers, and its control illustrates basic principles in the control of many other communicable diseases. Tuberculosis may sometimes be an occupational disease, as in the case of sanatorium or laboratory workers who are intimately exposed to the bacilli. It is a special hazard closely associated also with silicosis, asbestosis, and possibly other pneumoconioses. Much more often, however, tuberculosis is not an occupational disease; and its incidence is higher among certain workers because of their general mode of life, their poverty, poor housing, and inadequate diet, and their exposure in the community.

Nevertheless, important measures of tuberculosis control can be fostered in industrial establishments and can be very successful, and so assist in reducing the prevalence of the disease in the community. Case-finding can be promoted through mass chest radiographic studies. These may be performed by the plant medical service itself, or may be carried out by a public-health agency.

If cases of tuberculosis are detected, careful and adequate follow-up is necessary. Treatment should be secured for the affected workers. Family contacts, as well as contacts among the workers, should be periodically investigated. This calls for close liaison between management, workers, community health agencies, tuberculosis sanatoria, and physicians in the community. The reporting of cases of tuberculosis to the public-health authorities is usually required by law. This provides a basis for community and plant follow-up.

In mass chest radiographic-surveys, pathological conditions other than tuberculosis will often be found. It is important that appropriate referrals of such cases should be made to competent medical resources.

In certain areas, mass immunization against tuberculosis with BCG vaccine may be advisable.

When public-health authorities carry out mass case-finding or immunizations, these activities should always be done in close co-ordination with the plant medical service, where this exists. It must be recognized that mass screening is a supplementary measure and should never be a substitute for careful medical examinations by a physician.

For tuberculosis and other long-term illnesses which may incapacitate a worker, many countries provide disability insurance which protects his family's income. The plant medical service can co-operate by providing proper medical information on disabilities covered by such insurance.

After recovery and rehabilitation, appropriate resettlement is important. The precise placement of a worker, with regular medical follow-up, should be carefully made to avoid undue strains which might cause a new breakdown in his health.

Tuberculosis control is particularly important in industries with young workers, especially young women, among whom the incidence of the disease is high.

The confidentiality of medical information should be protected so long as proper public-health measures are taken to avoid the hazards of the spread of communicable disease.

With respect to other communicable diseases, somewhat similar measures of control are feasible in industry. For venereal disease, for example, case-finding can be done through mass serological tests, followed by medical examinations. Cases detected should be notified to the nearest community health agency for proper epidemiological follow-up, where legislation requires this notification. The individual should be treated or arrangements made for proper treatment. Individuals with venereal infection should not be denied employment or be discharged, provided that they are taking effective treatment and so long as they are fit for work.

There are certain communicable diseases associated particularly with certain types of employment, and their effective control is a major measure of occupational health service. In agricultural enterprises, this is especially true of malaria in many parts of the world.

At one time, the only effective malaria-control was, indeed, on plantations and in other agricultural establishments where elimination of mosquito-breeding, drug prophylaxis, and other measures were possible. Today, with DDT-spraying it is feasible to control malaria among larger population-groups. The co-operation of agricultural enterprises, however, is still useful.

With the new methods of malaria control, it is feasible to eliminate the disease at low cost, usually at about US \$0.15 per person per year in under-developed countries. For the general population, this cost is usually borne by the government, but on plantations it may properly be borne by the enterprise.

In some areas, other communicable diseases, such as typhoid or diphtheria, may create problems; and routine measures of public health must be applied to avoid their spread in industry. Special attention must be paid to carriers. For certain diseases, highly prevalent in some areas, effective treatment at low cost can be provided through the place of work. This applies to intestinal parasite-infestation, trachoma, and yaws, among others. For bilharzia infection, environmental measures to prevent its spread through water are desirable. In certain circumstances, immunizations against typhoid and paratyphoid fevers may be advisable.

Anthrax, undulant fever, and Q fever are examples of communicable diseases which may be of occupational origin. Their control calls for special sanitary precautions in the handling of working materials and substances, equivalent in many ways to the prevention of industrial poisonings.

All programmes to detect and treat communicable disease should be accompanied by educational efforts. The worker should be informed of the purpose of various examination procedures, and his willing co-operation in having the tests performed is better than compulsion. If a case is discovered, the individual worker should be informed of its meaning to him and his family.

These comments are by no means comprehensive, but they illustrate measures of communicable-disease control which may be effectively provided through places of work for the benefit of the worker, the industry, and the community as a whole.

1.3 Measures for women and children

In most countries, special measures are provided for the protection of the health of women and children, and industry can contribute to this general aim.

The protection of the health of pregnant women who are employed is of the first importance. Industrial establishments should help to assure that these women get adequate prenatal, confinement, and postnatal services. All or some of these services may be provided by an industrial medical service, a local health-agency, the private arrangements of the woman herself, a health-service insurance system, or in some other way.

Whatever the method of provision of essential maternity services, the industry should not merely help to arrange for their procurement. It should also assure that the woman is not penalized in her employment by

reason of her maternity state. Moreover, the assurance of leave from work, with financial benefits and job security, before and after confinement, is an important means of health protection of working women. An expectant mother should have the opportunity to transfer her job, within an enterprise, to one which will be suitable to her condition.

All employed women should be placed in jobs which are suitable to their physical abilities. In many countries there is special legislation limiting the maximum hours of work and conditions of night work for women. The application and enforcement of these measures are of fundamental importance to health. Adequate provisions should be made in industries for the health care of working women.

