RESTRUCTURING PUBLIC HEALTH SYSTEMS: Implications for Environmental and Occupational Health

Edited Proceedings of the Fourth Annual Symposium
on Environmental and Occupational Health
during Societal Transition in Central and Eastern Europe

Eger, Hungary
May 31 - June 5, 1993

Edited by Barry S. Levy, Charles Levenstein, and Zsuzsanna Füzesi
with the assistance of Mary Lee Dunn

The United States - Central and Eastern Europe Exchange
for Environmental and Occupational Health

Tufts University School of Medicine

University of Massachusetts Lowell

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Preface

The fourth annual symposium in this series on environment and health in Central and Eastern Europe, held in Eger, Hungary in mid-1993, provided an opportunity to examine the progress and problems that had developed in the region since the first symposium was held in 1990.

The symposium focused on the restructuring of health systems as it has affected environmental health, occupational health, and, more broadly, public health. But, like the three preceding symposia, the context of the meeting was the impact on environmental and occupational health brought about by the transition to a market economy and a democratic form of government.

The meeting provided an opportunity to illustrate the emergence of relevant aspects of civil society, especially in Hungary, because the many sectors of the host country were represented. A number of alternative views and interesting debates evolved during the symposium on such questions as: Should the Ministry of Labor or the Ministry of Health be primarily responsible for occupational health? What should be the respective roles of government institutes performing environmental research and environmental nongovernmental (or citizens') organizations in influencing governmental policy-making concerning environmental health? What can be achieved through regulation and what, through consultation?

Moving from scientific research to public policy to politics to action is a complex and often difficult process that reveals tensions among sectors. Many of these tensions had been suppressed during the rule of the previous authoritarian regimes. Now, with market economies and democratic governments in place in these countries, these tensions are being played out.

We hope that the plenary presentations and working group reports contained in this book will provide new insights and improved understanding into the content and context of restructuring health systems in Central and Eastern Europe, especially as this restructuring affects environmental and occupational health.

— B.S.L., C.L., and Z.F.

Boston, Massachusetts, USA
Lowell, Massachusetts, USA
Pécs, Hungary
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Annual Symposia on Environmental and Occupational Health during Societal Transition in Central and Eastern Europe

"Environment and Health in Central and Eastern Europe"
Pécs, Hungary, June 22-27, 1990

"Air Pollution in Central and Eastern Europe:
Health and Public Policy"
Frydek-Mistek, Czechoslovakia, June 14-19, 1991

"Environmental and Occupational Health
in Central and Eastern Europe:
Translating Science into Policy and Action"
Pultusk, Poland, June 26-July 1, 1992

"Restructuring Public Health Systems:
Implications for Environmental and Occupational Health"
Eger, Hungary, May 31 - June 5, 1993

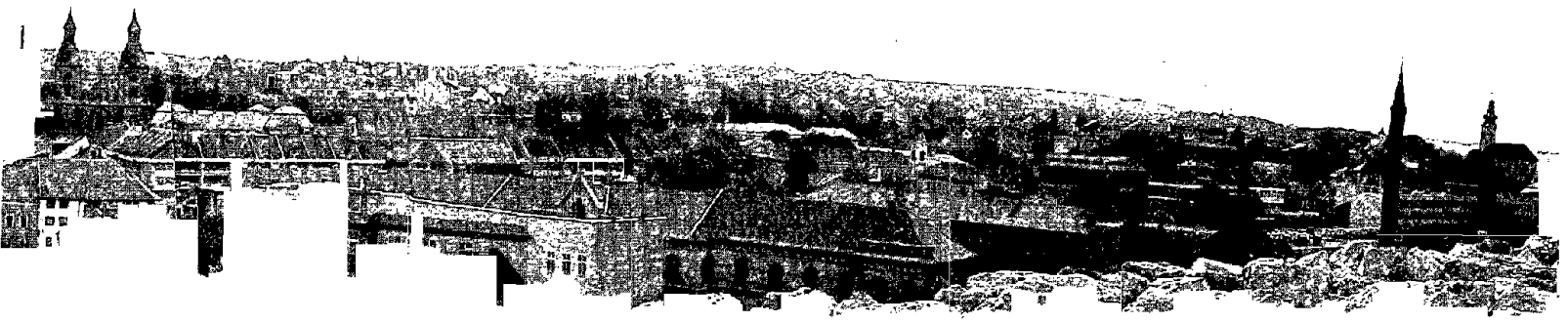
"Healthy Work, Healthy Environment:
Strategies for the Future"
Nitra, Slovakia, June 13-18, 1994

"Environment, Work and Health
in the New Central and Eastern European Democracies"
Romania, June 5-10, 1995

Table of Contents

Panoramic view of Eger.

III. Restructuring Occupational Health



IV. Restructuring Public Health

V. Building a Common Agenda

VI. Appendix

Photographs by Wayne Curley and Barry S. Levy

Poster Sessions

Health Damage of People Living
Near (2m-250m) the Slag Deposit Originated from Gazfactory
O. Kekesi, E. Sarkozy, M. Seta, K. Huszti, A. Verbenyi

Recommended Biological Exposure Indices
in Occupational Exposure to Chemical Substances in Croatia
Danica Prpic-Majic
Institute for Medical Research and Occupational Health, University of Zagrab

Negative Health Indices in Ecological Hazard Areas in Poland
T. Dutkiewicz, J. Konczalik, Cz. Andryszek, D. Rachanski
Institute of Occupational Medicine, Lodz, Poland

Improving the Working Environment of Small-Scale Enterprises
Center for Alternative Social Analysis, Copenhagen, Denmark

Workplace Improvements Initiated by Action-Oriented Training
Elsebeth Schmidt, Physiotherapist, Occupational Health Service,
Municipality of Copenhagen, Denmark
Center for Alternative Social Analysis, Copenhagen, Denmark

Chemical and Microbiological Contamination
of Drinking Water and Food Products Used by the Lithuanian Population
Z. Stanevicius, D. Sciupakas, R. Sabaliauskas

Dynamic of Neoplasic Diseases in Childhood
Related to the Pollution Factors in Timis Country, Romania
D. Cornici, A. Liebmann, D. Torok, Dr. M. Serban, Dr. M. Sfetcu

State of the Environment in Hungary with Special Regard
to the Environmental Impact of the Metallurgical Industries
Peter Szanto

