OCCUPATIONAL HEALTH IN EASTERN EUROPE

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Progress may be fostered as much by spreading information as by research. The aim of this review is to add to the existing knowledge of the pattern of occupational health services in the socialist countries of Eastern Europe.

The work consists of two main parts. Part I is based on official information issued by government departments or typewritten reports prepared by government officials, and relates mostly to the Union of Soviet Socialist Republics and to Czechoslovakia. Part II is largely based on direct observation, discussion, and comparison of the occupational health services in Czechoslovakia, of which I have more extensive knowledge than of the other countries of Eastern Europe. This part embodies a number of conclusions and is followed by a list of bibliographical references. Throughout the review I have endeavoured to show how problems which exist all over the world are dealt with in Eastern Europe.

PART I: OFFICIAL INFORMATION

History of Occupational Health in Eastern Europe

The Eastern European country with the longest tradition in occupational health is Czechoslovakia. The beginning of health care for workers there is linked with the development of ore-mining over the centuries. The "Jihlava Miners' Law", which dates back to the twelfth century, contains the first safety regulations for miners; among other things, it states that it is the employer's duty to ensure the help of a "wound-healer" for injured miners. Interest in occupational diseases also goes far back. At the end of the seventeenth century Bernardino Ramazzini, the "father of occupational medicine", observed pathological changes in the lungs of miners in Jachymov which, in *De Morbis Artificum Diatriba*, he connected with the working conditions in the silver mines there.

During the second half of the last century many factories were established in Bohemia and Moravia, and with the development of industry and the growing importance of the working class, increasing attention was paid to the health of industrial workers.

In 1883, laws prescribing labour inspection, including factory medical inspection, were passed in the Austro-Hungarian Empire, of which Czechoslovakia was then a part; and health insurance legislation was adopted in 1888. During these years the first workers' insurance companies were created. The services provided were primarily medical, but some doctors were also interested in preventive care. Dr. J. Rambousek, who later became the first professor of occupational medicine at the University of Prague, worked in the Příbram mines as an insurance company doctor, and wrote the first textbook on occupational medicine to be published in Czechoslovakia.

During the period between the two world wars the largest factories established their own health services, either under pressure from the workers or voluntarily.

Occupational medicine as a special branch began to develop in Czechoslovakia in 1931 when, under the guidance of Professor J. Teisinger, the first centre for occupational medicine was founded in Prague. The centre was concerned with the examination, treatment, detection, and follow-up of occupational diseases. Other centres were soon set up in which the doctors dealt mainly with the prevention, diagnosis, and treatment of occupational diseases, and programmes of industrial hygiene and physiology. Before the second world war important

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changes in the administration of the services and in the responsibilities given to the medical staff led to a considerable improvement in the industrial health services. The greatest changes, however, took place after the second world war when, in 1945 and again in 1952, the whole system was reorganized in accordance with the Soviet concept of industrial medicine.

Letavet (1957), referring to the history of occupational health in Russia, and later in the Soviet Union, mentions as the earliest of the pioneers A. N. Nikitin, who in 1847 wrote a systematic account of the problems of industrial hygiene and occupational diseases. A particularly important contribution was made by F. S. Erisman (1842-1915), author of *Occupational Hygiene or the Hygiene of Physical and Mental Work*. Credit is also due to A.D. Pegozhev and to E. M. Dementev, who lived more recently. S. M. Bogoslovsky (1870-1936) is mentioned by Letavet as the foremost among those concerned in the organization of industrial health services in Russia. An important role was also played by the great Russian physiologist, I. M. Sechenov (1829-1905).

Letavet's treatise on occupational diseases recognizes the principles of the 1917 Revolution and of the Soviet system as the basis of the development of occupational health in the Soviet Union and in the Peoples' Democracies of Eastern Europe.

The main branch of the national economy in the U.S.S.R. is industry, production being the most important factor in the rising standard of living and the social progress of the community. In 1957, industrial production is said to have been more than 30 times greater than in the pre-revolutionary period and three and a half times greater than in 1940. An important place in the health programme is obviously given to occupational health, to keep pace with industrial development. Workers and employees, together with their families, constitute approximately 60% of the population.

Development of Public Health Services in the Soviet Union

Recommendation 112, adopted by the International Labour Conference in 1959, defines an occupational health service as "a service established in or near a place of employment for the purposes of (a) protecting the workers against any health hazard which may arise out of their work or the conditions in which it is carried on; (b) contributing towards the workers' physical and mental adjustment, in particular by the adaptation of the work to the workers and their assignment to jobs for which they are suited; and (c) contributing to the establishment

and maintenance of the highest possible degree of physical and mental well-being of the workers." This concept does not apply in the Soviet Union or the other socialist countries of Eastern Europe, where the term is taken to mean a combination of curative and preventive services for the working population. Although this point will be expanded later, it should be stressed now that the term "industrial medical officer" used in most Western European countries is not applicable to his opposite number in Eastern Europe, one of whose main duties is the treatment of the sick worker, so that his function is that of a general practitioner as well as an industrial medical officer.

