

356.33:613.67:616-036.22:355.1(437.1/.2)

PROBLEM OF THE HYGIENIC AND EPIDEMIOLOGICAL SERVICE IN CONDITIONS OF THE CZECH REPUBLIC ARMY

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History

Preventive medicine (hygiene) is as old as therapeutic medicine because its roots are in the experience of ancient doctors. Scientific development of this field started with the development of the natural sciences 150 years ago. It has been proven that illness and health are the products of mutual influences of external and social environment on the life of an individual person. It is possible to influence health by adjusting those conditions.

Prof. Kábrhel was the founder of the Czech Hygienic School. His pupils, Prof. Roček and Prof. Kredba, reached a significant success as well. Prof. Mucha belongs among the other significant Czechoslovak hygienists. Prof. Dvořák, Prof. Tušl and Prof. Srb are the significant hygienists in Hradec Králové area. The founder of post-war Military Hygiene, Gen. Prof. Liškutín and Col. Prof. Vincent, are the significant military hygienists. Prof. Liškutín advanced Military Hygiene as a field of science to a higher degree. He used his rich experience from World War II, which he took part in as the military hygienist in both European front lines, after his return home, and he built with his colleagues the Czechoslovak Army Hygienic and Epidemiological Service (HES), the Medical and Statistical Service, the Laboratory Service and the Transfusiv Service and he formed the basis for the organization of work medicine as well as physical education medicine.

The diseases have existed since the existence of human beings. Some of them (mainly infectious diseases) have influenced the size of population. That's why the necessary part of doctors' work has been to watch the number of ill people, and to search for the causes of diseases. Epidemiology had an unimportant place in the system of medical sciences before and after World War II. At present it plays a significant role in the developed world, mainly thanks to its epidemiological methodology. It is sometimes called the philosophy of medicine for this reason and, for example, in the USA and Great Britain it is an extension branch above other branches of medicine.

There are, as far as the object of interest is concerned, a few stages in the development of epidemiology:

1. The observation of infectious diseases in human population which has existed, as it has already been said, for a long time. For example, the so called "physici regni" dealt with this activity in the area of the Czech Kingdom since the year 1585.
2. The observation of diseases, which are not infectious, has been dated mainly since the period of greater interest of society in the so called diseases of civilization. This development occurred in most of the world in the 60s, but it was ten years later in our country.
3. The observation of risk factors necessary for the development of "diseases of civilization". Their registration follows the second stage with ten years' distance.
4. The observation of the mutual relation health - risk factor whose development has been going on in the last few years.

Epidemiology has an essential place in the Public Health Service today and it influences the other medical branches through epidemiological methodology. Prof. Raška, Prof. Žáček, Assoc. Prof. Pečenka, Prof. Červenka and Prof. Ticháček are among its best-known founders and propagators. Military Epidemiology deals with the study of the regularity of epidemic process, and the system and methods of antiepidemic measures with the aim to reach optimal antiepidemic support of the Army.

From the period after World War II until 1989, the Czechoslovak Army HES was built according to the Soviet model. The top managerial body was represented by the Chief Epidemiologist of the Army who coordinated the activity of the Service as a whole. Col. MUDr. M. Divišovský, CSc., who took part in the development and support of the Army HES, worked in the post of the Chief Epidemiologist for many years. The HES facilities (the Research Institute of Hygiene, Epidemiology and Microbiology in Prague, the Regional Hygienic and Epidemiological Divisions in Plzeň, České Budějovice and Bratislava) with the system of catchment area epidemiologists and hygienists who ensured antiepidemic activity and common hygienic supervision in the Army with the usage of a laboratory base of the hygienic and epidemiological stations, performed executive activity in the whole territory of the Czechoslovak Republic in the given period.

The Departments of Military Hygiene and Military Epidemiology in the Purkyně Military Medical Academy were entrusted with educational and research activity from the very beginning. The workers of the Departments considered this orientation not only as an important contribution of their work place to the building up of the Military Health Service, but also as the necessary part of scientific activity giving stimulations and up-to-date topics for the connection of the theory with practice.

