directing council

PAN AMERICAN HEALTH ORGANIZATION

XX Meeting

regional committee

WORLD HEALTH ORGANIZATION

XXIII Meeting

Washington, D.C.
September-October 1971

Provisional Agenda Item 24

CD20/8,Rev. 1 (Eng.)
24 September 1971
ORIGINAL: SPANISH

OCCUPATIONAL HEALTH SERVICES

EXPANSION OF OCCUPATIONAL HEALTH SERVICES

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Summary of Recommendations

1. Countries that still do not have occupational health programs should create them as soon as possible to serve 10 per cent of their exposed working population by 1975 and 20 per cent by 1980.

2. Countries that do have occupational health programs should expand them to serve 20 per cent of the exposed workers by 1975 and 40 per cent by 1980.

3. International development institutions should urge upon the governments the advisability of incorporating in all new projects essential measures for controlling health hazards for workers and the community and for abating the nuisances these projects may create.

4. In each economic development project, funds should be earmarked for the prevention of such hazards and nuisances.

5. International organizations and the Member Governments should coordinate or integrate the services dealing with occupational health in order to make them more effective and economical.

6. The Member Governments should intensify the technical training of specialized personnel in occupational health.

7. A small part of the funds assigned to industrial development should be allotted to institutions that train personnel in the identification, evaluation, and control of occupational hazards.

EXPANSION OF OCCUPATIONAL HEALTH SERVICES

The Present Problem

At the beginning of the present decade the labor force in Latin America was approximately 94,000,000 persons. In highly industrialized countries there is an average of one dependent for each two workers. On the other hand, in Latin American countries, whose age structure is much younger, the ratio is one to one, 43 per cent of the population being under 15 years of age and 4 per cent over 64.

Health and productivity are intimately related to income. Since their relationship is reflected in the purchasing power of the people, it may be of interest to review this factor for Latin America. Of the 19 countries for which information is available, one has an average per capita income of less than US$100 per year; three have between US$100 and US$250; eight between US$250 and US$500; six between US$500 and US$750; and one above US$750. To supplement low wages, the governments of some countries provide subsidies, such as, for example, family allowances, medical services, social security services, food supplementation programs, etc. These subsidies tend to create an expensive bureacracy and, in some cases, may affront the dignity of the worker.

Industrial workers, frequently lacking in experience because they originally came from rural areas, handle dangerous substances without being fully aware of the risks inherent in them. The use of modern techniques in an effort to rush through the stages through which the more developed countries had to pass entails additional risks. This is demonstrated by the high incidence of industrial accidents and occupational diseases, which is sometimes six to ten times greater than in the more industrialized countries. For example, at the First Seminar of Occupational Health held in 1964, in São Paulo, it was reported that in two studies of workers in lead battery factories and metal working industries in Peru, 56.9 per cent and 60.3 per cent respectively suffered from lead poisoning. In Venezuela, the incidence of lead poisoning was as high as 23 per cent. Arsenical poisoning in Brazil reached 86 per cent and in Peru, 88.7 per cent. In Mexico, 50 per cent of the workers exposed to chromium suffered from dermatitis and 10 per cent had nose ulcerations and perforated septums. In Chile, 11.4 per cent of the workers exposed to solvents suffered from occupational disabilities. Although the statistics in this regard are not complete, many more representative samples could be cited.

Economic Impact of Occupational Disabilities

The low increase in agriculture production in the last two decades has dramatically contributed to the maintenance of underdevelopment in Latin America. This has required the increased use of fertilizers and pesticides, which have produced serious health problems. The number of deaths due to pesticides is considerable and is increasing. Studies designed

to determine the toxicity of new products have not kept pace with the number of those put on the market each year. Industrialists and economists usually overlook the economic impact of occupational health hazards on industry, and the number of specialists in this field is still very small.

In addition to the toxic hazards mentioned above, there are other occupational hazards, such as excessive heat, cold, pressure, noise, and improper lighting, which also affect the human organism. The use of radioactivity in the study of corrosion, welds, production control, etc., also creates considerable hazards. The rapid mechanization of agriculture and the use of complicated machinery by insufficiently trained personnel multiplies the number of accidents in developing countries.