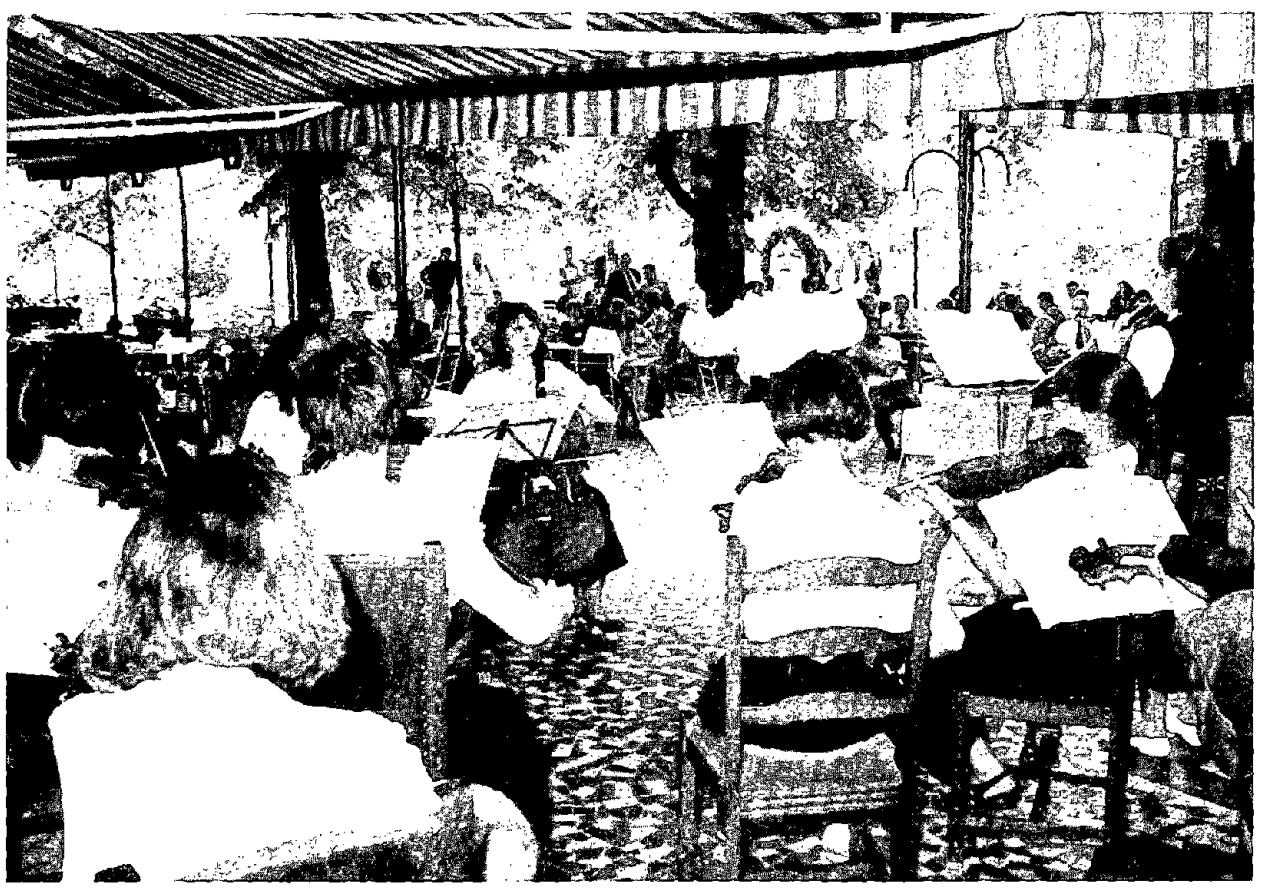
Transformation of Health Services in the Czech Republic
under Ideological and Economical Pressure
I. David, Prague, Czech Republic

Toxicological Studies in Hazardous Waste Characterization
Gy. Dura, El. Csorba, A. Horvath

Approaches to Evaluation of Genotoxic Risk
of Environmental Chemicals in Slovak Republic
Maria Vargova, Institute of Preventive and Clinical Medicine, Bratislava, Slovak Republic

BST, the Occupational Health Service in Denmark
The National Organization of Occupational Health Service Employees

I. Introduction



A local chamber orchestra played at the introductory reception at the Eger conference.

Status of Societies in Central and Eastern Europe: Transition, Economy, and Health

VILMOS IVÁDY

I am going to use two approaches to describe the status of the societies of Central and Eastern Europe. The first is examining the slow pace of transition, and the other is putting environmental and health issues into a wider economic and social context.

The transition to a market economy means hopes, harsh conditions, and severe facts at the same time for the countries of Central and Eastern Europe. Why does the transition look so slow? What are the major reasons behind it? To answer these questions, let us see the current status of these societies.

STATUS OF SOCIETIES: COMMON CHARACTERISTICS

The transitional societies have some common characteristics such as:

1. Overoptimistic expectations. There was a hope that market forces would solve many problems. To expect a better life, including more consumption, a cleaner environment, and healthier populations, proved to be too optimistic for the short run. The new paradigm in the economy has not led to substantial improvement in the quality of life.

2. Operating economies as "learning by doing." Keeping economies alive while changing the fundamentals of operation of the economy results in hectic economic and social policies. The rate of unforeseen and hard-to-treat consequences of policy measures is largely due to the inexperience of the first freely elected governments.

3. Declining economic performance. Most of the countries of the region have suffered from bad economic performance. The output of the economies, measured in Gross Domestic Product (GDP), declines from year to year, while the propensity to investment in the economy is still very low. The only hope of the region is to attract substantial capital investment from the West.

4. Coping with the heritage of the past. The countries of Central and Eastern Europe had accumulated tremendous internal and external debts in the fields of economics, external relations, environment, health, and human values. Changing the structure of the economy might

take less than a decade, but changing the values, commitments, and the behavioral patterns will take generations.

5. Environment and human health are marginal issues. These two issues were considered very important under socialism, but, in practice, not too much was done. Presently, not knowing much about the external costs of the transition or not taking them seriously, people are prone to neglect the possible negative effects of their everyday actions. In many cases, they consciously sacrifice environment- and health-related values for their short-run business interests.