Valuable results have been reached in the area of scientific work in the past years. It is necessary to stress that this activity of the Departments was concentrated on the solution of questions in relation to a soldier or military population and the conditions in the military service as a complicated complex of mutually influencing factors of the environment and the own activity of a soldier in particular life and working conditions from the very beginning. The concentration on the study of human factor arose not only from the development of modern hygiene, but it was also forced by the essential changes going on in the contemporary armies when the human factor entered the decisive place of troops' success in consequence of unusual technicalization, mechanization and automation of the army.

The research of energy release and nutrition of a soldier, whose results became the basis for the creation of new food portions in the Czechoslovak People's Army and contributed significantly to the rationalization of nutrition as well as to the improvement of the day's routine of a soldier, was framed in harmony with this orientation from the 50s to the 70s. The solution of the hygienic and physiological problem of performance of military specialists was formed in the Department at the same time with these tasks. The changes of physical and mental performance in long-term sleeplessness, and the possibilities to influence it with the pharmacologic drugs were studied in the laboratory conditions. The work which was done defined our knowledge about the changes of professional performance in sleep deprivation more precisely, it determined the necessary routines of work and rest in long-term continuous activity of the troops. Wide expertised work was devoted to the solution of the questions of health protection in the crews and operation of newly developing combat, transport and signal technology.

In the 80s, the development of scientific work continued in the Department of Military Hygiene both in the area of nutrition hygiene and in the area of professional performance from the study of the general problem to the research of influence of individual factors on health and man's ability to work and on the specification of the complexes of biochemical, clinical and physiological, and psychophysiological methods serving the evaluation of the health state.

In the course of the years, we can see the trend to transition of individual research works from purely microbiological in the beginnings of existence of the Department to dominantly epidemiological in the area of Military Epidemiology at present. The work was focused gradually on the questions of tularemia, yersiniosis, micotic diseases, and on the problem of selective decontamination of gastrointestinal tract and legionella infections. The epidemiological part, which dealt with research and long-term analysis of army epidemiological data with the usage of computers, prevailed gradually. At present the Department works on the questions of viral hepatitis and vaccination within a few interventional studies in a complex way. The group of disinfection, disinsection and rat destruction, which as an accredited work place takes part in the solution of many research projects and expertises, holds a permanently significant place.

Changes after November 1989

November 1989 represents not only the decisive moment in our modern history, but it has influenced as well all the areas of social life. A number of changes have been carried out in the HES in the course of the transformation of the Army. There has been a significant reduction in the managerial and executive area. The present forces and means, which the HES has available, perform their tasks beneficial to the Army only with the maximum effort. The Czech Republic Army HES is divided into the managerial part and the executive part. At present the managerial part is represented by the Chief Epidemiologist, with the Advisory Boards consisting of the Chief Specialist for Epidemiology and the Chief Specialist for Hygiene. The individual epidemiologists of the Military Health Institute, who manage the HES in their catchment area, have the key role. The Central Military Health Institute in Prague and the Military Health Institutes in Plzeň and České Budějovice and their separated work places are entrusted with the executive powers. They perform their own special activity in the Czech Republic Army. The Central Military Health Institute has the function of the methodic centre of the HES.

The HES is permanently concentrated on the primary prevention of all activity, the complex realization of antiepidemic measures with all the elements of the Military Medical Service and united approach to the solution of epidemiological problems in harmony with the present scientific knowledge. It organizes and performs the complex antiepidemic measures among troops and civilian population. It performs the analysis of the trends of sickness rate development in the Czech Republic Army with the aim to provide preventive and repressive epidemiological measures against communicable diseases, including sterilization, disinfection and disinsection. It carries out the common hygienic supervision in the Army in the whole Czech Republic territory.

Education

The Department of Military Hygiene and the Department of Military Epidemiology in the Purkyně Military Medical Academy in Hradec Králové take part fully in the basic and post-graduate education of military doctors. The educational activities of the Department of Military Hygiene are significantly wide. The attention is concentrated on the students of the 3rd year of pharmacy, the 4th year of stomatology and above all on the students of the 5th and 6th year of general medicine in the undergraduate preparation. The study of military hygiene is finished with the final examination for doctorate degree (state rigorous examination) in the branch of military hygiene. The Department of Hygiene repeatedly organizes 17 specialized courses in which the doctors of the Czech Republic Army HES, but also other doctors from the military and the civilian sector, take part in within the post-graduate education of doctors. The preparation of the military ecologists for the whole Czech Republic Army is also an important part of the present educational program. Individual scientific and educational workers are repeatedly invited to the lectures in the specialized courses organized by the Institute of Postgraduate Education in the Health Service in Prague and in the school NATO SHAPE in Oberammergau in the Federal Republic of Germany.