Another basic consideration is that, while in the Western countries occupational health services usually fall under the Ministry of Labour or another department independent of the central public health administration, in the Soviet Union and in the countries of Eastern Europe it is the Ministry of Health which is directly responsible for these services. This system has had far-reaching implications for the shaping of the present pattern of occupational health services and must be taken into account when considering the development, the recent advances, and the trends of occupational health in Eastern Europe.

In information material prepared by the Government of the U.S.S.R., it is stated that a heavy burden of neglect in the field of health was inherited from the previous régime. The general death rate in 1913 was 30.2 per 1,000 people. Infant mortality in the same year was 273 for every 1,000 live births, or three to four times higher than in Western European countries. The average life span did not much exceed 30 years, considerably less than that for populations of other European countries. For the country as a whole there was only one doctor for every 7,000 inhabitants, and the number of hospitals was very small.

One of the basic principles of Soviet public health since the Revolution has been that all public health establishments in the country belong to the State. The public health services are directed and controlled through the Ministries of Health of the Soviet Union and the autonomous Republics. The Academy of Medical Sciences, several major research institutes, the State Health Inspectorate, and the State medical press come directly under the Ministry of Health of the U.S.S.R. Curative and preventive services, hygiene, sanitary, and epidemiological services, sanatoria and health resorts, the production and sale of drugs, and the training of doctors and paramedical personnel all come under the respective Ministries of Health of the Union's Republics.

Reorganization of the administration of public

health services in rural districts was begun in 1956 with the object of merging the district public health department, the district hospital, and the sanitary and epidemiological station (which will be referred to as "sanepid") into a single institution, the district hospital, under a senior doctor responsible for all medical institutions and services. The former district department of public health was abolished and its duties handed over to the chief district medical officer who combines them with those of senior doctor of the district hospital. The district "sanepid" became the sanitary epidemiological department of the district hospital. The chief district medical officer has three deputies in charge of the medical, sanitary-epidemiological, and administrative services, respectively.

All medical services in the Soviet Union are organized on the same principle and employ the same methods. Their work forms an integral part of the planned national economy. The Ministries of Public Health of the U.S.S.R. and of the Union Republics supervise the work of the health services and institutions of all departments and organizations and reach decisions on the most important scientific and organizational problems of public health administration. The local councils of workers' organizations have public health sections which collaborate with hospitals, out-patient departments, crèches, maternity homes, and so forth. Particularly noteworthy is the enormous amount of work done by the central and local branches of the Red Cross and Red Crescent Societies. These societies, which have a membership of over 22 million, enlist the participation of the working population in public health work, disseminate medical knowledge, promote the organization of first aid, particularly at places of work, and the prevention of accidents and disease in factories and schools and on collective and State farms. They also undertake health education and provide training facilities for employees in nursing.

An outstanding feature of the public health services is the sanitary and epidemiological station already mentioned, which is the spearhead of the fight against epidemic diseases. In 1956 there were about 6,000 such stations throughout the country providing comprehensive and qualified services.

Soviet health legislation sets a series of general standards of hygiene for town planning, factories, dwellings, hospitals, schools, and other premises. Factory directors, managers or tractor stations, State farms, and collective farms, teachers, headmasters, and hostel wardens are required to maintain proper standards of hygiene in their establishments. In this connexion the most important role is played by the "sanepid" which, besides its own routine work, controls and co-ordinates the other health

services and institutions within its field of competence. Each "sanepid" has three main departments, a sanitary and epidemiological department, a public health laboratory, and a disinfection department. In large industrial towns there is a public health laboratory, and in addition the "sanepid" has a special department of industrial hygiene.

"Sanepids", like other public health services, are under the dual control of the local public health authorities and the central sanitary and epidemiological authorities. In addition, research in a number of fields is carried out by institutes of sanitation and hygiene, university departments of communal hygiene, and a number of sanitary and epidemiological stations under the direction of the Academy of Medicine of the U.S.S.R.

Occupational Health Services.—As already stated, occupational health is a part of the public health system. Its basic principles may be summarized as follows: (1) The attention of occupational health services is directed to the individual as well as to his environment. (2) The individual is looked after both in health and in sickness. (3) Priority health care is given to workers, especially to those in heavy and dangerous occupations. (4) Special consideration is given to the child and the young person. (5) Emphasis is placed on prevention. (6) Services are provided by the State free of charge.

The first of these principles, based on the recognition of the influence of living and working conditions on the individual's health, has been one of the leading factors in the modern approach to occupational health in the Soviet Union. The principle of priority health care for workers, applied in all fields of public health, such as hygiene, control of infectious diseases, and health education, expresses the country's concern for this group of the population.

While priority in the establishment of factory medical services is given on the whole to mining, foundries, the chemical industry, heavy engineering, and the building industry, the type of service depends also on the economic importance, size, and occupational hazards of the undertaking.