Married working women usually have duties in the maintenance of the home as well as their employment. The care of children is a special responsibility of such women. Where women with young children are compelled to work, the provision of properly supervised day-nurseries may be helpful. For the welfare of the growing child, every effort should be made to give the working mother maximum time for maternal contacts with him.

Child health can be protected most fundamentally through legislation which prohibits employment below a certain age-level. Thus, child-labour legislation is a health measure promoting proper mental and physical development.

Young persons should be medically examined before their employment to determine whether they are fit to work. They should be placed only in jobs within their physical and mental capacities. They should also be periodically re-examined to assure that their health is not being adversely affected.

Jobs which are specially hazardous are prohibited for women and young persons in certain countries.

Medical services within industry can advise workers, male and female, about the availability in the community of clinics and other services for the general advancement of maternal and child health.

Attention is called to the numerous Conventions and Recommendations of the International Labour Organisation affecting the health of women and young workers. The most recent instrument of importance is the Convention Concerning Maternity Protection adopted in 1952, but other instruments on special aspects of maternity protection, the health of children and young workers, and prohibitions against hazardous employment have been adopted from time to time since 1919.

If these Conventions or Recommendations are to be complied with by a country, special health services are, in many instances, required. The stipulation of medical standards for these services is a matter for action by

competent health authorities in each country. Areas of special need for health guidance are in relation to :

- (a) standards for medical examinations to determine the age of a young worker (since birth certificates are often unavailable) ;
- (b) standards for medical examinations to determine fitness for the work ;
- (c) evaluation of certain hazardous jobs with respect to their suitability for women and young workers.

Health authorities can assist labour authorities in protecting the health of women and children by the formulation of such standards. Likewise, labour authorities can advance community health by the enforcement of general measures for the welfare of women and young workers.

Measures of health and labour protection are intended to enable the worker to obtain and retain suitable work, and not to deny employment.

1.4 Mental health

Where the problem has been studied, psychoneuroses have been found to be a major cause of sickness absenteeism. Studies in Great Britain, the Netherlands, and elsewhere have demonstrated this, at least for highly industrialized cultures.

While there are many causes of mental disorder, there is evidence that, in industrialized societies, specialization of employment may be an aggravating or precipitating factor. Fragmentation of the job and the workman's loss of pride in craftsmanship have long been recognized as possible factors in mental and emotional difficulties. As a corollary, the attitude of work supervisors will influence the mental health of workers under them. In the selection of supervisors, therefore, as much attention should be paid to their capacity for human leadership as to their technical competence. Special training in human relations is important.

The objective of mental health activities is to promote the health and happiness of people at work. The most important way to reach this goal, however, is not the provision of psychiatric services, but the planning of work tasks and patterns of industrial organization which do not run counter to human emotional needs.

Attention to human relationships in the factory should be complemented by a concerted effort to educate each worker about the significance of the contribution to the total productive process. Group discussions may be of value.

An industrial health service can help to persuade management of the importance of these considerations for a reduction of absenteeism. Health authorities may be able to do likewise.

As a second line of attack, the plant medical service should examine workers with respect to their mental suitability to their work. Where industrial psychologists are available, they should co-operate in this placement programme.

The plant medical service can also help to bridge the gap between the home and the factory as it affects the worker's mental health and morale. The industrial nurse, especially, can help workers meet mild emotional problems, which may have roots in the home, on the job, or in both places.

Emotional disturbances play a major role in absenteeism. The lowest level of absenteeism, however, is not necessarily the optimal level from the viewpoint of sound health. Productivity and general community welfare may be greater with a rate of absenteeism somewhere above the lowest achievable level.

Special guidance is needed for the adolescent worker just entering industry. The industrial medical service can, by working with both employee and management, reduce mental problems. Attention to specific cases, with demonstration of benefits achieved by improved human relations or reformulation of the job, may lead to a deeper preventive programme through the reorganization of general work processes to fit human needs.

1.5 Environmental sanitation

Environmental sanitation has been defined as "the control of all those factors in man's physical environment which exercise or may exercise a deleterious effect on his physical, mental, or social well-being".³ Within the industrial situation this also defines the objective of an environmental sanitation programme. Moreover, it indicates the necessity of avoiding the creation by industry of sanitary hazards for the surrounding community.

Within the industrial environment, proper environmental sanitation is important for prevention of the spread of communicable disease by water, food, air, or other means. In many underdeveloped countries, these hazards may be greater for workers than specific occupational diseases. The latter, of course, also require environmental controls, which are discussed later.

Approval of the plans for construction of a new plant or substantial modification of an existing plant provides an important opportunity to help assure proper sanitation facilities. This may be required by governmental authorities; and, at the same time, consultant services can be given to an industry on desirable plans.

³ See second report of the Expert Committee on Environmental Sanitation, *World Hlth Org. techn. Rep. Ser.* 1952, 47, 4.

It is helpful if industrial hygiene codes, which include provisions for general sanitation, are accompanied by explanations of the reasons behind the legal requirements. This will help to assure good co-operation from industry.

One of the basic requirements in all establishments is a safe and adequate water-supply. Its safety from pollution must be assured if the water is to be used for drinking or washing. Plumbing and piping must be free from cross-connexions between potable and unsafe water sources. Periodical laboratory tests are necessary to confirm the safety of water. Public-health agencies can provide the necessary protective services.