In addition to losses due to disabilities, there are those due to legislation which provide special economic benefits such as shorter working hours, longer vacations, and reduction in the number of years needed to qualify for retirement for workers exposed to occupational hazards. None of this helps to solve the problem. In actual fact it, only affects the cost of production by reducing the number of hours worked by trained personnel.

At present we have a better knowledge of the impact of the environment on the well-being of the population. In recent years we have gradually been becoming aware of how we are plundering our planet of its limited resources. Workers must be considered one of the resources affected, since they are daily exposed to special risks from the work environment. However, although environmental problems are beginning to be of concern to the world authorities, occupational health continues to have difficulty in obtaining both financial and administrative support. This may possibly be due to the fact that occupational health has never had much "glamor" nor has it been given as much publicity as other programs, such as tuberculosis, poliomyelitis, heart diseases, or cancer, despite the fact that it is the duty of this discipline to protect the most important sector of the population, namely, the workers, the actual producers of goods.

Nowadays great emphasis and publicity is being given to the environmental pollution of the community. In the United States of America, in an effort to strengthen the many agencies responsible for its control, a new agency, the Agency for Environmental Protection, has been established. In our opinion, the right to protection in the working environment against health hazards and to safety is as fundamental as the right to protection of the community environment. This principle is of special importance if we bear in mind that experience has shown that good occupational health programs yield significant economic and human benefits, as is shown by the following examples, one in North America and the other in South America:

1. Before 1936, the incidence of silicosis and pulmonary tuberculosis was extremely high among workers in granite quarries and workshops in Vermont. There was an excessive incidence of pulmonary tuberculosis among those who had worked 15 or more years in those environments, while silicosis

appeared within two to ten years of work. As the result of epidemiological studies, it was determined that silicosis developed only after chronic exposure to a given level of dust concentration. In view of these findings, the workers negotiated a contract with the Granite Manufacturing Association specifying what working conditions had to be maintained to hold the dust within acceptable levels. It was also specified that six-monthly inspections would be made by the Department of Public Health to monitor working conditions. As a result, no new cases of silicosis have occurred in this industry.

2. In 1946 a large mining company in South America started a program of occupational health and industrial safety. At that time the frequency of accidents was 20.5 per million man-hours worked and productivity was 13.1 tons of mineral extracted per man-day. In 1960, the frequency of accidents decreased to 4.8 per million man-hours worked and productivity had risen to 35 tons per man-day. In addition, the cost of accidents decreased from US$140,000 in 1951 to US$21,000 in 1960. The cost of compensation for silicosis fell from US$3,000,000 to US$300,000 in 1960. Since initiation of the program, only isolated cases of silicosis have occurred and they were usually contracted before the initiation of the health program.

The two examples cited clearly demonstrate the economic impact of successful programs. If activities of this kind are not undertaken, losses are considerable and far exceed those that normally occur. According to studies made in Latin American coutries in the last 25 years, losses due to industrial accidents and occupational diseases are considerable, equalling approximately 15 per cent of the national income.

Despite the evidence that good occupational health programs yield substantial social and economic returns, as illustrated in the above-cited examples, occupational health continues to face great difficulty in obtaining support, and even in retaining its own specialists. Well trained personnel are continually being lost to programs that are more dramatic in the eyes of the public, such as air pollution and radiation, or to industry, which usually pays higher salaries.

Occupational Health Services in Latin America

No nation in the world has an adequate occupational health program. Even in highly developed countries government programs do not cover more than 10 per cent of the working class. A number of occupational health programs were started in Latin America about 25 years ago, and in the last 10 years have been supported by the Pan American Health Organization. In a number of countries occupational health problems have been identified. There are now 14 governmental programs in various stages of development and of various degrees of effectiveness. Of these, there are only four that may be said to be adequate, three are fair, four have very limited services, two are in their initial stages, and one is being carried out by a private association on a part time basis.

Despite the fact that business firms and the labor force are beginning to recognize the economic benefits that can be obtained from a good occupational health program, they need orientation and support from the government and from non-governmental institutions. Furthermore, the public health authorities must recognize that occupational health is an integral part of public health and can yield great benefits in improving the health of the industrial population and that they have a serious responsibility vis à vis the labor force.