In accordance with the principle of priority care for the younger members of the population, there are special provisions for female workers, particularly expectant and young mothers, and for children and adolescents.

The stress laid on prevention is particularly evident in the factory health service where the works doctor, besides his routine examination of the worker, collaborates in the control of the working environment. Out-patient services and hospital care are

provided free of charge for all women in the factory during pregnancy, whether they belong to national insurance schemes or not, and in all cases of occupational accident and disease. Factory health services are also provided free of charge for members of the workers' families.

Organization of Factory Health Services in Czechoslovakia

In Czechoslovakia places of work are divided into three groups according to the occupational hazards encountered there and their economic importance. The first group includes mines, foundries, chemical factories, large building concerns of national importance, electric power stations, the oil industry, railways, and atomic energy plants; the second group includes heavy engineering plants; and the third group, the remaining types of enterprise. The health service provided depends on the group to which the factory belongs; from the first to the third group, legal requirements decrease in stringency. For example, in the first group there must be a works doctor for every 800 workers, one for every 1,200 in the second group, and one for every 1,600 in the third group of factories. The system in Czechoslovakia contains the following units:

1. **Factory Medical Station.**—Sometimes known as the "health post" (*Zdravpunkt* in the U.S.S.R.), this is where the works doctor or the nurse in charge is stationed; it is administratively controlled by the district hospital or by an occupational health unit, defined later.

(In the Soviet Union in 1955 there were 6,037 health posts staffed by doctors, and 6,415 in 1956. The number of health posts run by auxiliary personnel (*feldshers*) was 12,494 in 1955 and 13,564 in 1956.)

2. **Factory Out-patient Department (Ambulatorium).**—This includes the consulting rooms of the works doctor, the dentist, and other specialists, usually a physician, a surgeon, and a gynaecologist. There are also nurses, dental assistants, and laboratory personnel.

3. **Factory Polyclinic.**—The polyclinic, which may be considered as a larger "ambulatorium", usually includes, in addition to the personnel listed under the previous heading, a physiotherapist, an ophthalmologist, an ear, nose and throat specialist, a dermatologist, a neurologist, and a radiologist. Additional services are sometimes provided to ensure complete medical and preventive care. An in-patient department is annexed to the out-patient department at

some factories to provide hospital facilities for those patients without the opportunity for home care.

4. **Factory Hospitals.**—These are established in factories of particular importance and work in close co-operation with the factory polyclinic.

5. **Night Sanatoria.**—These are to be found in large plants, their task being to improve and supplement the out-patient service for workers whose health is impaired but who are still able to work. Workers admitted to the sanatoria spend their free time there under skilled medical observation and are given any treatment, including diets, which may be required.

(In 1955 there were 469 night sanatoria in the Soviet Union with a total of 15,805 beds, 585 in 1956 with 20,700 beds, and 995 in 1959 with 39,000 beds (Health in the U.S.S.R., 1960a). In recent years "solaria" and "inhalatoria" have been used to an increasing extent, especially in the chemical and coal-mining industries.)

6. **Factory Crèches.**—These provide for the upbringing and health care of children aged from 3 months to 3 years, and are established in factories where there are at least 20 children in need of such facilities.

7. **Factory "Institutes of National Health".**—Established in particularly important large plants, they combine all the factory health services and act as health posts, out-patient departments, polyclinics, hospitals, and night sanatoria.

(In the Soviet Union, where such units are called "basic occupational health units", there were 725 in 1951, 575 of them with in-patient departments. By 1956 the figures had risen to 964 and 829 respectively, while the number of beds provided for in-patients rose from 47,527 in 1951 to 84,970 in 1956.)

Eastern European Countries Generally

The main duties of the occupational health unit are the treatment of out-patients and the pre-employment and periodical medical examination of workers. It is also required to watch for any possible threat to health and to draw up, with the assistance of the management and trade unions, a comprehensive list of measures aimed at improving the health of the worker and the hygiene of his environment.

Another important group of services are those administered by the industrial hygiene department of the regional "sanepid", to which reference has already been made. It is staffed by doctors and

specialists in fields related to occupational health, such as chemists, physicists, biologists, and sanitary technicians, and has laboratory facilities enabling it to carry on research on problems of industrial hygiene existing in the region. Its main duties are: to keep a list of, and a close watch on, places where dangerous work is undertaken; to collaborate with other services in the control of occupational disease; and to provide technical guidance for the district "sanepid" and for works doctors in industrial hygiene and research.

In Czechoslovakia the "sanepid" department of industrial hygiene receives a considerable amount of technical help from the occupational health section of the regional institute of national health, which deals with the diagnosis, registration, treatment, and control of occupational diseases and the assessment of working capacity, provides consultant services for health institutions in the region, and participates in epidemiological research.