If food is dispersed in an enterprise, its sanitary preparation, storage, and handling are essential. Public-health authorities can aid in necessary inspection, the education of food handlers, and other measures necessary to prevent outbreaks of gastro-intestinal disease.

Toilet facilities are essential, and hazards should be avoided by proper systems of disposal of excreta. Garbage and waste disposal should be such as to avoid the breeding of flies and vermin.

General plant cleanliness has an effect not only on the transmission of disease, but also on the morale of the workers and on their habits. Washing facilities, locker space, good housekeeping, etc., enable workers to keep clean personally and reduce the likelihood of disease-transmission and of accidents.

Sufficient space per person is essential ; overcrowding must be avoided, not only to prevent respiratory infections, but also to ensure a comfortable working environment. Adequate ventilation is required not only for the control of airborne toxic materials, but also for the production of an environment of proper temperature for the removal of excess body-heat. Adequate and suitable lighting, natural or artificial, or both, should be provided.

The environmental controls designed to reduce exposure to dusts, fumes, and other toxic hazards are often technically inseparable from measures of general environmental sanitation. Where more than one governmental authority is assigned administrative responsibility, co-ordination is essential.

Education of the worker about personal and environmental hygiene can be conveniently given in the place of employment. This will have value in the plant and in the home and community as well.

While industry provides a channel for the promotion of many health programmes of general value to the community, it may also create problems for the community. Chief among these are liabilities of air and stream pollution and problems of town planning. The prevention of stream pollution requires control of the effluents from a factory. A careful study must be

made of the nature of the effluent in relation to the legitimate downstream use of the water, the properties of the stream, and other natural factors. Co-operation between industrial engineers and health authorities is necessary to forestall the creation of community problems from polluted streams.

The dangers of air pollution by industrial contaminants, when associated with special meteorological conditions, have become increasingly recognized. While the effects on health of long-term, low-grade atmospheric pollution are not fully understood, certain episodes of extreme pollution have caused mass disasters, such as those which occurred in the Meuse Valley, France, and in Donora, Pa., USA.

A careful study of all the factors in air pollution must be made by teams of scientists. When the problem has been evaluated, steps may be taken to correct it. This may involve delicate legal and economic questions which require different solutions in different countries or regions. Total community welfare, including the benefit of the industry to the community, must be considered. Similar problems are encountered with respect to soil pollution as, for example, with radio-active and other toxic substances. Industry requires guidance on these problems.

The overall place of industry in a community may have other effects on the well-being of the people. Odours and noises may create a nuisance. Traffic may create or aggravate accident hazards. The housing of workers near a plant must be correlated to essential community amenities and to social and sanitary facilities. To face these problems and obviate their consequences for the public health, town planning and zoning are highly desirable.

The advancement of all these measures of environmental sanitation inside and outside industry calls for active co-operation among health and labour authorities, industrial management, and the workers themselves.

1.6 Health education

The effectiveness of all health service activities is directly related to the understanding and knowledge of the workers. Health education, therefore, is a basic need.

As a general principle, it is widely recognized that individuals will co-operate in an activity more fully if they have a part in its planning. One of the major objectives of health education is to arrange for the participation of the workers in the planning and operation of the total health-service programme in industry. The participation of workers in the management of their own affairs is also one of the basic tenets of the International Labour Organisation.

The best education of workers — indeed, of all persons — is personal experience. But experience with health services, such as medical examinations, chest x-rays, immunizations, medical care, etc., becomes meaningful only if its purpose is fully understood. Such services should, therefore, be fully explained. Sustained personal contact between health personnel and workers can fortify this understanding.

There are many techniques of formal education in the plant and in the community. Education offered to the young apprentice in vocational training schools, and to the child in ordinary schools, may have lasting effects. Industry can make valuable suggestions on the content of such teaching in health and safety.

In the plant, a certain amount of formal education through talks, motion pictures, posters, and pamphlets is valuable; but, to be effective, this must be related to the local situation and to personal experiences and needs. The best educational instruments are those developed at the level closest to the people. Group discussions in relation to specific needs can be very successful. Static forms of education, like plant posters, must be frequently changed to have an impact on the workers.

Health education in the plant should be co-ordinated with comparable activities in the community. The worker and his family are affected by community educational activities; and, correspondingly, education in the plant may affect the worker's behaviour at home. It is therefore important that the objectives of these educational efforts be consistent.

Health education has become a technical speciality in some countries, utilizing the skills of adult education as applied to health. Industry can avail itself of these special services by seeking consultation from public or voluntary health-agencies in the region, but all health personnel can contribute to health education in some degree.

Health education is useful in connexion with social security programmes providing medical care. The worker can be helped to understand the value of medical care and yet the importance of not invading the time of the doctor unnecessarily.

It is important to recognize that the channel provided by the industrial establishment for health education can be used to advance the general health of the worker. In the long run, this will promote the general objectives of an industrial health programme.

1.7 Nursing services

Since nursing services in the community should be closely related to the medical service of the plant, this subject is discussed under section 3.1.7.⁴

⁴ See page 22.

