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HEALTH ASPECTS OF INDUSTRIALIZATION

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The influence of industrialization upon health is mainly related to the rapid transfer of large groups of population from agriculture to industry, from villages to industrial centres and cities.

The possible disadvantages to health of these transferred populations will be related to the new working environment and to the new social environment. The influence upon health may come from the environment itself or from maladjustment to the new working and social environment.

If the working environment is not designed according to occupational health principles, accidents and occupational diseases may occur as well as unnecessary strain and fatigue of the human body. Concerning the social environment of rapidly created industrial centres, overcrowding, bad housing or slums may appear, sewage and disposal of waste may not be organized causing pollution of water and air, water may not be provided under hygienic conditions, the transport, storage and distribution of food may not be organized under hygienic standards. All these disadvantages may, in a short time, contribute to a high incidence of disease, especially of infectious and parasitic diseases.

The adjustment of a population transferred to new social conditions may be still more difficult if the families are left behind in the village and if no social facilities, such as schools, churches, mosques and cultural centres are available. Social maladjustment may contribute to a high incidence of neurosis, psychosomatic diseases, venereal diseases, as well as a high incidence of juvenile delinquency, divorces, alcoholism, etc.

Preventive measures should be considered even at the planning stage of industrial development. At that stage it is possible to apply preventive measures at relatively low cost and it is also possible to prevent completely, or to a large extent, the health disadvantages of a rapid industrial development. If, however, preventive measures are applied at a later stage some of the disadvantages may already have occurred and it will be much more costly to make corrections than to include preventive measures in the plans from the beginning.

The preventive measures deal with planning of industry and with community planning.

Concerning industry, the design of factory buildings, machines, working processes, etc., should take into consideration the human element, applying the principles of human anatomy, physiology and psychology in designing working positions, working movements and working environment. The application of ergonomics and industrial hygiene at the planning stage will, at a low cost, prevent unnecessary strain on the human body as well as accidents and occupational diseases.

Community air pollution from exhaust gases from industry should also be considered in planning industrial development, for instance the geographical position of industry in relation to housing areas, the purification of exhaust gases, the height of stacks, the normal wind direction.

In order to facilitate the human adjustment to work during a period of rapid industrial development, with an industrial population usually transferred from agriculture to industry with no previous experience in industry, the establishment of occupational health services is essential in order to protect and promote health, working capacity and adjustment to work. An occupational health service may have many functions - health examinations should be compulsory on employment and should then be organized at regular intervals depending on the type of work, possible occupational health hazards, physical and mental demands of the work upon man, age, sex, etc. Supervision of working environment should be organized considering especially the prevention of accidents and occupational diseases. Immunization, nutrition, health education should also be included. The occupational health services must also include some medical care, under all circumstances there should be first-aid and medical care as a follow-up to the health examination. In many countries it is important to organize extensive medical care for employees and their families; how far one should go must be determined by the need of the individual factory and the medical care available in the industrial area concerned.

During a period of industrial development it is essential to plan occupational health services according to the need of the individual industry and then to give priorities according to the often limited resources of personnel and equipment.

In order to facilitate the adjustment of an industrial population to new working methods and working environment, proper vocational training is essential not only for production but also for the efficient prevention of accidents and occupational diseases.

Preventive measures concerning an industrial community should at the planning stage consider housing for the population according to reasonable hygienic standards, organization of sewage and disposal of wastes and provision of water according to hygienic standards. Transport, storage and distribution of food in the new community should also be considered at the planning stage. The organization of medical care for the population, through hospitals and out-patient medical care centres, should be included in the planning. For the social adjustment of the population in a new community the availability of schools, churches, mosques, cultural centres, etc., is of great importance.

When centres for studying industrial development are organized it is of great importance to include these preventive health measures at the planning stage in order to study the best methods, their integration into industrial development, costs, possible effects upon health, working capacity, productivity, etc.

These preventive measures concerning industries and industrial communities during periods of rapid industrial development are aiming at preventing diseases, promoting health (physical, mental and social well-being) of the population, increasing working capacity of the human labour which will also favourably influence the quantity and quality of production of industry.

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