Managements, trade unions, and the workers themselves all participate extensively in the work of the medical services. In the majority of industrial concerns there are standing joint committees for the prevention of disease and accidents. The trade unions, through their social insurance committees, watch the work of the health services, while workers' insurance representatives keep in touch with the patient to see that he is following the prescribed treatment and that he is well looked after. The improvement in the occupational health services is said to have considerably lowered morbidity in the Soviet Union, where in 1955 absenteeism due to sickness showed an average decrease of 15.1% for all branches of industry as compared to 1954.

Functions of the Works Doctor.—The key figure of the industrial health service is the works doctor. This official, like the medical officer of health in his community, is responsible for the health of the workers in his factory and for the standard of the services of which he is in charge. The works doctor is expected to combine the duties of a physician, or general practitioner, with those of a hygienist. He needs thorough background training in internal medicine, surgery, and hygiene and must be able to consult specialists in internal medicine and hygiene and, for occupational accidents, the surgeon.

His duties can be divided into three main groups:

1. *Preventive and Medical.*—The works doctor (a) gives first aid in case of accident, industrial intoxication, and acute disease; (b) advises the worker whether he is medically fit or unfit for work; (c) provides treatment for out-patients; (d) assesses the working capacity of employees, keeps records

of the disabled, investigates, in collaboration with management and the workers' organizations, the causes of incapacity for work, and recommends measures for reducing morbidity and accident rates; (e) controls the health of the workers' by means of medical examinations, including pre-employment examinations for new entrants, and assesses their suitability for the jobs for which they have been recommended; (f) makes periodical examinations of workers in dangerous occupations and investigates the influence of working conditions on their health; (g) regularly checks the health of all young persons and female workers, particularly expectant mothers; (h) looks after employees entitled to priority care and periodically examines all employees who are sick or in poor health; (i) keeps records of the workers' medical history and regularly examines employees who, because of the condition of their health, are more liable to fall ill.

2. *Sanitary and Epidemiological.*—In collaboration with the "sanepid" he (a) regularly inspects places of work and keeps the necessary records, recommends measures to improve hygiene and safety conditions, and ensures their application; (b) supervises the enforcement of statutory health requirements, particularly in connexion with the building of new premises or the introduction of new production processes; and (c) ensures that epidemiological measures are carried out in accordance with the recommendations of the sanitary and epidemiological services.

3. *Health Education and Training.*—The works doctor (a) participates in health education work under the guidance of the medical officer in charge of this field; (b) guides and controls the work of volunteers, particularly of the members of the Red Cross, and systematically supplements their training; and (c) trains new employees in the principles of hygiene and safety at work.

Assessment of Working Capacity of the Handicapped in Rumania.—In Rumania, the assessment of the working capacity of the handicapped is one of the duties of the factory medical officer, who is assumed to be best informed as to the health, work, social conditions, and living and working environment of the individual. The health authorities in Rumania have decided to set up a network of advisory commissions headed by specialists to provide technical guidance for the medical officer. These commissions help to improve the doctor's standard of work and ensure better care of the patient. They collaborate either at the consulting room of the

works or community doctor or at the institutes of national health. Most of the commission chairmen are specialists in internal medicine but are replaced by experts in other branches of medicine when required. A representative of the trade union organization may also be invited to sit on the commission to help in assessing the effect of living and working conditions on the patient's health.

Chronic cases, where working capacity is affected over a prolonged period or permanently, are dealt with by commissions other than those concerned with the assessment of temporary incapacity for work.

Health Education.—Health education deserves special mention in view of its considerable development in the Eastern European countries. It is mainly the concern of the State, and as such is carried on by public health authorities, education establishments, and other governmental agencies and services. An important contribution is made, however, by organizations independent of, or not directly dependent on, the State, for example, trade unions, Red Cross and Red Crescent Societies, and medical associations. The importance of health education in the Soviet Union was stressed by N. A. Semashko, who wrote: "It is no exaggeration to state that prevention begins and ends with health education. This is particularly true in our country". Informing the population about health matters is mainly the task of health education centres, a network of which covers the Soviet Union. They are staffed by some 650 doctors and 550 auxiliary medical workers. In addition there are over 1,500 doctors and health educators in the "sanepids" who devote much of their time to the same end. The health education centres organize lectures and radio and television broadcasts. Health education films are also widely shown and millions of copies of popular brochures on hygiene are published. In addition to the measures taken by the State, there is increasing participation by the public in the promotion of health. Voluntary health associations and citizens' health service groups do much in this respect. Health is considered a positive factor in improving living and working conditions and increasing life expectancy and working capacity.

As mentioned above, the works doctor plays an important role in this field as, like every physician, he is required to give a number of lectures on health education each month (in the U.S.S.R., at least three). The doctor receives payment for his health education activities, which he carries out in close collaboration with the Red Cross, the Red Crescent, and the trade unions.