2. Notification of Occupational Diseases

The committee considered the draft texts of international regulations relating to the notification of occupational diseases which were prepared by the International Labour Office in accordance with the decision of the International Labour Conference at its Thirty-fifth Session in June 1952.⁵

The committee, having noted the report and conclusions, which were adopted by the International Labour Conference, examined the professional and technical points involved in carrying out the decisions of the Conference.

In particular, the committee considered in this connexion :

- (a) the objects of notification of occupational diseases ;
 - (b) the conclusion that all diseases which may be considered to arise as a result of employment are to be notified ;
 - (c) the conclusion that the regulations are to include a minimum schedule of notifiable diseases and that this schedule is to be international in character ;
 - (d) the nature and content of the minimum schedule adopted by the Conference ;
 - (e) the persons to be specified as responsible for notifying, and relevant time limits and intervals to be specified for notification
- and recorded the following observations.

The committee agreed with the content of conclusion 2, which deals with the objectives of notification of occupational diseases, that is, for the purpose of :

- “(a) initiating measures of protection and prevention and checking their effective application,
- (b) investigating the working conditions and other circumstances which have caused or are suspected to have caused occupational diseases, and
- (c) compiling statistics of occupational diseases.”

The apparent object of conclusion 3, i.e., the compilation of a comprehensive international list of all occupational diseases, is impracticable and unlikely to be achieved. Such a list would be of great length and include diseases rare in the countries in which they occur and non-existent in others. The very existence of such a list would tend to invite ill-considered notifications and exploratory applications for compensation which might not have any basis in fact. Nevertheless, such ill-founded issues would

⁵ International Labour Office (1952) *International Labour Conference : Thirty-sixth session 1953. Protection of the health of workers in places of employment*, Geneva (Report V (1)), p. 6

have to be authoritatively determined with consequential burdens on the diagnostic and administrative machinery. Furthermore, difficulties in description, definition, and nomenclature evident in relation to a minimum schedule (as referred to below) would be greatly magnified in respect of a comprehensive schedule. The committee concluded, therefore, that conclusion 3 is to be regarded as a statement of principle rather than an immediate directive.

The committee then proceeded to the consideration of conclusion 4, that is, the nature and content of the minimum schedule adopted by the Conference and the consequent operational implications.

In view of the adoption by the Conference of conclusion 3, the main task becomes that of defining occupational diseases rather than of guidance as to the selection of diseases for immediate notification. Nevertheless, the committee felt that some reference should be made to the broad operational results which may be expected from the inclusion of certain diseases in this schedule.

Thus, the inclusion of item (xvi) (skin diseases from a variety of groups — but, by no means, a comprehensive list — of known skin irritants) could lead only to a great number of useless notifications at considerable expense in time, administrative personnel, and money. Items (xiii) and (xiv) (silicosis and asbestosis) are diseases notoriously difficult to diagnose, and in any country the number of experts competent medically and in knowledge of the causative occupational exposures is very limited. To require general notification of these diseases would result again in flooding the relevant authority with notifications of a great variety of pulmonary disease other than silicosis and asbestosis.

The inclusion of item (xii) (poisoning by halogen derivatives and hydrocarbons of the aliphatic series) as such is not only liable to produce excess ill-founded notifications, but also it could often only be surmised that there had been exposure to one or another of this very great (and largely unexplored toxicologically) group of substances.

In preparing a list of occupational diseases to be made notifiable in a particular country, the committee recommended that, before such a list is prepared, a study of the occupational disease problems of the country should first be conducted, giving due regard to the natural and scientific resources of the country.

A further point which emerged during the discussion of the content of the schedule was that a number of the "diseases" manifest themselves as acute events of short duration, e. g., item (xi) (carbon-monoxide poisoning), and poisoning by a number of the substances contained in item (xii). Such types of poisoning may prove fatal although, if the sufferer recovers, they do not necessarily leave permanent ill-effects. Because of such features

these "diseases" are treated in some countries as "accidents" and are notified as such, provided they cause death or are sufficiently severe to prevent the affected person from earning full wages for more than several days at the work at which he was employed. The important point here is that an easily and immediately identifiable *event* is made notifiable and not a *disease*, the cause of which may be ascertainable only after careful investigation (or, even, not at all) by those (i.e., a physician or the employer) on whom the duty of notification is placed. General notification of such cases as "diseases", without limitations (assuming that they were notified), would result in many trivial events being notified and would tend to conceal serious cases which demand immediate investigation by the inspector or other person with duties in respect of such occurrences.

The committee felt, therefore, that effective implementation of the decisions of the Conference would require the addition to the Recommendation or Convention of operative articles by way of description, definition, and identification of occurrences, to obviate difficulties — illustrations of which have been given above — and, in this way, to simplify the identification of the event or disease which is required to be notified, its cause, and ascription to occupation.

It may well be, the committee believed, that the use of broad occupational designations (with expressly no limiting implication of causation) alongside particular diseases or poisonings would assist persons who have the duty of notifying, and the worker in identifying, occurrences which should be notified.

The committee was further of the opinion that, the objectives of notification being different from those of compensation, it was unsafe to draw analogies too closely between lists of diseases set out for different purposes. It suggested also that the optimum methods of implementation of the decisions of the Conference should be considered in practical detail by the International Labour Office in conjunction with other experts.

