

CENTENNIAL OF THE INSTITUTE OF HYGIENE AT CZECH FACULTY OF MEDICINE, CHARLES UNIVERSITY OF PRAGUE

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This paper commemorates the centennial of the Institute of Hygiene at Czech Faculty of Medicine, Charles University – the present day Institute of Hygiene and Epidemiology, First Faculty of Medicine, Charles University of Prague. The institute was founded in the school year 1897/1898 by Gustav Kabrhel, Max von Pettenkofer's and Robert Koch's disciple who remained head of the Institute until 1928. His successors were Josef Čančík (1928–1957), Miloš Kredba (1957–1965), Pavel Macůch (1965–1983), Otakar Klein (1983–1990) and author of this paper since 1990. Each of them, in his own way, significantly influenced the Institute's orientation, professional profile, naturally in accord with social needs and possibilities of the particular periods, which were frequently stigmatized by political convulsions. The portraits of the Institute's heads illustrate the course and trends of hygiene as a medical discipline in our stormy century, characterized by the two World Wars. The current institutional integration of hygiene and epidemiology in the school year 1992/1993, including teaching program and final state examination reflect the rational integrative efforts in the past decade in the field of education and training of medical youth for the next millenium.

In our view hygiene and epidemiology are conceived classically as tightly connected, partially overlapping without any fashionable attributes or transient labels making the orientation in basic disciplines of the preventive medicine just more difficult or even confusing. The goals of hygiene and epidemiology in our present situation are to positively influence the quality of human life (1).

Hygiene, together with epidemiology, represent the fundamentals of preventive medicine. Unlike the social medicine, which is the third indispensable component of public health, that strongly accentuates moral, ethical and organizational aspects of health care, hygiene and epidemiology since ancient times, have been developing out of empiricism, and over a hundred years, these two disciplines have shared the same rules as other sciences. For example from the thousand year of empirical experience, some correct anti-epidemic measures were deduced even times of. The threat of vast epidemics depopulating countryside and towns and paralyzing the fighting armies, compelled medicine to develop a new medical discipline.

Hygiene is science of health preservation. Originally, it deals with all factors affecting the physical health and psychic wellbeing of human. Relating to human's health it includes the quality of water and other drinks, food and nutrition, clothing, working habits and physical strain as such, sleep, cleanliness of the body, bad habits like tobacco and drug abuse, and mental health. As to the public aspects, it covers climate, soil, sorts of building materials and housing arrangements, heating, ventilation, waste disposal, medical knowledge of disease incidence and prevention, down to burial of the dead.

The firm link of hygienic theories and practice with health status of the population remained preserved in the original form

only in infectious diseases, later on in the self-contained epidemiology the remarkable course of which to noninfectious epidemiology of today is sufficiently well known (2).

Since the Enlightenment era the efforts for disease prevention in our country have traditionally enjoyed a good standard. The important drive was the charitable attitude of many physicians and health personnel trying to create organizational and educational conditions enabling primary prevention principles to be introduced into practice. The Institute of Hygiene at Czech Faculty of Medicine at Charles University (the present Institute of Hygiene and Epidemiology, First Faculty of Medicine, Charles University) was founded in the school year 1897/1898. An analogical Institute at the German Faculty of Medicine in Prague was founded still earlier (1884). However, it ceased to exist along with the German section of Charles University in the turbulent post-war time when the Czech sector, after Nazi close down was re-opened.

Here follow some examples of various successful practical applications of our preventive medicine. The post-war activities against venereal diseases and the starting campaign resulting in a significant drop of the incidence of tuberculosis and then brucellosis – which, requiring a close cooperation with the veterinary service, deserve, by extent and organization, as well as by achieved positive results, despite a fairly long time lapse, the highest appreciation.

The former Czechoslovakia was the first country worldwide that started anti-polio mass vaccination already in the sixties, thus being an example for other countries (3). Our physicians shared in the first and until today unique eradication action of another infectious disease – smallpox. Neither of the two praiseworthy deeds has ever been fairly appreciated on the international scene, though, e.g. smallpox eradication surely is a big success of the preventive medicine on a global scale, and deserves the highest esteem by awarding a prize equivalent to the Nobel prize. For the development of epidemiology in our country the National Institute of Public Health founded in 1925 in Prague became important. The Institute's collaborators had been acquiring experience mostly in the USA. Thus a modern school of epidemiology was born. Of its representatives at least Raška should be remembered. He was head of the contagious diseases division at WHO in Geneva, and was one of the initiators of the smallpox eradication programme. In the post-war time our top specialists passed the training courses in epidemiology mostly at the London School of Hygiene and Tropical Medicine with which some of our health care institutions have been keeping up busy working contacts ever since. Concerning the noninfectious diseases we must remember the extensive epidemiological study on endemic goiter performed by our clinical endocrinologists in the late forties and early fifties, which can stand the current, relatively strict criteria for epidemiological studies was the starting point of systematic iodination of salt. This study was based on Charvát's pre-war concept which, after the war, was further developed by Šilink

and collaborators. Again we were among the first to introduce fluoridation of drinking water for caries prevention. This campaign was preceded by thorough epidemiological study as well.