Training of Medical Personnel.—Large numbers of medical and auxiliary personnel are needed to meet the health requirements of the population as a whole, especially those of privileged groups such as the workers. Vinogradov (1957), in a publication on health protection in the Soviet Union, calls the workers "our main concern" and points out that altogether 50 million people are employed in the national economy of the U.S.S.R. Another background information document, by Vladimir Mayevsky (1958) states that the guiding principle of the Soviet public health service is priority for the working people who are creating the society's wealth by their labour.

In harmony with the principles of the Soviet public health system, medical education has developed certain particular features which deserve mention. Since 1917 there has been a great increase in the number of teaching institutions. In 1913, a total of 13 medical colleges, with an enrolment of approximately 9,000 students, graduated about 900 doctors annually, whereas in 1957 over 72 medical schools, with an enrolment of 148,000 students, graduated more than 19,000 doctors. The period of medical training has been increased to six years since 1947. In 1930 the Ministry of Health became responsible for medical education, which, it must be stressed, is not the concern of the universities whose responsibilities appear to lie mainly in the fields of the arts and basic sciences. In fact, the medical student associates almost exclusively with students in the medical school from the very beginning of his training period and has no contact with students of other faculties.

Since 1930 the medical student has been expected to choose, at the time of his admission to the medical school, one of three branches of basic training in medicine, general medicine, paediatrics, or hygiene. The training period for all three groups is six years. Clinical training starts after the second year and it is at this stage that the differentiation between the three basic training systems takes place. After the fifth year the medical student is offered facilities for specialization in a particular field to which he is encouraged to devote as much time as possible. Special tuition and other facilities are provided to enable the student to pursue his particular field of interest. The student is eligible for admission to a medical school only after completing his 10 years' general school education.

Doctors working in factories are required to attend refresher courses every five years, which are organized in 13 training centres. In addition to these courses, of some three to four months' duration, there are short training courses varying from two weeks to two months.

Research.—Special attention is devoted to the promotion of the medical sciences in the U.S.S.R. In 1956, 268 scientific centres, 77 medical and pharmaceutical institutes, and 11 institutions for further medical training were engaged in medical research. In the same year, the medical faculties, research institutes, public health services, and institutions and authorities under the Ministries of Health employed 28,663 scientific workers.* Although most of the research institutes come under the Ministries of Health of the Republics of the Soviet Union, all research work is co-ordinated by the Academy of Medical Sciences of the U.S.S.R. The Ministry of Health, which is the central supervising authority in this field, deals with all technical and scientific problems through the Academy of Medical Sciences, which co-ordinates and supervises medical research in the whole of the Soviet Union, and reviews advances in medicine and advises the Ministry in regard to their practical application. There are also Scientific Medical Councils in the constituent Republics which advise on the practical application of research.

From the point of view of organization, medical research institutes may be grouped as follows: (1) institutes of the Academy of Medical Sciences; (2) institutes of the Ministry of Health of the U.S.S.R.; (3) institutes of the Ministries of Health of the constituent Republics; and (4) institutes of the departments of health of regions (*oblasts*), towns, or districts (*rayons*).

Research in the U.S.S.R. is centrally planned. The Academy of Medical Sciences has an annual budget of approximately 24 million roubles, roughly 24 million dollars. Special attention is devoted to experimental pathology and to the physiology of the central nervous system. The influence of Pavlov and his school is very evident in the programme of research.

There are 17 institutes dealing with problems of occupational health and industrial hygiene. Of these, nine depend on the Academy of Medical Sciences, six on the trade unions, and one each on the coal industry and the oil industry. Training and refresher courses for safety engineers and safety inspectors belonging to the trade unions are run by the second group of institutes. The Central Institute of Occupational Health and Occupational Diseases, which is located in Moscow and directed by A. A. Letavet, supervises eight similar institutes in Leningrad, Gorky, Sverdlovsk, Kiev, Kharkov, Stalino, Tbilisi,

and Magnetogorsk. Each institute tends to give priority in its programme of research to the most acute problems existing in its region. The Moscow Central Institute of Occupational Health and Occupational Diseases is one of 13 institutes where refresher courses for works doctors are given.

PART II: INFORMATION BASED ON PERSONAL EXPERIENCE

The following information and general observations, which are mainly the outcome of authorized visits and meetings with government officials within the socialist republics of Eastern Europe, must be read against the background of the social and economic conditions of a number of countries spread over a huge territory which, bound together by a common policy, are rapidly developing their potentialities along a road which is by no means easy or short.

One of the first impressions on visiting factories in Eastern Europe is that a large number of them are new and the result of modern conceptions. The planning, for example, is rational: space, lighting, and ventilation have been well designed and house-keeping is good. Moreover, in countries such as Bulgaria and Rumania, where many branches of industry have been started fairly recently, little hampered by tradition, the size of the factories has been retained within reasonable limits, leading to the conclusion that some of the harmful effects of the industrial revolution in Western Europe have been, and are being, avoided. This observation does not, of course, apply to industry in general as unhealthy concentrations of old factories and workers' living quarters still exist where industrialization is not a modern development. Yet it is easy to see the efforts made to prevent the evils of the unplanned and disorderly growth of industry.