CRISIS IN THE ECONOMY: DECLINING PERFORMANCE

Next, I will consider the crisis in the economy, our debts in a wider context, why environment and human health are marginal issues, and the need for a change in policy measures and human behavior.

As mentioned, poor performances have characterized the Central and Eastern European economies during transition. The following table shows the last year in which economic indicators matched 1991 levels:

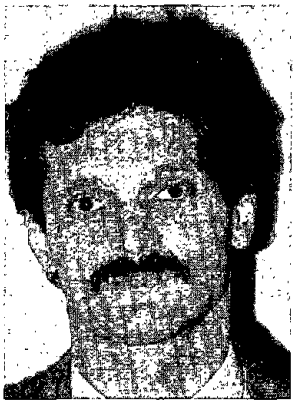
COUNTRY	GDP	INVESTMENT	CONSUMPTION
Czechoslovakia	1979	1978	1988
Hungary	1981	1975	1983
Poland	1982	1974	1983
Romania	1980	1973	1988

High unemployment and inflation make the situation more severe for the vast majority of the people. In Hungary, unemployment has exceeded 14 percent of the active population, while inflation has been, and is, greater than 25 percent.

The crisis in the economy is coupled with the environmental crisis. Although less investment and less consumption have positive effects on the environment, the "catch-up" strategy of the countries of Central and Eastern Europe focuses on low environmental and health costs in the short run. Keeping these two types of costs low gives a chance for the newborn private sector and the shrunken state-owned sector to be competitive in the market.

Environmental degradation has proceeded since the collapse of socialism. On the one hand, the use of energy and natural resources is still inefficient. We use much more energy to produce one unit of output than the developed countries. On the other hand, the level of emissions per capita is also much higher than that in developed countries, as seen in the following table with data for 1990:

"The countries of Central and Eastern Europe had accumulated tremendous internal and external debts. ... Changing the structure of the economy might take less than a decade, but changing the values, commitments, and the behavioral patterns will take generations."



COUNTRY	ENERGY INTENSITY ENERGY CONSUMPTION/GDP	EMISSIONS SULFUR DIOXIDE/PER CAPITA (KG)
Poland	2.56	110
Hungary	2.06	115
Germany	0.61	21

OUR DEBTS IN A WIDER CONTEXT

Hungary, like the other Central and Eastern European countries, has accumulated many different kinds of debts. Coping with these burdens makes the transition so slow and painful. The major debts are as follows:

• **Internal economic debts.** The lack of internal infrastructure and the proper maintenance of fixed capital, as well as ignorance of technological innovation, can be seen even by the lay Western visitor.

• **Internal social and political debts.** These have been accumulated towards socially deprived groups and underdeveloped regions. Compensation is being made towards persons persecuted for political reasons.

• **Internal environmental and health debts.** Severe environmental degradation and poor health status of the population were both neglected external costs under the previous system.

• **External environmental debts.** Influences of environmental pollution extend beyond borders. Air pollution, acid rain, and river pollution have all imposed extra burdens on neighboring countries.

• **External economic debts.** Most evident is the huge financial debt. In the case of Hungary, it amounts to US $20 billion. The absence of infrastructural links between the West and Hungary makes business difficult for Western businessmen.

• **External moral and political debts.** Admitting past roles and changing moral values might help us to be able to make our nation respected.

WHY ENVIRONMENTAL AND HUMAN HEALTH ARE MARGINAL ISSUES

The explanation can be summarized as follows:

• The major goal is to catch up to the West, which results in putting the economy first. Growth and balance in the economy became the core issues.

• Environment and health can be supported at no present costs. They provide the economy with additional resources. Obligations to pay for this can be postponed.

• Scarcity of capital and time constraints stimulate entrepreneurs to focus on short-run profitable investments. In general, bank loans are available only for the short term and the conditions are too strict for most of the entrepreneurs. Environment- and health-conscious investments yield only in the long run.

"Environmental degradation has proceeded since the collapse of socialism. On the one hand, the use of energy and natural resources is still inefficient. We use much more energy to produce one unit of output than the developed countries. On the other hand, the level of emissions per capita is also much higher than that in developed countries."

• Company behaviors in poor markets with competition are cost-minimizing ones. Due to insufficient regulations (and their enforcement), companies are cutting their expenses on environmental protection, and worker health and safety.

• Private costs of production are far below the total costs. Besides the paid actual operating costs of the companies, there are substantial social costs imposed on others than those who generate these costs. Pure profit motive, without sufficient regulations, does not lead to environment- and health-conscious company behavior.

• Privatization and ownership changes make it difficult to identify the legal responsibilities for the health and environmental damages caused by the former regime.

• People are focusing on mainly material issues and status symbols. Their approach to quality of life is one-sided. Short-run utility maximization drives their hazard and risk assessment behavior.

NEED FOR A CHANGE

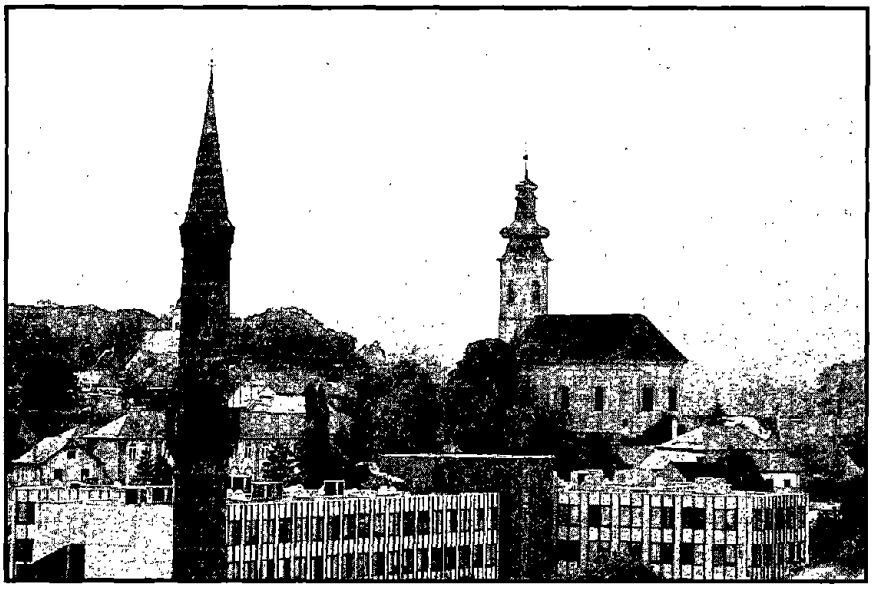
To cope with the threats coming from the degradation of the environment and human health in the countries of Central and Eastern Europe, there is a need for:

1. Effective governmental policy and control over market failures and biases. The private cost of production should be increased by internalizing environment, health, and work safety costs. It will reduce the competitive advantage of these countries in the short run, but the long-term effects will surely be positive.