3. Organization of Comprehensive Health-Service Programmes in Large and Small Plants, and in Agricultural Enterprises

The committee defined the aims of an industrial medical service as the promotion and maintenance of the physical and mental health of workers, with particular reference to their occupation. This includes the effort to achieve a psycho-physical balance between the worker and his job. The balance between the worker and his job should be obtained not only by adapting the worker to the machines, but also, and even more important, by adapting the machines and working methods to the physical and mental capacities of man. Industrial medical personnel will thus

contribute directly to the economic and social development of the country.

The basic content of an industrial medical service, consistent with the aims stated above, is as follows : medical examination of workers ; preventive health services, first-aid, and medical care within limitations appropriate to the area ; supervision of work-places ; health education and counselling ; and maintenance and analysis of records.

The industrial medical department should be an integral part of the industry, under the direct administrative responsibility of top management and with its full support on the one hand, and enjoying the full confidence of the workers on the other. The industrial medical service should not be the exponent of either the management or the worker but should find its foundation in the principles of medical ethics and conscience.

3.1 Comprehensive programme in large plants

3.1.1 *Medical examinations*

Pre-employment or preplacement medical examination of the worker is the foundation of a comprehensive programme for worker health maintenance. The extent and the type of examination depend primarily on the function it serves, but it should be comprehensive and should include the following :

(1) The establishment of the worker's medical, family, occupational, and social history.

(2) Physical examination. This examination should be comprehensive and the findings recorded on forms designed to meet the needs of the particular organization. Variations in procedure would depend on the specific hazards of the occupation and on special job requirements. The psycho-physical status of the worker should be carefully investigated.

(3) Relevant laboratory data. This may include x-ray, urine and blood examinations, or other special tests for endemic disease.

(4) Summary and conclusions. The physician should discuss the summary and conclusions with the individual, both in terms of his occupational adjustment and of his future programme for promoting good health.

Periodical and special check-ups are more likely to have meaning for both the worker and the examining physician. For example, they may be recommended for special occupational hazards, for women or young persons, or for older workers. All cases of ill-health, physical or mental, in which work may play a part, should be thoroughly investigated by the plant physician. Special check-ups vary in their content and periodicity, depending on their objectives.

3.1.2 *Prevention, medical care, and first-aid*

The control or prevention of occupational disabilities is a combined function of the plant medical department and of engineering and other services. The medical department should be routinely consulted by the management before the introduction of new materials or processes or major alterations in the plant environment. The medical department should also make periodical inspections of potentially hazardous materials and processes throughout the plant. If there is a health-and-safety committee in the plant, the medical department should have membership on such a committee. Analyses of disability records of the plant and intensive studies of proved or suspected cases of occupational disabilities will also aid in the control of occupational hazards.

The treatment or medical care of emergency cases of occupational disability is a basic function of the medical department. The treatment of non-emergency ambulatory cases may be done in whole or in part by the medical department.

As for non-occupational disabilities, individual programmes for the promotion of health, when properly carried out, represent a positive and progressive approach to public health. Starting with the findings of the individual health evaluations, they can be developed in many directions. Many of the principles mentioned in section 1 of this report would have a direct application in this preventive programme.

In many highly industrialized countries, the treatment of non-occupational disability is limited to emergency, on-the-job treatment. In isolated areas, and in some countries, a much broader programme of treatment is provided and may be legally required. This may not only provide comprehensive treatment for the worker, but also, in some cases, include his family. Industrial health services can materially contribute to community health programmes, particularly in countries where such programmes are inadequately developed.

The practical arrangement of industrial medical services, such as administration and financing, should be decided according to local conditions. In some countries, social-security or insurance funds may have full responsibility or may provide financial assistance.

Properly applied first-aid can play a major role in limiting disability from accidents and in hastening recovery. First-aid services should be established in proportion to the size of the factory, the risks involved in the work, and the composition of the labour force. These services should be adequately supervised and the personnel well trained. The equipment must, at all times, be maintained to deal with emergency situations.

3.1.3 *Supervision of the working environment*

The periodical study of occupational health hazards of the plant provides information of primary importance in the prevention of occupational disabilities. These should be carried out in co-operation with other departments of the plant, such as safety, personnel, etc. The medical department should, therefore, become acquainted with the raw materials, processes, and products manufactured, and should consult on, or supervise, experiments on new materials, processes, or environmental conditions to determine their effect on the health of workers. Likewise, new and improved control measures for new health hazards should be subjected to experimental trials. If the resources of the plant do not permit such original investigative work, then the medical department should arrange for comparable determinations to be carried out by outside agencies.

In addition, the medical department should co-ordinate the clinical and environmental aspects by evaluating the influence of physical factors such as temperature, humidity, radiation, vibrations, noise, etc.; check the cubic space and the placing of the workers in the work-room, including questions of posture and appropriate seating; and inspect lighting, ventilation, the degree of atmospheric pollution and causes of poisoning, and refuse and waste water, where the services of specialists are not available. Further, the medical department should see that sanitation, cloak-rooms, and work-rooms are maintained in a satisfactory state. Every complaint attributed to employment should result in an inspection of individual working conditions. The physician should, in addition, study the various aspects of occupational physiology and psychology such as fatigue, maximum limits for weights to be carried by workers, night work, shift work, etc.

The plant medical officers should, for the accomplishment of their tasks, be able to consult, as appropriate, the official industrial-hygiene agency, specialists in occupational health institutes, the public-health service, the social security service, and research centres, in addition to the specialists in the other technical departments of the establishment.

3.1.4 *Health education and counselling*

The principles of health education outlined in section 1.6⁶ should be applied.