It is invigorating for a medical man to discover that, in an effort to avoid past mistakes and remedy the effects of a poor physical working environment, medical advice is sought at an early stage. In the U.S.S.R. and Czechoslovakia, for example, works doctors, besides their duties in connexion with the maintenance of adequate conditions of hygiene in the factory, are requested to supervise the selection of the site, and the planning, building, and putting into operation of new industrial concerns.

Whether the driving force is utilitarian or humanitarian—and it is very likely both—there is a clear awareness that production depends on two main factors, the machine and the man, and that both must be well looked after if productivity is to reach the highest possible level. In this connexion, the programme of housing for the workers is unquestion-

*In 1959 the number of scientific institutes, together with their subsidiaries and branches, was 279, the number of institutions for higher education 84, and the number of students therein 171,000; the number of paramedical educational institutions was 493, and the number of students therein 154,500 (Health in U.S.S.R., 1960b).

ably a factor of great importance in keeping men fit for work. Difficulties encountered in the solution of this almost universal and sometimes extremely acute problem have undoubtedly been the origin of the impressive schemes for workers' rest homes, which are often referred to by the German name *Kurort*. In Bulgaria, with a population of about 7,200,000, including 1,000,000 industrial workers, some 200,000 workers every year enjoy holidays at the mountain resort of Borovetz and at Varna, a series of modern hotels on the Black Sea. Varna is also used by workers from Poland, Czechoslovakia, the U.S.S.R., East Germany, and Hungary. In 1958, 50,000 workers spent an average of 20 days there at the all-inclusive price of \$3 to \$4 per day.

Despite the somewhat barrack-like atmosphere and a certain loss of the individual's personality which is to some extent a consequence of the scheme, the aim of which is to restore the worker after the fatigue of the year's work and to give him new energy for higher productivity rather than recreation, the contribution made by the rest homes to the health of the working classes deserves recognition.

The provision of night sanatoria or "prophylactaria" annexed to industrial concerns is in line with the principle of keeping the worker fit for his job. In these sanatoria, the chronically sick, the convalescent, the debilitated, and the stabilized cases of tuberculosis can have night rest or temporary day accommodation, adequate nutrition, and medical supervision or care while still being able to carry on with their work full- or part-time.

Considerable attention is paid to nutrition, and it seems that it goes beyond ensuring protection against food poisoning or infection, and providing cheap meals and good canteens. In some factories visited in Bulgaria, dietetic meals are available at low prices for the gastric patient, the diabetic, and other workers in need of such facilities.

Dental health ranks very high among the priorities of health services. Its association with nutrition is well recognized. It is perhaps the field where the three phases of medicine, prevention, cure, and rehabilitation, are best applied. Dental services, which are provided with an astounding degree of liberality and almost on the spot, are completely free of charge. It is unnecessary to stress their favourable direct or indirect influence on the health of the worker, on absenteeism, on productivity, and on human relations.

In any description of occupational health services in Eastern Europe, special consideration must be paid to the works doctor, who is really the key element of the system. His functions having been described in the first part of this review, I shall stress here only his leading role and the legal powers

granted to this officer, whom we have called "works doctor", although his professional background and duties make him more comparable to the type of general practitioner found in Western Europe.

Primarily concerned with internal medicine and surgery, his main interest is the curative services for the workers. Despite the fact that his duties, which include an increasing number of preventive medical examinations and enforcement of health regulations, take him further and further into the field of prevention, it is reported that efforts to make him more conscious of and active in this branch of medicine meet with some resistance. The explanation seems to be that, just as in other parts of the world, the appeal of preventive medicine to the medical man is weaker than the call of curative medicine.

The works doctor plays an important role in the everyday life of the factory. In a major industrial concern he is the head of a large occupational health team of physicians, medical specialists, and auxiliary personnel. In a factory visited in Rumania, for example, there were 42 doctors for 14,000 workers, that is, about three for every 1,000 employees. Thus the works doctor, who has to direct and co-ordinate the work and supervise collaborators and subordinates, becomes an important central figure but has to sacrifice much of his medical activity to administrative functions. Routine work forces him to expand the breadth of his knowledge at the expense of depth, with the possible sacrifice of technical skills, and turns him into a highly responsible, multi-purpose medical administrator, sometimes slightly biased or unbalanced by his one-sided technical background which may have been laboratory work, radiology, otorhinolaryngology, obstetrics, or other speciality. Considerable attention is now being paid to the obvious need to ensure more adequate and uniform training of this category of medical officer.

Owing to his dual functions in the medical and hygiene fields, the works doctor comes under the district medical officer (usually the director of the local hospital) on the one hand and under the sanitary-epidemiological service of the district or region on the other. In addition, he reports on technical matters to the inspectors who visit him periodically from the central administration (the State or federal government, or both, according to the national system).