2. Adequate public participation in policy-making through nongovernmental organizations (NGOs). The parties concerned should get to social consensus over environmental and public health policy.

3. A change in social values. People should place more emphasis on quality-of-life issues. Less attention should be paid to the notion of endless consumption. Increasing social responsibility might lower the environment- and health-related damages and risks.

4. A new development paradigm. Sustainable development alternatives for Central and Eastern Europe are inevitable in the long run.



A view of Eger.

The Ethics of Prevention

BÉLA BLASSZAUER AND TIBOR JAKAB

We will analyze the prevention of health problems in Hungary from an ethical perspective. We aim to show the place of prevention among the goals of medicine, although we recognize that the ethics of health promotion and prevention have not been established yet in our country.

"Examination of priorities ... indicates that preventive efforts are not high on the list. Meanwhile, admiration of advanced medical technology overshadows the urgent need to change Hungary's extremely disturbing data on morbidity and mortality. The allocation of scarce resources ... is not discussed publicly. ... "

Examination of priorities within the health care system indicates that preventive efforts are not high on the list. Meanwhile, admiration of advanced medical technology overshadows the urgent need to change Hungary's extremely disturbing data on morbidity and mortality. The allocation of scarce resources in a country experiencing serious economic and moral crises is not discussed publicly, and neither the method nor the principles are clear or understandable. Although it would be rational to allocate resources to areas where public health can be improved, preventive measures, as the primary means of elevating the health status of the citizens, are neglected — although they appear in the form of rhetoric. Policy-makers, however, must bear in mind that in a democratic society the involvement of citizens in creating policies and setting priorities is a political issue; this reality could influence the outcome of general elections.

Ethical analysis is only one of several approaches to issues of prevention. Nevertheless, it can be vital and helpful in setting the course of prevention within a moral framework with which the public at large might be able to identify.

LACK OF EFFORTS

One reason for the catastrophic health status of Hungarians is the lack of preventive efforts in many areas, especially in work places, in the environment, and in education. At places of work, occupational hazards, lack of safety devices and the lack of willingness to use them, pollution, and stressful atmospheres — due to "moral pollution" — contribute to endangering lives and health. At home, alcohol, tobacco, tranquilizers, lotteries, and cheap, unhealthy food adversely affect the quality of life of many individuals. In our society, many people live today

without clear commitments and goals, their lives meaningless and empty. Generally, the poor live most inadequately and dangerously, and thus are the sickest in our society. Unfortunately, more than two million elderly — more than 20 percent of the population — have been badly affected by the political transition. Ever-increasing inflation, loss of state subsidies, widespread unemployment, and growing problems with social and health care services have had a tremendous adverse impact on the elderly, who are less and less able to cope with all of these problems.

It would be a grave mistake to conclude that economic reasons alone can explain the worsening of health status of Hungarians. Although it seems easy and logical to blame all the ills of health care and the malfunctioning of the preventive system on lack of money, this is not true. There are other factors which must be considered.

At least one factor is connected with ethics. A question immediately arises: "Is the medical establishment at all interested in prevention?" The answer, most likely, is: "No." Since "tipping" — under-the-counter payment — has been practiced for more than three decades, physicians, in general, have much more financial interest in attempting to cure diseases than in preventing their occurrence The extremely low salaries of health professionals lead physicians and nurses to place little emphasis on prevention. Although medicine is present in the lives of people from birth until death, from family planning and maternity counseling, through screening and rehabilitation, until the compulsory autopsy following death, very little is being done to combat environmental and moral pollution, to reduce occupational hazards, and educate the public about ways of health promotion and individual responsibility.

PERSONAL RESPONSIBILITY

To assume personal responsibility for one's health requires autonomy, which can only be exercised in the medical setting when patient rights — the autonomy of individuals seeking services from the health care system — are recognized and protected. Those seeking health care are simply supposed to follow the orders of physicians (and nurses), and accept the highly paternalistic attitude of health professionals. Therefore, it is hard to imagine assuming responsibility when one is deprived of the right to self-determination. When patient autonomy is not respected, then no information is given, no consent is sought, and no participation in decision-making occurs. As a consequence, one becomes an object who cannot and should not take any responsibility — not even in the form of any preventive measures — for one's own health. After all, personal responsibility requires more than pure knowledge of scientific facts. Most individuals, however, want to act and want to participate in determining their lives.

The allocation of scarce resources does not favor prevention. Instead, it favors so-called "luxury medicine," which is characterized by high technology, and applied mainly in the areas of transplantation, treatment of cancer, and reproductive medicine. While there is strong lobbying for transplantation of various organs, spokespeople for prevention hardly exist. Despite the poor health status of citizens, there exist neither well-defined goals nor clear priorities.

Those existing lists of priorities contain vaguely composed wishes for the year 2000. These wishes include an increase in the unusually low life expectancy, especially for men, and urging that more people consider health the highest value in life. The expected life span of Hungarian men in their 30s now is less than what it was in 1941! (3) Lack of preventive measures is primarily responsible for this decline.

The Communist regime improved the health status of the population by eradicating tuberculosis and making free health care available. By 1960, health statistics showed no essential differences between Hungary and nations in Western Europe. After the 1960s, however, the trend reversed for reasons that finally made the whole Communist system collapse.

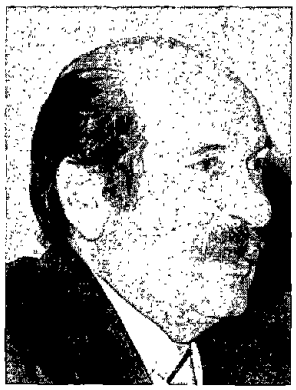
For a while, an increased standard of living made it possible, for example, to follow traditional Hungarian eating habits almost at will: greasy meats (bacon and ham), followed by wine or hard liquor that earlier had been accessible only at holiday or harvest time. Undesirable results appeared soon. By the early 1970s, one could say to many of our fellow Hungarians, "You look great," meaning, in Hungarian: "How nicely fat you are." More alarming signs appeared, but neither health professionals nor government officials warned people about the dangers. They, too, were consuming hams with pleasure. However, state officials were well aware that "healthy" eating habits and a "healthy" lifestyle would be very costly.