The frequent sociopolitical changes, occurring in our country in this century unfortunately too often, used to disrupt the balanced system of prevention. Today we have to adapt the primary prevention scheme to the extensive social and economic changes we are now undergoing. Much has already been done but a backup to complexly structured primary prevention is urgently needed to avoid e.g. the imminent collapse of prevention of infections (4).

Our school of hygiene follows the traditional German bacteriology-based hygiene (5, 6), and enriches it with an experimental aspect (7-9) and e.g. providing good quality drinking water (Kabrhel-index), later on with pathophysiological factors to be demonstrated in the works of Teisinger, who already in the mid-thirties laid the foundations of the present day biological exposure tests or biomarkers of exposure to environmental toxicants in occupational settings (10). A few years following the last London smog episode when the best reliable health indicator recorded was mortality, Kaplan and Symon tried to demonstrate the adverse environmental effects on the changes of growth and hematological parameters in exposed children, and in this way, they contributed to the application of rather sophisticated and more sensitive indicators of the health status.

The network of hygienic stations according to the Soviet model set up in the fifties, together with the establishment of the Medical Faculty of Hygiene, the present 3rd Faculty of Medicine at Charles University was a progressive undertaking though fraught with inherent faults usual in any kind of systems designed for a rather different setting, and probably optimal elsewhere.

As concerns the Russian school of medicine our hygienic disciplines were mostly influenced by Ryazanov in general and communal hygiene (environmental hygiene) and Letavet in occupational hygiene. In the living memory still survive the discussions, or rather controversy, of Letavet with Teisinger who preferred the biological exposure tests to the regulatory and control mechanisms accentuated by the Russian school of occupational medicine.

Nowadays what we miss most is the expert critical analysis of successes, failures or errors of the hygienic service during the course of the last five decades (11, 12). There are two circumstances likely to make this problem still more difficult. The first: the effectivity of hygienic service activities can be rated by success in preventing health threatening factors. This brings us, in the first place, to skating on a thin ice of any kind of conditionals. The other serious issue, undoubtedly, was the advanced public health legislation, which, owing to profuse numbers of exceptions became little effective. Thanks to "granting the indulgences", the quality of our surface water often heavily polluted from industrial activities and housing facilities, and above all waste waters not sufficiently processed in waste water treatment plants, got drowned in the sea of legal exemptions.

Then the famous Parkinson-laws relentlessly operated on either side of the iron curtain. From the relatively modest beginnings the hygienic stations became inflated to the "maxi" size in the late eighties, heavily criticized by the Western experts on the problems of the public health sector. However, it is necessary to underline that these critics envy us the institutionalized structure engaged in primary prevention, and warn against total disruption of this structure while trying to square up with the totalitarian legacy (13).

The trends in integrating primary prevention into the activities of every physician have been implemented but slowly and with many obstacles in all social systems on the global scale. This is evident in the problems how to realize such global WHO programmes, like the decade dedicated to the "Drinking water for all", or "Health for all by 2000" anchored in national programmes adapted to the local conditions. Intentionally, primary prevention tries to suppress the causes of the diseases, reduce their incidence, improve life expectancy and quality of life. The constituents of primary prevention are protection and promotion of health.

Health protection strives to safeguard humans against any unacceptable health risks produced by the activities of man. In the Health Protection Programme the government and industry invest in our country tens of thousand millions crowns yearly. There is no need to glorify or condemn this fact as it is a must. But for that the present day industrial sphere would collapse because of incompatibility of harmful living conditions with human existence (4).

The purpose of the preparatory studies of our students for their final state examination in hygiene and epidemiology is to understand the fundamental principles and importance of the primary prevention in context with medical practice.

This also covers timely notifications of infections and flexible surveillance thereof, reports on incident malignities enabling administration of the national cancer register, and chiefly, the necessary personal engagement of the physician in primary prevention programmes and last but not least in early diagnosis and rational treatment the patients, that is, the secondary prevention. The qualified advice on life style, occupational risks and health risks from bad habits considering the social and health situation in the family may significantly help create the profile of a desired, competent family doctor.