The purpose of counselling is to assist workers in their process of adjustment to the working, home, and community environment. It can help the worried worker, the accident-prone individual, and those with problems of adjustment to fellow-workers and to work patterns. It includes personal and industrial relations.

⁶ See page 14.

3.1.5 *Maintenance and analysis of records*

Adequate records are essential for the planning, development, and efficient operation of any industrial medical service. These records may include the following:

(1) The individual health record should give a summarized story of the individual's health prior to his employment and a comprehensive picture of his health subsequently.

(2) The individual occupational disability record is often required for workmen's compensation purposes.

(3) Daily and accumulated occupational disability statistics provide the definitive picture of the occupational health problems in the plant at any given time, for comparison with experience at a previous time, or with another plant or group of plants.

(4) Daily and accumulated non-occupational disability statistics provide a definitive picture of the general health status of workers.

3.1.6 *Premises*

The premises for the medical service should be in a central location in relation to the workshops and, if possible, close to the principal entrance to the factory. Ease of access and exit should be provided and reasonable privacy ensured. If possible, the premises should be located in a quiet area, with satisfactory lighting and toilet facilities. The size of the premises should be tailored to the individual needs of the particular plant. Equipment and maintenance should be such as to inspire the confidence of the workers.

3.1.7 *Personnel*

The qualifications of an industrial physician should include a thorough knowledge of medicine in general and, in particular, of occupational medicine and public health; he should have received practical training in factory medical services, as well as in accident clinics, and be acquainted with rehabilitation practice. He must have appropriate knowledge of his industry, of legislation relating to accidents and occupational diseases, and of local and national organizations providing medical, public-health, and social services for workers. Personal qualifications should include a facility for co-operation and interest in the specific health problems of industry. In view of the necessity of retaining an independent position in relation to the management and the workers, his integrity must be unassailable. In order to permit physicians to attain the above qualifications, it is emphasized that adequate facilities for training must be provided.

The number of physicians attached to a large factory should be determined by the number of workers, the risks involved in the industrial processes,

the percentage of women and young persons employed, and the available medical services of the community. In carrying out his duties, the physician would depend not only on his assistants, but also on the services of a number of specialists, some attached to the industrial establishment — e.g., industrial hygienists, engineers, chemists, physicists, and laboratory personnel — and others outside the establishment — e.g., medical specialists, and technical, legal, and administrative consultants.

The nurse has a key role in implementing all activities designed to promote the health of the worker. The precise duties of the industrial nurse depend on the general state of development of industrial health services in a plant or region or country. Where a full medical staff is available, the scope of functions and responsibilities of the nurse will be different from those necessary where a nurse is working alone.

In general, the trained nurse has duties along the following lines :

- (a) assistance in general administration, maintenance, and arrangement of health facilities in the plant ;
- (b) emergency and primary treatment of accidents and illnesses based on standing orders from physicians ;
- (c) assistance with preplacement and other medical examinations ;
- (d) arranging follow-up treatment, where indicated, including health supervision of employees returning to work after illness ;
- (e) assistance in general preventive health-measures in the plant ;
- (f) health education and counselling ;
- (g) assistance in supervision of factory hygiene and accident prevention ;
- (h) advice on specific health questions to management and workers ;
- (i) maintenance of records and statistics ; and
- (j) co-operation with, and referral of workers to, general community agencies for help, as necessary.

The nurse in industry should, in general, complement and not overlap nursing services in the community. The industrial nurse should make full use of the latter, where they exist.

The personal services of the nurse for the worker enable her to gain the worker's co-operation in many health-promotion efforts. She is in a position to refer cases for medical service when necessary, but can save the time of the physician, which is often very limited.

In large establishments, the trained nurse may be assisted by practical nurses or aides.

To do her work properly, the industrial nurse must have access to higher authorities. Where an industrial physician is available, her

responsibility is, of course, to him ; but where he is not, the nurse should have direct access to top management.

Where industries do not provide a nursing service, the local public-health agency may sometimes help to fill the need. (This is especially suitable in solving the problem of health services for small plants.) Likewise, where there is no nurse employed in industry, the public-health nurses of the community may render public-health services of value to the workers and the community if they have access to the plant. However, this must be done with the greatest caution, so as not to jeopardize the worker's position in the plant.

The nurse in industry can provide the liaison between health services in the plant and in the community. She must, therefore, be informed about the latter. By gaining the confidence of the worker and learning of his problems, she can advise him on personal health questions which call for utilization of the community health resources.

The industrial nurse should possess an accredited general-nursing diploma and, in addition, it is desirable that she should have experience and training in industrial nursing or public health.

In many areas of the world, trained nurses are not available and auxiliary workers of various kinds must be used for this service. If properly supervised by physicians, these health workers can render valuable services. Laboratory and x-ray technicians meeting the recognized standards in these fields are employed where there is sufficient volume of service for them to render.

Other professional and technical personnel, such as dental hygienists and physiotherapists, are employed as needed.

Secretaries and clerks may be employed in medical departments so as to conserve the time of the professional staffs.

3.2 Comprehensive programme in small plants

The scope of the medical programme in the small plant should be basically the same as that for the large plant. Physicians can be employed either on a full-time or on a part-time basis, or an "on-call" arrangement might be made. However, experience has shown that the "on-call" physician never provides a comprehensive programme. Similarly, a nurse may be engaged on a full- or part-time basis, but would be responsible for duties of a similar character to that outlined for large plants.