"It would be a grave mistake to conclude that economic reasons alone can explain the worsening of health status of Hungarians. Although it seems easy and logical to blame all the ills of health care and the malfunctioning of the preventive system on lack of money, this is not true."

PATERNALISTIC STATE

The paternalistic state had no money for that. Neither had it money for cars that would not have devastated the environment. Mostly Trabants and Wartburgs, with two-cylinder engines, were imported from East Germany. The "socialist industry" had even less mercy on the environment. Due to extensive economic development, water, soil, and the air were contaminated with various poisons, and there was hardly any money for prevention of adverse consequences.

It was, however, recommended that a network of occupational medical services be developed, and there was almost no factory or institution where a workplace physician was not present to provide medical services once or twice a week for the employees. Their main task, however, should have been to prevent harmful effects on the workers' health, but they rarely



"In medical education, the role of prevention is quite negligible since the emphasis is on the basic sciences and high-tech medicine. Some ... go so far as to claim that a medical diploma is worth anything only if the holder has learned transplantation medicine. Ethics and social sciences, together with health promotion and prevention, are only tolerated ... "

performed this task. Most of the time, they could do nothing because the centrally set goals had to be achieved. Thus, productivity came first, although the main slogan of socialism placed the highest value on the human being. In reality, however, the human being was nothing more than the cheapest means of production that was available in abundance. Another reason must have been the lack of interest in prevention and the low prestige of plant physicians.

The real medical work was — and is — considered to be curative medicine, especially its spectacular aspects. It was — and is — also the most profitable type of medicine. As a consequence, workers were not informed about what risks and hazards they faced if, for example, they took off their masks or took out ear-plugs in a dusty, noisy, gas-filled workplace. In many workplaces, the booklets on hazards and ways of protection were well hidden and the workers were ignorant about why they should take various precautions, and why they should use comfortable safety devices. A great number refused to protect themselves. Today, things have not changed much. Perhaps workers are somewhat more informed, and they may know that certain environmental contamination might affect them and their families. Even if they know more now, they can do much less about it. The danger of losing their jobs is always present.

In medical education, the role of prevention is quite negligible since the emphasis is on the basic sciences and high-tech medicine. Some leaders of universities go so far as to claim that a medical diploma is worth anything only if the holder has learned transplantation medicine. Ethics and social sciences, together with health promotion and prevention, are only tolerated as subjects; their value is incomparable to disciplines such as pathology and anatomy.

PATIENT CARE NEGLECTED

Students never learn patient-oriented care in which prevention and the promotion of health are as important as respect for the patient's autonomy. At the same time, the Hungarian people, who grew up on hard-core state and medical paternalism, believe that health professionals have the exclusive right and duty to re-instate our health when it fails. In harmony with this belief, most physicians do not consider giving information to patients as their task or as an integral part of their medical activity. They openly blame patients for their diseases and call their

smoking and drinking habits inexcusable sins. Some physicians even refuse to treat patients who are addicted to either alcohol or nicotine unless they first give up their "sinful activity."

Not much can be expected from the media either. It usually seeks sensations, and prevention is not among the most exciting themes. It is much better to make the readers spellbound with surrogate motherhood, lung and heart transplantation, and artificial reproduction. In turn, prevention, health promotion, and public health become insignificant matters, both for laymen and the media. Perhaps this is one of the reasons that, for example, condoms are not available in institutions of higher learning, and there is much more aggressive advertisement of cigarettes than there is for information about safe sexual behavior.

It is not surprising that the health of Hungarian citizens is continuously deteriorating. We are, indeed, a sick nation.

The only hope is that, as soon as we get over the stage of jungle capitalism, we may have leaders who will show much more commitment to the people they represent than those who are indifferent to or just unwilling to serve the common good. Neither the present nor future generations can be served without preventive measures that would protect the lives and the health of people.

Left: Zsuzsanna Füzesi welcomes participants. Right: A working group meets.

II. Restructuring Environmental Health

Fields near Eger.

Restructuring Environmental Health in Hungary

ALÁN PINTÉR

The situation in environmental health and public health in Hungary requires changes both in terms of structure and efficiency. The population size over a 10-year period is decreasing, the life expectancy among males (Figure 1) is the lowest in this part of Europe. The tendency over 10 or 20 years is depressing, and the latest figures show a worsening situation. (Table 1) The underlying causes are very complex and difficult to understand. Environmental factors, socio-economic factors and lifestyle play a definite role among the causes for heart disease, cancer, violence. The complexity is clearly reflected by the fact that differences exist between countries adhering to similar socio-economic, geographic, and historic situations. Take cardiovascular disease, a major factor in mortality. Looking at our neighboring countries, the difference in rates is large (Figure 2).

"What should be done? How? ... Human beings are at the center of concerns for sustainable development ... the health of humans should be the driving force behind the changes in restructuring. And human health should be seen in its physical, social, behavioral, and ecological context."

The questions are: What should be done? How? By what institutes? Human beings are at the center of concerns for sustainable development, and they are entitled to a healthy and productive life in harmony with nature. It seems clear that the health of humans should be the driving force behind the changes in restructuring.

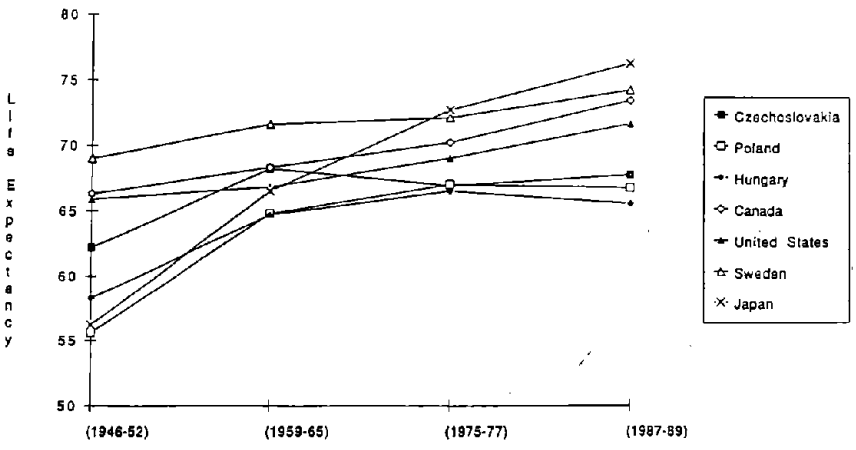


FIGURE 1. Temporal trends in life expectancy -- males, 1946-1989.