To sum up, occupational health problems in Latin America have not been attacked with sufficient vigor. The programs are in the initial stages; there is much to be done, and it is necessary to act energetically if we want occupational health to contribute to the economic development of the Region. There are still many governments that have not yet recognized the importance of occupational health for the welfare of the nation. However, where adequate programs exist, they have been well received, but their field of action must be expanded to enable them to deal with new problems such as air pollution, exposure to ionizing radiation, and pesticides. Unfortunately, the countries that were providing the best occupational health services have recently suffered a mass exodus of specialized personnel, and there is little chance of replacing them. It is estimated that, of specialized personnel trained abroad, about 50 per cent have left their special field for better paying jobs.

Steps to be Taken by Each Country to Solve its Occupational Health Problems

Each country needs to develp an organization capable of carrying out efficient programs of evaluation, prevention, and control of health hazards in the industrial environment.

To start with, the programs should identify the occupational health problems in the country. This information can be obtained by a preliminary survey of a representative sample of work places. Such a survey can be undertaken by local personnel trained for such purposes and with assistance from experienced international agencies such as PAHO. As soon as the survey has been completed, the data analyzed, and the corresponding report prepared, the Department of Occupational Health will be in a position to determine both the number and caliber of personnel needed and the type of field and laboratory equipment that should be purchased. With this information, it would be possible to estimate budgetary requirements with reasonable precision. The results of the survey will indicate the type of industries needing priority attention because of the nature and seriousness of the hazards and the size of the exposed population.

In an occupational health program the basic professional team should be composed of an engineer, a physician, and a chemist. These professional personnel should be recruited at the beginning of the program and should receive proper training, possibly through fellowships which may be obtained through PAHO. Such personnel can now be trained in a Spanish-speaking country, thanks to the Institute of Occupational Health and Air Pollution

Research in Santiago, Chile. In the initial phase of the program it might be advisable to obtain the services of an experienced consultant for a few months.

Countries that already have occupational health programs might well address themselves to the following key question: What can be done to correct the present situation and to ensure that occupational health receives the attention and support it deserves?

As a first step they must provide their institutions with the necessary facilities for meeting the real needs of the country and subsequently determine whether they have the necessary legal underpinning for effective occupational health activities. Later they might help to orient those who have a direct connection with this activity - managers, unions, contractors, architects, public health authorities, physicians, economists, and planners - in order to obtain the multiple benefits of occupational health work.

What are some of the steps that can be taken to enlist the support of influential persons for occupational health?

It is necessary to impress on management the economic benefits to be obtained from occupational health programs. The two examples cited above, that of the Vermont granite industry and that of a mining company in South America, show what can be done. Similarly, many years ago in the United States of America, the cement industry learned through a study made by the U.S. Public Health Service that is was possible to control exposure to dust in cement plants so that employees would not be affected throughout their working lives. As a result the Portland Cement Association organized its own inspection and control program. This program was so successful that, after 50 years, it is still in operation for the mutual benefit of workers and management.

Much effective work can also be obtained by interesting trade unions in occupational health. About 25 years ago, the steel workers in the United States of America, one of the most powerful unions, requested the Public Health Service to conduct a study of risks at blast furnaces. As a result of the conclusions and recommendations of this study, the union has organized and maintained its own Department of Occupational Health and Safety. The automobile workers union took up occupational health before 1942 and has maintained its programs since then.

Architects and construction engineers are other groups that can play an important part in supporting these programs. For example, at the beginning of the Second World War, the Occupational Health Division of the United States Public Health Service was made responsible for supervising health and safety in new munitions factories. This made it possible to provide safe working conditions even before construction began. There was joint action by the architects who designed the factories, the engineers who constructed

the, and the inspectors of the Public Health Service. As a result of their coordinated services the control of occupational diseases and accidents was remarkably successful, surpassing the expected results. The number of accidents was minimal in proportion to the great amount of war material handled. These results were even more impressive when compared with the experience during the First World War.