Different techniques may be adopted to provide this comprehensive service. In certain circumstances, it may be practical for a full-time staff to serve a group of plants ; in other situations, a part-time service may be

the most practical solution. Pilot projects should be developed and sponsored by the appropriate official agencies to demonstrate the value of plant medical services to employers, workers, and interested professional groups. Some countries utilize the services of voluntary or community organizations to provide for the special needs of industry. Whatever the approach, the aim should be to provide a service which takes into account all of the features inherent in large plant organization.

It is appreciated that this discussion on small plant medical services is inadequate, but lack of knowledge of many aspects of the problem is one of the major obstacles in stating a programme in more specific terms. It is strongly recommended that research be carried out, on an international basis, to provide at least some of the answers to this very difficult problem.

3.3 Comprehensive programme in agricultural enterprises

In most countries of the world, agricultural workers form the greater part of the working population. The nature and solution of their health problems are somewhat different in character from those of industrial workers. However, the aims of health facilities in agricultural enterprises are broadly the same as those for industry.

Important occupational-health problems associated with agricultural workers are infectious diseases transmitted by animals, poisoning by pesticides, and diseases of the locomotor system. Malaria, parasitic infections, and other endemic conditions may be more prevalent in rural areas. Measures of health protection vary according to the type of enterprise, the category of workers employed, and the particular associated hazards. Some of the problems may be listed as follows :

(1) *Large-scale agricultural enterprises, including plantations.* The health services provided for this type of enterprise can be broadly based on the principles of industrial medical services.

(2) *Medium and small agricultural undertakings.* The principles for health services for small industrial establishments could be applied in many of these situations. On account of the considerable distances between the undertakings, mobile units may be valuable. In other circumstances, it may be practical to rely on community health services to take care of essential needs.

(3) *Migratory farm-workers.* Agricultural work being preponderantly seasonal, a great number of farm workers are migratory. In some instances, a medical examination is provided close to the worker's home or on arrival at the plantation. However, medical examination is not the rule. Its value should be emphasized in communicable-disease control and in determining the worker's capacity for the particular occupation. In some

areas, it is desirable to provide housing and other facilities along the route to places of employment. These facilities may be provided by governmental agencies or employers' associations.

(4) *Women and young workers.* The special needs of women and young workers should be taken into consideration, particularly as large numbers are employed on agricultural enterprises. The principles categorized for their care have been outlined in section 1.3.⁷

(5) *Poisoning.* Many highly toxic substances have been introduced into agriculture as a means of pest control. A careful system of licensing and labelling of these products is recommended. In addition, it might be practical to bring in a system of licensing that would provide for the restricted use of the more toxic materials. Where workers are exposed for considerable periods, they should be under medical supervision. Agricultural workers should have proper training and education in methods of handling, storing, and applying the products. Personal hygiene as a measure of control is extremely important, and adequate facilities should be provided for washing and for changing clothes. When protective equipment is required, care should be taken that proper equipment is available and that it is properly used and maintained. It should further be ensured that medical practitioners and hospitals in the area have a knowledge of the materials used, the symptoms likely to be associated with over-exposure to the products, and measures recommended for treatment.

(6) *Accidental injuries.* All agricultural establishments, whether large or small, should provide first-aid facilities consisting, as a minimum, of a first-aid box containing the essential materials. Persons trained in rendering first-aid should be available. Effective guarding and supervision of agricultural machines should be in force.

4. Methods of Co-operation Between Public-Health and Industrial Health Services and of Implementation of Existing Industrial Health Legislation and Standards

The committee interpreted this item on the agenda to mean methods of co-operation among departments of labour, occupational health services, and public-health organizations within the framework of legislative provisions and statutes existing in the different countries, including the implementation of existing industrial health legislation and standards.

Two important distinguishing characteristics of public health are its preventive character and its mass approach. This mass approach is

⁷ See page 9.

seen, for example, in the school health work conducted in many countries throughout the world. In this field many great gains have been achieved.

If one looks about the community for further examples of aggregates of persons on which to exercise a mass attack, one is struck with the possibilities presented by industry. However, further examination of industry reveals that, in many countries, industry has been under legal regulation for many years. This has resulted in the development of official agencies endowed with legal powers for the conservation of health and safety in industry. These agencies are often labour ministries, labour departments, or industrial commissions, etc. To these official agencies industry is usually bound by the laws of the land. Industries may also be under the jurisdiction of an official health agency.

Many industrial establishments have developed, either voluntarily or by direction, their own medical staffs and departments which are engaged in the provision of certain health services for the factory employees.

Other bodies which may have an interest in industrial health matters and public health are voluntary agencies (some of which may have government recognition), such as tuberculosis associations, nursing associations, etc. The form and scope of these agencies may, and do, vary from place to place and country to country. For this reason, it is difficult to discuss this subject in any other manner than by presenting a general approach. The objective is to co-ordinate the official and unofficial services outlined above so as to accomplish the largest volume of public-health effort at a minimum expense to the community. As a general policy, it was the consensus of opinion of the committee that a programme should be formulated which provides for the complete co-operation on the local level of all the agencies having a bearing on the health of the worker.