TABLE 1. Main Demographic Indicators of the Population, Hungary

	1970	1975	1980	1985	1990	1992
Population size (in thousands) for the year	10,352	10,563	10,713	10,640	10,355	10,310
those aged 1-14 years	2,126	2,166	2,356	2,279	2,064	1,958
of which 0-2 years	446	519	470	375	245	369
those 60 years and over	1,797	1,922	1,849	1,941	1,974	1,984
females aged 15-49	2,687	2,659	2,568	2,553	2,530	2,575
Number of live births	151,819	194,240	148,673	130,200	125,679	121,724
rate per 1,000 pop.	14.7	18.4	13.9	12.2	12.1	11.8
Number of deaths	120,197	NA	145,355	147,614	145,660	148,781
per 1,000 pop.	11.6	12.4	13.6	13.9	14.1	14.4
Number of deaths under age 1	5,449	6,380	3,443	2,651	1,683	1,714
per 1,000 live births	35.9	32.8	23.2	20.4	14.8	14.1
Life expectancy at birth						
males	66.8	66.8	66.3	65.1	65.1	64.6
females	72.1	72.9	72.7	73.1	73.7	73.7

TABLE 2. Drinking Water Quality, 1992
(Distribution of unacceptable samples)

	NOT ACCEPTABLE (%)		
	Total	Bacteriological	Chemical
National average	32	18	25
Counties average	39	19	30
Budapest	10	12	4
Győr-S-M	12	12	5
Zala	14	4	14
Vas	17	7	14
Nógrád	77	9	65
Somogy	77	31	64
Békés	58	28	31
Jász-N-Sz.	56	16	46
Csongrád	39	39	26

And human health should be seen in its physical, social, behavioral, and ecological context.

BROAD RESPONSIBILITIES

All integration of data collection, evaluation decisions, and measures for disease prevention will be done by the Hungarian State Public Health Center, the Health Institutes, and the National Health Service which has broad responsibilities, including all aspects of health protection and prevention:

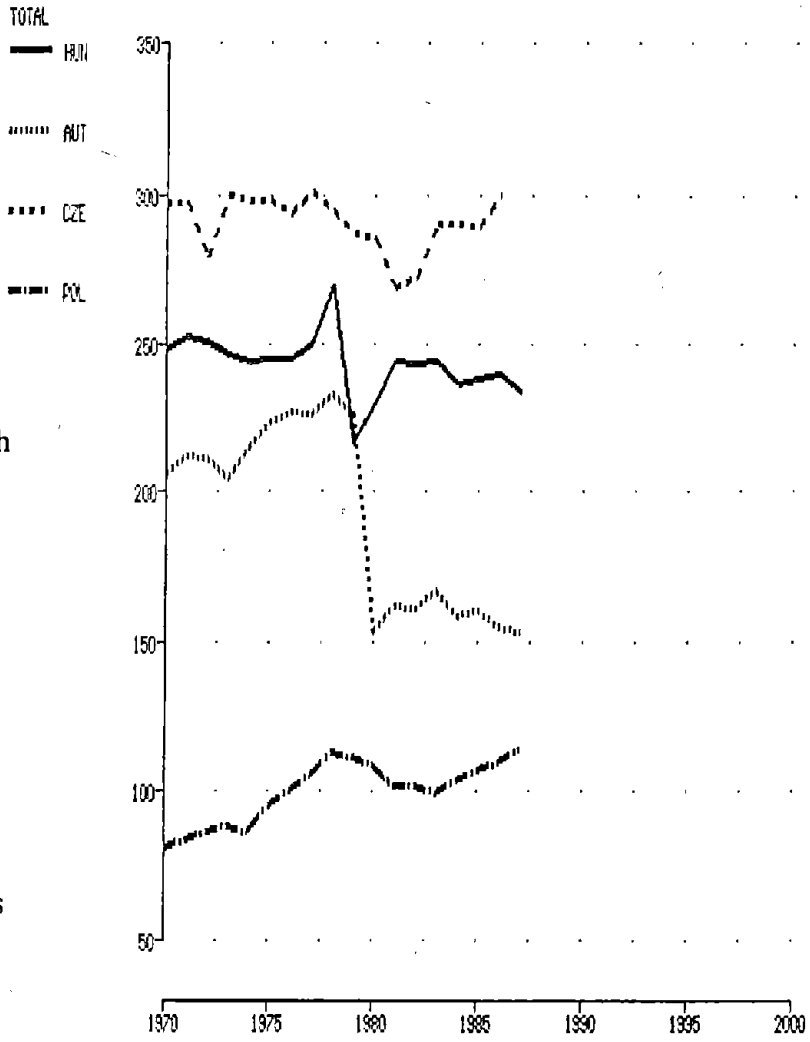


FIGURE 2. SMR Ischemic heart disease, all ages, per 100,000, Hungary (HUN), Austria (AUT), Czech Republic (CZE), and Poland (POL).