The Department of Military Epidemiology concentrates on the teaching of epidemiology in the undergraduate education in the 4th year of the stomatological direction and in the 5th and 6th year of general direction both within the teaching in the Medical Faculty and of course within the military and special teaching and teaching of the disaster medicine. The Department prepares a number of courses every year, which cover the basic problem of the fields - epidemiology, health and epidemiological statistics, microbiology and health management in the area of the post-graduate education. The workers of the Department are the guarantees of those fields even outside the Purkyně Military Medical Academy.

Research

The Department of Military Hygiene in the Purkyně Military Medical Academy in Hradec Králové represents the educational and scientific and research base in the area of Hygiene. In the postrevolutionary period the scientific and

research activity is concentrated on monitoring and analysis of response of human organism to the factors of external environment in harmony with the needs and requirements of the Czech Republic Army as well as with the consideration for other social needs. The analysis of incidence of risk factors, which take part in the origin of a number of diseases of civilization, is carried out and the possibilities of how to influence them are investigated. The basic requirement of preventive medicine and the message of J.E. Purkyně, who wrote in his dissertation: "The main task of a doctor is not only his effort to keep the regeneration of life already worsened, but the protection of health before it is broken and to take care of the health", is completed by the realization and enforcement of results of the research works in the therapeutic and preventive practice. The projects solving the energetic need of an individual person in extraordinary and emergency situations were worked out, considerable attention was devoted to the observation of the health and nutrition state with the concentration on the analysis of risk factors of cardiovascular diseases in the population, with the indication of specific characters in the military terrain. A number of interventional programmes, whose aim is to influence positively the health state of a military professional, were worked out. At present the very topical problem of an emergency food portion to support the troops in the emergency and extraordinary situations, is solved. The workers of the Department of Military Hygiene handle the grant projects with success. They received the financial support for those projects from the Grant Agency of the Czech Republic or from the the Ministry of Commerce. They as well work on the solution of a number of projects in the cooperation with the national and foreign scientific institutions. The results of scientific research after the year 1990 were published in many literary works and presented in congresses in the Czech Republic and as well abroad. In the postrevolutionary period the scientific and educational workers of the Department of Hygiene defended successfully three PhD dissertations, one doctoral dissertation, and four works for receiving associate professorial title and one work for receiving professorial title.

The Department of Military Epidemiology took part fully in the newly developing activities in the grant system. It received both the grant within the Internal Grant Agency of the Czech Republic Ministry of Health and the grant Know How Fund of the British Government and a few departmental grants. It as well takes part in the solution of the grant within the Eurohep of the European Economic Community. The results are repeatedly presented in the national and international forums.

The workers of the Department of Military Epidemiology defended gradually six PhD dissertations, one doctoral postgraduate study, one work for receiving associate professorial and professorial titles.

Conclusion

The present, developing in a dynamic way, forms a new space for the development and deepening of specialization of individual scientific branches. Hygiene and Epidemiology belong, without any doubt, among quickly developing fields with the primary and preventive orientation. The increasing specialization brings back the pressure on the interdisciplinary connection, so that the provided care of the individual person, the population groups and the whole population can be complex. The doctor with the primary and preventive supervision has his unreplaceable position in the newly formed teams of specialists dealing with the analysis of the health state of a man and the possibilities of positively influencing the incidence and development of not only the most common diseases of civilization but as well new communicable diseases affecting our society at the end of the 20th century.

The Army HES participates significantly in the high military readiness of all the units in the Czech Republic Army with successful performance of its basic tasks. The educational and research centre in the area of Hygiene and Epidemiology is in the Military Medical Academy in Hradec Králové and it trained a number of specialists in the last few years who reached considerable success both in the military terrain and civilian life. The results of scientific work have been an asset not only for the improvement of the practical activity of the Army HES, but a number of reached theoretical results represent further steps in the field of medical knowledge. It is constantly necessary to devote attention to the care of material and personnel support from the side of the Czech Republic Army to maintain and to improve further the educational and scientific and research activities of the Department of Hygiene and the Department of Epidemiology.