The general public-health services which may be rendered by the official health agency include health education, immunization and control of communicable diseases, nutrition, maternal and child health work, venereal-disease prevention and treatment, etc.⁸

In order to provide effective co-operation on the local level it is important, and, in fact, almost essential, that there be a complete appreciation of this approach to health work at the highest governmental level and a completely understood programme of co-operation among all the official agencies concerned. Once this has been accomplished, it is possible to develop co-operation at the local level, that is, among the health, labour, voluntary, and plant health services immediately in the vicinity of the industrial establishment.

⁸ See page 4.

As pointed out earlier, one of the agencies — usually, the labour or health agency, or both — has legal jurisdiction which enables it to enter the industrial establishment. In order to effectuate the overall programme, the agency consults with the management for the purpose of obtaining permission, if this is necessary, to conduct, along with the other agencies, appropriate features of the public-health programme. If the factory happens to be provided with an industrial medical service and a physician of its own, these resources may be utilized to obtain the consent of management to the broad programme envisaged.

Wide variation exists between countries and, within a country, from place to place, in these facilities and in the legal provisions surrounding the factory. For these reasons, the approaches to this problem must, of necessity, be ordered to fit the local situation. For example, in some cases the official public-health agency may possess sufficient legal power to conduct this type of activity without asking the permission of industry. In other instances the labour union may have such a deep interest in the health problems of its membership that it may be essential to consult with the union leadership in order to obtain the co-operation of the worker. In some areas, the management may have provided complete medical and public-health services for its workers. This may leave little for the agencies to do, and the remaining task may be completed with ease. On the other hand, in certain cases the management may be resistant to such public-health procedures and may maintain that it need do nothing more than fulfil the minimum requirements of the law.

These variations are pointed out merely to indicate that the consummation of the programme may, and often does, depend on the initiative and ability of those interested in meeting the local problems and successfully overcoming any obstacles which they present. That this can be done has been amply demonstrated in many areas, with the result that real advances in public health have been achieved. It is to be understood that this programme does not necessarily call for any abrogation or change in the existing legal powers of any official agency concerned.

A most important field of co-operation is the joint application of health measures to large groups of workers in a plant. For example, if a factory has an industrial medical service, it would be possible for the public-health agency to conduct a rapid screening programme, the findings of which might be turned over to the plant medical department for continued medical effort for correction. This might apply, for example, to workers who need nutritional guidance, dental care, mental hygiene assistance, immunization against communicable disease, etc. The industrial physician or nurse may also play a useful role in pointing out to the inspection authorities any difficulties encountered in implementing existing legislation or regulations.

Beyond the general health services described above there are, of course, many highly specialized governmental services relating to the prevention of accidents and measures of environmental hygiene designed to prevent occupational diseases. The governmental agencies responsible for these specialized services differ in different countries. Whatever agencies are responsible for these services, co-operation should be expected between them and the agencies responsible for general community-health services. This is important because it is often difficult to draw a sharp administrative line between environmental hygiene relating to occupational hazards and that relating to general health maintenance.

Co-operation between the official agencies may, and, in fact, should, take place on the level of the plant environment. A good example is the co-operation between an official health agency doing industrial hygiene work and benefiting by the reports of the labour inspectorate. At the same time, the labour inspectorate might be enforcing the regulations on the basis of the technical service provided by the industrial hygiene division of the health agency. In another example, a labour agency might be doing the industrial hygiene work in the factory or mine and, by co-operative arrangement, have radiographic or other studies conducted by the official health agency. This type of co-operation is especially important since industrial hygiene-units are usually small, and cannot, by themselves, inspect factories with any great degree of coverage for the purpose of ascertaining the existence of occupational hazards. For this reason, some mechanism is required for bringing hazardous conditions in plants to their attention. Such work is an important function of factory inspection, no matter where the official division of industrial hygiene is located.

When government resources for labour inspection are limited, it is wise that activities be concentrated on industrial situations where the maximum number of workers are found. It is desirable that supervision should concentrate on workers who are particularly endangered by their work, either because of their category — for example, in the case of women and young persons — or because of the products, processes, or other special circumstances in which the work is carried out. Ideally, government surveillance should apply to all workers in large plants, small plants, and agricultural establishments, but the achievement of this aim must await the development of adequate personnel resources in the government.

One approach which has been successful in some countries in improving the co-operation of official agencies among themselves and with industry is worthy of consideration. Compulsion by meticulous enforcement of legislation may lead to reticence on the part of certain managements to provide welfare measures. This may also lead in certain instances to failure to co-operate with official agencies. An important approach is to stimulate the concept of promotion of industrial welfare and health, irrespective of

legislation, by officially sanctioned incentives or rewards (such as insurance merit-rating, tax reduction, etc.) to those industrial establishments which provide welfare measures beyond the minimum prescribed standards.

In conclusion, in countries with two or more official agencies (such as ministries of health and labour), entrusted by force of law with duties of promotion and maintenance of health of the people, whether in relation to their places of employment or not, one or the other will be entrusted primarily either with public health alone, or with public health including occupational health, or with occupational health (including safety and welfare), or with labour inspection only. It will be the duty and concern of these departments to co-operate with, and assist, one another freely and whole-heartedly in the common aim of promoting the health, safety, and welfare of the individual and the communities in which they live and work. In so doing, the primary spheres of duty with which each is legally entrusted will be respected by the other interested parties. These principles will also apply to departments whose primary concern is research.

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