• Development of programs for promotion of health in the population;

• Analysis and evaluation of all factors influencing public health;

• Establishment of limit values and guidelines for control of environmental agents;

• Regulation of chemicals, xenobiotics used by the population, including production, storage, transportation, and use;

• Overview and regulation of institutions related to health, education, sport, and public buildings;

• Control of communicable diseases and organization of vaccination programs;

• Elaboration of scientifically-based nutrition programs;

• Supervision of primary health care, including family health, mothers' and children's care, school health, mental hygiene, and occupational health;

TABLE 3. Number of Settlements with Arsenic in Drinking Water

County	Arsenic in raw water in µg/L	Arsenic content at the tap			
		<50 µg/L	50-100 µg/L	>100 µg/L	
		A	B	C	D
Bács-Kiskun	50-170	13		1	
Békés	50-330	13	4	9	8
Csongrad	60-220	13			
Jász-Nagykun	60-110	3	1	1	
Hajdu-Bihar	51-96	3	1	6	
Heves	66-120	2	1		
Tolna	70	1			
Total		48	7	17	8

A: all the time; B: intermittently; C and D: regularly

TABLE 4. Ratio of Affected People Consuming Drinking Water With Different Arsenic Content

County	Population Supplied by distribution systems*	Consuming drinking water with arsenic µg/L		
		<50	50-100	>100
		(in thousands)		
Bács-Kiskun	465	434.4	27.0	3.9
Békés	385	144.3	217.5	23.4
Csongrád	381	369.1	8.9	2.6
Hajdu-Bihar	113	106.2	7.1	0.0
Heves	11	10.6	0.0	0.0
Jász-Nagykun	414	338.8	38.1	37.1
Tolna	2	1.8	0.0	0.0
Total	1771	1405	299	67
% of population	18.8	14.9	3.2	0.7

• Health promotion: programs against tobacco smoking, alcohol consumption, drugs, AIDS, and so forth; and

• Supervision of medicinal drug supplies.

Almost everything concerning the physical environment affecting human health should be under these institutions. Final responsibility is in their hands.

Regarding the creation of a common database, all data collection should be done by the Public Health Center, including hygiene, occupational health, health promotion, and so forth. Among the difficulties of establishing such a database are accessibility (privatization), price, harmonization of data quality, and utilization of the data.

STILL A MAJOR ISSUE

Air pollution in Hungary is not a high priority. However, about 40 percent of the population lives in heavily or moderately polluted areas, mainly in cities. In Budapest, for example, SO_2 and soot concentration decrease, while NO_2 and dust deposition are increasing. (Figure 3) More than 90 percent of the population receives piped drinking water, whose quality, however, requires improvement. If we look at the data (Table 2) when the drinking water quality was not acceptable, the country's average is roughly, once again, 40 percent. As a special example, despite the national program for dearsenification, the number of settlements and the number of people supplied with drinking water that contains arsenic is still high. (Table 3 and Table 4)

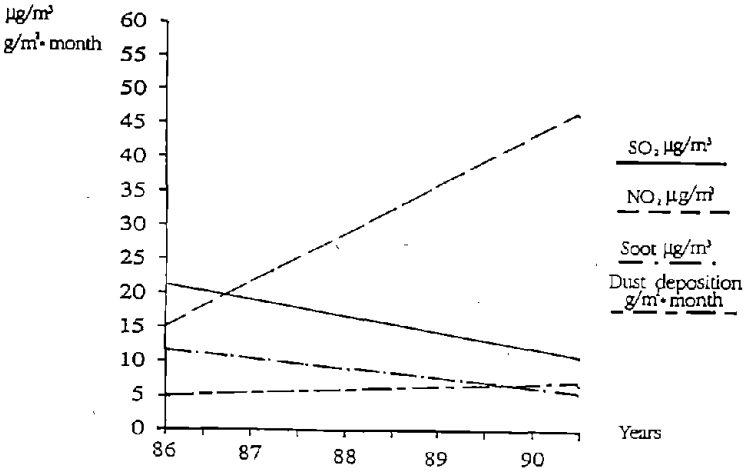


FIGURE 3. Air quality trends in Budapest. Source: OKI, Budapest.

Our information flow is not well characterized or pursued. The successful incorporation of all data depends on cooperation. We must ask how it should be done. We should create some kind of interaction and exchange of views. One of our five highest priorities should be the data collection network.

And that leads to increasing our monitoring capacity. We need more and better data. There is a necessity for monitoring environmental and occupational health and thereby the data quality should be improved.

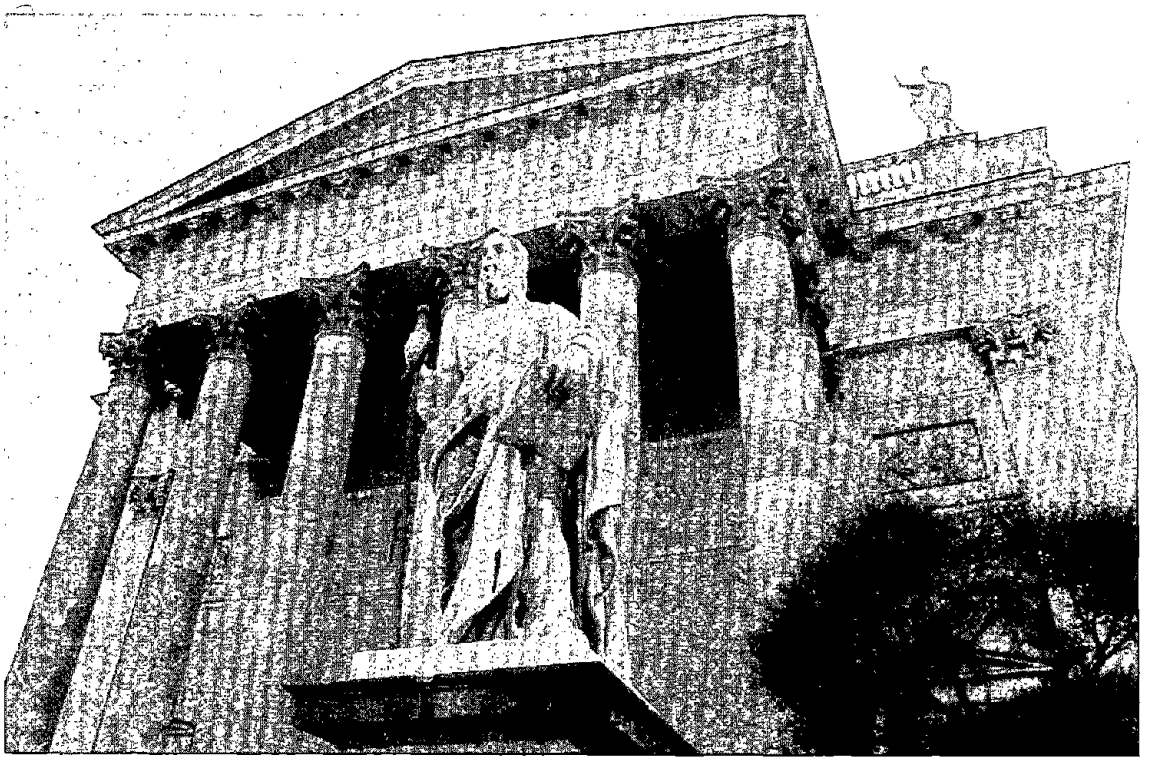
One major drawback in Hungary is that real exposure assessment is not regularly done. We do not know exactly what is going on in the target tissues; we must try to get more information about this.