Here are some closing notes: By the old proverb "Cut your coat according to your cloth" we naturally try to the up to date style of teaching and research work of our Institute, as can be seen from the quotations selected on of projects and publications by the staff of the Institute published during the past decade. It consists of biological monitoring and health risk assessment of human exposure to environmental toxicants, mostly toxic metals and polyhalogenated hydrocarbons, health aspects of ever increasing risks of human exposure to traffic exhaust gases. Our interest involves the selected issues of hospital hygiene, including waste disposal from health care facilities. Presently, the Institute is dealing with indoor air problems and the permanent urgent problems of smoking being one of the important risk factors of life style. Currently, we work on epidemiology of neoplasms and our attention is paid to ethical problems of environmental epidemiology.

Like other institutes engaged in the field of primary prevention we also try to maintain sensemaking cooperation on the international scene with WHO, IPCS, CCMS/NATO, etc. A certain hope open to us in the future is the steadily rising cost of patients' treatment that will urge responsible bodies to recognize the real importance of primary prevention and introduce its principles in the health care practice.

PRIMARY PREVENTION AND QUALITY OF LIFE

Under this heading will be held the international colloquium dedicated to the current state and foreseeable perspectives of further development in hygiene and epidemiology on the eve of the third millenium.

This colloquium scheduled on March 25th, 1999 commemorating the centennial of our Institute is part of the commemorative celebrations of the 650th anniversary of Char-

les University of Prague. The presented papers will be published in the Central European Journal of Public Health and brief summaries of the colloquium will appear in our local specialized journals.

The outcome of the colloquium cannot be anticipated. However what can be expected in the field of hygiene is the ever increasing significance of health risk assessment of human exposure to toxic substances especially those persisting in the environment including e.g. the so-called "hormone disruptors". These questions are related to waste disposal problems of all kinds, to the key issue of philosophy, and hopefully, to the future practice of sustainable survival – or in a more euphemistic terms – the sustainable development principle.

Apart from the expected progress of noninfectious epidemiology there exist a number of potential risks arising from gene manipulations in microbiology, pharmaceutical microbiology and, e.g. biotransformation of persistent xenobiotics – all of them involved in the solution of the specific waste disposal problems. The described future tasks require, under consideration of some hygienic and epidemiological specifics, unrestrained mutual cooperation of the both medical branches. As documented by experience of some other fields of sciences the fastest progress may be expected when the individual disciplines overlap, e.g. in methodical applications of molecular toxicology in environmental epidemiology. A wider range of applied epidemiological methods in clinical studies is awaiting us as well. The center of interest of both disciplines remains the primary prevention of mass diseases and subsequent efforts to positively influence the quality of human life.

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PRIMARY HEALTH CARE IN THE 21ST CENTURY IS EVERYBODY'S BUSINESS

Meeting in Almaty, Kazakhstan on 27–28 November 1998 to commemorate the 20th anniversary of the Alma-Ata Declaration, delegates from government, international organizations, nongovernmental organizations and the private sector are taking stock of primary health care (PHC) achievements and exploring how new partnerships at local, national and international levels can further improve people's health and social wellbeing through PHC.

PHC is a comprehensive health systems approach which is developed in partnership with the communities themselves. It encompasses sectors and activities which influence health and it includes prevention, health promotion, cure and rehabilitation.

"Health for All through PHC is an eminently sound, ethically founded and cost-effective way to improve the quality of life of individuals and communities alike", said Dr Jo Asvall, WHO's Regional Director for Europe.

Inspired by the Alma Ata Declaration in 1978, country after country the world over embraced PHC as an explicit priority and this has resulted in both significant and quantifiable improvements in people's health status.

Since the PHC approach was enshrined, the worldwide infant mortality rate has decreased from 90 per 1000 live births in 1975 to 59 in 1995 – a decrease of 34% – while immunization coverage for children under one year of age has risen from 20% to 80% between 1980 and 1990. In the mid 1970s, only 38% of the people in developing countries had access to safe drinking water and 32% to adequate

sanitation, whereas those figures had risen to 66% and 53%, respectively, by 1990.

But the world 20 years on from the Alma Ata Declaration is vastly different from that which saw the signing of the Declaration. Economic instability, globalization and the triumph of the free market credo have meant more pressure to produce profits and a greater move to private health systems, while transnational media and marketing have also increased their influence on the way people conduct their lives. These trends have all resulted in increased inequities.

Against this background, this week's meeting aims to identify key directions for the development of local, national and international health systems. Future action will call on the cooperation of many actors. Mechanisms will be needed for strengthened collaboration across government ministries and various sectors of society, including the private sector.

Only then will health be everybody's business; only then will the world have a realistic chance of achieving the goal set out in the original Alma Ata Declaration of Health For All.

WHO consists of 191 Member States. Its world headquarters are in Geneva, Switzerland, and it has six Regional Offices: in Harare, Zimbabwe (for Africa), Washington, USA (for the Americas), Copenhagen, Denmark (for Europe), Alexandria, Egypt (for the Eastern Mediterranean), New Delhi, India (for Southeast Asia) and Manila, the Philippines (the Western Pacific).

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