Many other such examples could be cited, but we believe that those already mentioned are sufficient.

The health authorities should be the first to recognize that occupational health should be an integral part of public health and can often lead to the practice of general public health among the working population and their families. For example, studies made to determine the incidence of occupational diseases should include a complete medical examination of each worker in order to obtain a differential diagnosis. Any condition not associated with working conditions, such as malnutrition, diabetes, or venereal diseases, to mention only some, can be immediately referred to the corresponding department for treatment. In Latin America epidemiological studies of this type often include the families of workers and also afford an opportunity to conduct health education programs.

Private practitioners also have much to gain if they take an interest in occupational health. Many occupational diseases simulate other general diseases. A worker exposed to lead compounds may have stomach aches, and, if the physician does not have a good occupational history of the patient, he can arrive at a mistaken diagnosis. The symptoms of manganese poisoning are similar to those of Parkinson's disease, and there are cases of carbon tetrachloride poisoning which appear to be gastric intoxication. These and other similar cases show how important it is for a physician to have a knowledge of occupational health and that it may be of great assistance in making a proper diagnosis. To assist the physician, the United States Public Health Service prepared in 1966 a book entitled Occupational Diseases - A Guide for their Recognition. It is a very useful publication for the general practitioner; it has been translated into Spanish by PAHO and can be obtained from its Headquarters in Washington.

Economists and planners also have their place in this battle and should consider and support occupational health activities. The same may be said of international agencies that make loans for industrial development. If the health and safety of workers are not taken into account when such assistance is provided, the loans may result not only in financial losses but also in losses of human life and well-being, thereby annulling the expected benefits.

Economists have still not yet fully recognized the importance of the manpower required for carrying out economic development programs nor the impact health activities can have on the better utilization of the labor force. In one Latin American country, for example, the planners who drew

up a ten-year plan included for the health sector the construction of only one hospital in a certain area of the country. They completely underestimated the losses produced by occupational diseases and industrial accidents. These losses, conservatively estimated, reached US$73,000,000 per year.

Owing to the historical development of occupational health, responsibilities have been shared by a number of institutions. This holds true at both the international and the national levels. The result of this situation has been the creation of parallel programs in the countries. The different approaches of these programs, the multiplicity of activities, and the application of different technical criteria make government activities expensive and confuses both management and workers. The Organization should recommend to the Member Countries that they coordinate these efforts in order to reduce operational costs, achieve greater efficiency, and obtain a better yield from the scanty specialized personnel resources available.

Assistance of the Pan American Organization

The principal role of the Organization in occupational health is to collaborate with the Member Governments to help them to learn how to carry out effective health programs with their own personnel and resources. The Organization has been active in this field since 1961. Special assistance has been given to new occupational health programs in Argentina, Cuba, Ecuador, Panama, and Peru, and technical support has been provided to other countries. The Organization has served as executing agency of the UNDP for the program of assistance to the Institute of Occupational Health and Air Pollution Research in Chile.

Since its inception in 1969, the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) in Lima, Peru, has been providing the countries of the Hemisphere with assistance in occupational health.

The activities of the Organization in the field of occupational health can, in general, be grouped as follows:

1. Advisory services for the organization of national structures capable of efficiently executing a diagnosis, evaluation, and control program.

2. Personnel training.

3. Research.

1. Advisory Services

a. Organization of national institutions

(1) Advice in the preparation of projects for the organization of institutions in accordance with the needs and economic capacity of each country.

(2) Assistance in the preparation of diagnosis, evaluation, and control programs.

(3) Assistance in obtaining the necessary resources for carrying out the activities of the institution.

(4) Assistance in the preparation of effective legislation and, when necessary, the revision of existing laws and regulations.

(5) Assistance in obtaining the support of institutions that finance industrial development in order to provide occupational health protection in the industry in the financing of which they have participated.

b. Conduct and strengthening of programs

(1) Assistance to each country in evaluating its program, establishing its needs together with the local authorities, and recommending the steps to be taken to carry out an effective program.

(2) Assistance in preparing national and local programs.

(3) Assistance in solving specific occupational health problems.