As has been seen, the legal power of the works doctor is considerable. In the U.S.S.R. he has the right, through the state inspector of health and the chief medical officer of the "sanipet", to apply sanctions against those who contravene hygienic standards and regulations; to impose fines on them; to refer cases of contravention to the public prosecutor; or to obtain the infliction of disciplinary

penalties. In exceptional circumstances, when work is being carried out under conditions injurious to the workers' health, he can even have it stopped.

Among the activities of the works doctor that deserve special mention is his contribution to health education. In Bulgaria, the works doctor is expected to spend one-quarter of his time on health education and on the inspection of the working environment, one-quarter on first aid, one-quarter on treatment of the sick worker, and one-quarter on paper-work and immunization. In addition, he organizes and supervises collective physical exercises which the workers are expected to perform on the spot at regular intervals during the day.

Of paramount importance for the improvement of occupational health in the industrial concern is the "morbidity meeting", usually held once a month by the works doctor, at which sickness absenteeism and its effect on work output are discussed by a group of officials, including the manager, the factory engineer, and representatives of trade unions, the Red Cross, or Red Crescent. Reports on these meetings, containing suggestions for remedying the situation, are circulated among the departments concerned.

In fact, the role of the works doctor is so important and his field of responsibility so wide that he might be expected to have more secretarial and auxiliary help than he is given at present. In this connexion it seems that it would pay to remove from the shoulders of the doctor a non-essential part of his work by providing more and better qualified nurses, whose training at present often lasts only two years.

Closely related to this question is the controversial problem of the "*feldshers*", auxiliary personnel technically midway between nurses and doctors and originally expected to make up for the lack of doctors. It is interesting to note that while "*feldshers*", a feature of the pre-Soviet public health administration, are still trained in the U.S.S.R. where they are now given the same training as nurses, other countries, such as Poland and Bulgaria, discontinued the practice a few years ago as they preferred to concentrate instead on the training of doctors and nurses.

In the socialist countries, as almost everywhere else, there is a tendency to pay more attention to the statistical assessment and evaluation of biological phenomena. This holds true for the works doctor, who shows an increasing interest in recording any departure from health of the worker. Unfortunately sickness absenteeism codes are not always the same, and comparisons between countries are hindered by lack of internationally accepted definitions and classifications.

A field in which there seems to be room for im-

provement is social work. Professional social workers are not encountered in industrial concerns. It should, however, be said that a considerable amount of activity in this field is carried on by members of the trade unions, Red Cross or Red Crescent and, to a certain extent, by the occupational health team. In this connexion also the "morbidity meeting", mentioned above, which aims at finding out the causes of trouble inside the factory, plays a considerable role. There is increasing awareness in some governmental circles of the value of trained personnel, for example in Poland, where the training of medico-social workers is under close consideration.

An important question is the means at the disposal of the occupational health team. Factory hospitals, a number of which have been set up in premises built for other purposes, often seem badly in need of improvement as far as planning, equipment, and maintenance are concerned. Surprisingly enough, their equipment is sometimes lavish and highly specialized, and one cannot help wondering whether the expense is always economically and technically justified, and whether there is no overlapping with the local hospital which is also expected to be adequately equipped and better staffed to detect and care for special cases of disease.

The labour force is increasing at a great rate in line with the democratic trend of the population. The percentage of young workers is fairly high. Industrial development has led to the employment in factories of large numbers of agricultural workers, and concern is often expressed about the sickness and accident rates and the adjustment difficulties reported for this group of the population. Another cause for concern is that the conditions of work of women do not always conform to the standards of the International Labour Organization. Women are in fact sometimes seen in hard or dangerous occupations or on night work.

While the value of pre-placement and periodical medical examinations is well recognized, the application of psychological tests is resisted on the principle that they discriminate against equal rights. However, the use of some of these tests for special categories of workers, for example, railwaymen, is a sign that this theory may well come under revision in a number of places before long. The mass screening of workers, which in the United States of America is stated to detect some 15 to 20% of unsuspected cases of disease, has not the same popularity in the socialist countries. In the U.S.S.R. and Bulgaria, however, six-monthly cytological examinations for the detection of cancer of the uterus are carried out.

While stress is placed on the control of the physical working environment, on medical care, and

on the prevention of disease, mental health and the psycho-social environment are somewhat neglected.

There have been great achievements in the field of physical medicine: balneotherapy, electrotherapy, and mud baths are given in a combination of physiotherapy and psychotherapy to large masses of workers, and satisfactory results have been reported.

The level of education of the worker is being raised by longer schooling which in turn to some extent prevents young workers from entering employment at too early an age.

Discipline in the workshop shows considerable variation between the individual countries. In some places workers are seen smoking, whereas elsewhere infraction of disciplinary rules, including the prohibition of smoking, may result in the worker being fined by the industrial medical officer. The same variation exists as far as rate of output is concerned, some factories appearing badly in need of work rationalization.