2. Personnel Training

a. Assistance in organizing courses and laboratories at universities in the Region, including engineering, public health, medical, and other schools.

b. Assistance in preparing undergraduate and postgraduate university curricula.

c. Assistance in preparing and conducting short training courses.

d. Assistance in preparing training courses and seminars.

e. Assistance in selecting fellows and in preparing their study programs.

f. Preparation of technical manuals and other materials, such as survey questionnaires, analytical and sampling methods, control methods, bibliographies, and other related aspects.

g. Information services for preparing, translating, reproducing, and distributing technical literature.

h. Distribution of up-to-date lists of books, journals, and equipment for sampling and analysis.

i. Organization of seminars and other meetings on important subjects in the occupational health field.

3. Research

a. Recommendation of research projects of importance to the countries.

b. Assistance in preparing research projects.

c. Assistance in obtaining funds for research projects.

d. Assistance in preparing national, international, or multinational research projects and in obtaining funds, equipment, and support for their execution.

e. Sponsoring research projects, subject to the budgetary limitations of the Organization.

f. Assistance in evaluating modern instruments and methods of analysis and research.

g. Distribution of reports on research projects carried out in the Region and elsewhere.

Conclusions and Recommendations

1. There are still several countries in Latin America where very little has been done to prevent occupational diseases and injuries in the labor force. This is prejudicial to the workers' health, labor productivity, and hopes for economic improvement. Even in countries where programs have been established for several years, the equipment and manpower are insufficient to deal with even the most important industrial hazards.

2. In countries that are initiating occupational health programs, there is usually a lapse of three years before the unit is sufficiently well organized to provide services. This time lag is due to the need to select, recruit and train personnel; to select and purchase field and laboratory equipment; to carry out preliminary investigations; and to define the activities of new projects.

3. Countries that at present still do not have occupational health programs should establish them as soon as possible and develop them so that by the end of the next five years they cover 10 per cent of the labor force. In the following five years this coverage should be extended to include 20 per cent of the workers exposed to risk.

4. Countries that have already made progress in this field should concentrate on strengthening and expanding their programs in order to provide coverage for 20 per cent of the labor force in the next five years, and 40 per cent by the end of the decade.

5. There is sufficient evidence to demonstrate that well conceived and conducted occupational health programs reduce the incidence of occupational accidents and diseases, thereby reducing economic losses and contributing to development.

6. The World Health Organization has postulated that it is not economical to undertake development programs without taking into account their implications for the health and well-being of the affected population.

7. Recently, international organizations have recommended that funds devoted to economic development should make it possible to improve basic education, since it is well known that an illiterate labor force is unable to tackle the complicated problems of modern technology. It is also important to control the impact of economic development on the environment, since it may affect the health and welfare of the people and their communities. Very little would be accomplished by increasing mechanization in mines and industries in Latin America if the occupational injuries and diseases associated with these activities represent a higher cost than the economic benefit derived from improved working procedures.

8. Any development project should include the essential elements for the control of the hazards to which workers and the community would be exposed. There are no technical problems preventing new industries from adopting preventive measures that eliminate those hazards from the outset. It is only lack of knowledge on the part of management, government authorities, and development organizations which permits these hazards to continue.

9. The technical control of occupational health programs should be entrusted to government authorities. National development agencies should consult the ministry of health of the country in which the proposed projects are to be carried out concerning the occupational health aspects of these projects. International organizations devoted to industrial development should also give due attention to occupational health so as to ensure that the necessary control measures are included in the original plans.

10. In the countries, there are usually several government agencies responsible for the control of occupational hazards. It is exceedingly important that the activities of these agencies be coordinated.

11. There is a great shortage of qualified technical personnel in occupational health. However, it should be emphasized that in several countries in the Americas there are institutions and services capable of reducing this deficit in a relatively short period of time. The Institute of Occupational Health and Air Pollution Research, organized and established in Chile with financial assistance from the United Nations Development Program (Special Fund) and with the technical assistance of the Pan American Health Organization, is an excellent example of the facilities available for training personnel in this field.

12. International agencies should allot a small part of the funds earmarked for industrial development to institutions capable of training personnel to recognize, evaluate, and control occupational hazards.