Growing attention is being paid to the importance of groups of disease and of occupational accidents in regard to temporary incapacity for work. At the Third Meeting of Ministers of Health of the Socialist countries held at Prague in 1958, the following causes of sickness absenteeism in Czechoslovakia were reported, in decreasing order of prevalence: acute infections of the respiratory tract, accidents, diseases of the locomotor system, and gastro-intestinal troubles. Diseases of the nervous system, as well as those of the locomotor system, were reported to have increased in importance, while the cardiovascular diseases came first as far as length of absence was concerned, followed by tuberculosis and the locomotor diseases (Stich, 1958).

In Eastern Europe, as in the great majority of countries in the world, silicosis is the most serious occupational disease both as regards the number of persons affected and its after-effects.

Although data on occupational accidents are not easily obtainable, this cause of absenteeism is of obvious concern. Adjustment difficulties of workers recruited from agricultural areas, inadequate training of new workers, and lack of adequate safety measures regarding machinery are among the reasons for its high incidence. Such factors as work selection and placement, labour turnover, wages, and promotion policies certainly play a role which has not as yet been sufficiently investigated. Labour turnover, for example, is said to be a very great problem in Poland, where it is estimated to be 30% annually. The ownership of farms in the country by newly recruited industrial workers, the tendency of workers to move to less dangerous trades, and the search for better salaries or better living conditions are assumed to be among the causes of this situation.

Efforts are being made to sort out the single factors from the general picture and to assess them, but these efforts need to be increased. In the complex picture in the U.S.S.R., the general rise in the standard of living of the population, the absence of unemployment, and collectivism are said to be positive factors in preventing the development of neurotic tendencies.

Important campaigns have been launched against occupational diseases, and the stringent requirements of the law and the high standard of occupational health inspection have considerably reduced the numbers of cases of disease. Research, which has been very active, especially in the field of industrial toxicology, tends to a continuous lowering of maximum allowable concentrations of toxic substances in industry by making detection tests more sensitive and of wider application. Worth mentioning is the tendency in Prague under Teisinger to assess toxic hazards by detecting and evaluating the concentration of either the toxic substance or its metabolites in the body of the worker exposed. This relatively new approach has led to the establishment of a number of so-called "maximum biological concentration" tests which are also of value for the assessment of the degree of exposure of the worker to the toxicological risk.

Conclusion

With reference mainly to the Soviet pattern of services usually encountered in the countries under review, it should be stressed that industrial hygiene, safety, and medical services in Eastern Europe are dealt with and supervised by three agencies.

(1) The ministry in charge of the establishment, most often the Ministry of Industry or the Ministry of Communications, through the director and, in particular, the chief engineer of the industrial concern, is responsible for the enforcement of legal safety regulations. In the U.S.S.R. the Ministry of Industry has its own department of occupational safety.

(2) The trade unions, which have a network of services throughout the country, deal directly with the technical aspects of occupational safety and accident prevention.

(3) The Ministry of Health is responsible for all medical programmes of occupational health and, through its two main groups of service, the medical service and the sanitary and epidemiological stations, deals with curative medicine, preventive medicine, and control of the working environment.

The overall structure and development of any medical activity organized for the worker appears to benefit considerably by coming under the public

health administration. This system is also of importance because it prevents the friction, overlapping, or gaps sometimes observed in countries where occupational health is the concern of more than one government department. Furthermore, occupational health is well co-ordinated with other public health services, and the industrial population does not tend to become an isolated group of the community; the trade unions are in contact with the public health administration at an early stage and are in a better position to understand and contribute to any programme for safeguarding and improving the health of the worker.

Occupational health in Eastern Europe, as has been stressed, is a combination of curative and preventive services. This avoids "splitting the worker into two halves", that is, the worker within the gates of the factory and the same worker back in his community life is not looked after by two separate independent health systems. This concept is now meeting increasing favour in Western Europe despite the fact that the view generally held there is that the industrial medical officer should deal only with preventive medicine. In many circles then the idea seems to be gaining ground that the occupational health service should provide some treatment for the worker to keep him at his job during minor illnesses and to satisfy his demand for medical care on the spot. Evidence of this trend, which follows the line taken in Eastern Europe, can be found in the establishment in some countries of comprehensive occupational health services dealing with curative as well as preventive medicine where, for example, industrial concerns are too far away from community health services.

Another positive aspect of the occupational health services in Eastern Europe is their emphasis on the control of the physical working environment, mostly by the remarkable development of the sanitary and epidemiological stations. In Czechoslovakia,

for example, there are some 60 industrial hygiene inspectors. The equipment and the legal power granted to their medical personnel are also worthy of note.

Existing problems include the organization of health services for small industrial concerns. Research, which is actively carried on, should be intensified in the mental health and social fields. It would be worth exploring the prevalence of psychosomatic diseases and the effects of different types of jobs on ageing.

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