CAPACITY FOR ENVIRONMENTAL EPIDEMIOLOGY

Another issue is improving the capacity for environmental epidemiology. To get a clearer picture about the Hungarian national health status, one has to be much more educated about environmental technology, to concentrate much more on data quality and quality assurance.

Another important factor to the public is education. We have to change education in order to have more trained professionals. I am convinced that without increasing research and effort in environmental health, we cannot keep pace with development and we just lose time and energy because our resources have not been updated. It is a very crucial question because of the lack of financial resources and manpower to do environmental health research. But if we do not develop, we will just lag behind.

And the last point is risk analysis and management where we have quite a few training courses, quite a few workshops and discussions, but hardly anything yet in practice.



The front of the Main Cathedral in Eger.

Roles of Nongovernmental Organizations in Environmental Health in Hungary

ZSUZSANNA FOLTÁNYI

I am with the Partnership Program of the Hungarian Foundation for Self-Reliance which has been active in Hungary for about 10 years. I would like to speak a little bit about the nongovernmental organization (NGO) cause and about my regional backround. The aim of the organization in the beginning of the 1980s was to collect information, to provide information, and to act. It was a time in Hungary when many citizens, students, and scientists were realizing that their faith in the environment was really coming of age. The aim was to set up information channels among the source foundations to try to effectively influence those policies of government which affect the environment.

At that time, all of our experience was that although there are a lot of branches of the scientific arena that were seriously and responsibly thinking about environmental problems and the solutions to them, there was no cross-fertilization of these thoughts, initiatives, and ideas. It was reflected in the agencies when a couple of these so-called independent environmentalists drafted a report on the state of environmental problems. The report was not finished at that time because of the existence of many serious public health situations in this country. It became clear that the quality of data did not provide enough assistance to make clear policy actions

THE BARE FACTS

I am working with environmental organizations, frequently on public health issues. So we are looking at the bare facts that come from all kinds of international discussions concerning the environment. For instance, the number of species dying out daily; the amount of soil we lose yearly because of erosion; or the amount of dirt we used to lose yearly, of a size which equals Finland; or how the population grows. These are all various factors, elements we put together when talking about the environment. Concerning nongovernmental activities, we have to examine all studies being done by other organizations. Many of them tried to point out the serious dangers and trends concerning the environment. We have to sort the problems we confront and somehow insert them at the top of the agenda of the jurispolitical community.

The majority of NGOs are not satisfied yet with the political processes. Many NGOs are concerned that the political processes, the governmental ones, are so slow that we will not be able to stop these frightening environmental processes.

"Many NGOs are concerned that the political processes, the governmental ones, are so slow that we will not be able to stop these frightening environmental processes ... The chance of the situation worsening is great. If you look into the figures, it is hard to see any kind of change."

Now, in Eastern Europe, we have heard that environmental problems and environmental pollution are widespread in our region. But the environmental problems are so bad that the situation is just frightening. The chance of the situation worsening is great. If you look into the figures, it is hard to see any kind of change. You can look at the characteristics of the waters. Approximately 1,000 settlements in Hungary do not have safe drinking water or the proper amount. Unfortunately, thousands of citizens do not have safe drinking water; about one-fourth of the total Hungarian population is living in such conditions. The same thing can be said about the quality of the soil. Toxic waste is like a time bomb which attacks the environment and human health. An increasing number of organizations, seeing these signs, are active on pollution.

Many NGOs have programs to raise public awareness, to try to convince people that it is their responsibility to understand what is going on in their surroundings, to try to involve them in the activity of the NGOs, to try to organize groups that represent their interests in public health, and to try to be in all kinds of decision-making arenas where they can push decision-makers to protect the environment and public health.

ACTING MORE INTERNATIONALLY

This is just a general characterization of the work and role of the foundations. We have been looking at the impact that we have had for a little change. These are facts. But the possibilities are ongoing for organizations to get information to act more internationally and gain access to more funds.

The majority of Eastern European countries and the majority of the citizen groups are not yet prepared to be really effective against the environmental mess. We do not have the clear legal instruments we need for the environment. It is very hard to act against these trends.

To summarize what the NGOs used to do or have to do: they have to act so as to be always well informed about what is going on. To a certain extent, many of the NGOs have a role in which they are synthesizing information that is coming from the various scientific sources in

order to be really effective. This should be the base for all kinds of citizen activity on pollution. I am quite sure that the NGOs of the region would act on an international level to build international NGO groups which might provide them more expert information.

NOBLE INDEPENDENT EXPERTS

One of their major problems and their major roles is trying to be the noble independent experts there to transform and hand down their policies.

My last point concerns the future model or the future image the Hungarian Republic has of NGOs. I am happy to see that it is willing to cooperate to improve their attitude in the ministry of agriculture, environment, and so on. But, here in Eastern Europe, an institution or an agency which has to understand the decline of society because of health issues might feel unwilling to cooperate with nongovernmental sectors, especially because we are in a transition period. Previously, we did not have effective governmental organizations because of the political system. Now, we do not have effective governmental institutions or agencies because of the transition and because of the lack of financing.

I think one of the best options for an effective base should be or could be to cooperate on various levels with the nongovernmental sector.

Local musicians entertain participants.

Recent Environmental Health Research in Poland

JERZY A. SOKAL AND JOZEF S. PASTUSZKA

"Environmental pollution has reached the highest level in southwestern Poland ... trans-boundary transport of pollutants from Germany and the Czech Republic also can be observed, resulting both from the location of many industrial pollution sources close to the Polish boundaries and from the dominant wind direction, which is unfavorable for our country."

Considerable degradation of the natural environment can be observed in many areas of Poland. It is the effect of uncontrolled industrialization of the country after the Second World War, particularly in the 1970s and 1980s when little attention was paid to environmental protection. Contemporary Poland is paying for the results of past activities.

Since Poland has considerable resources of coal, small amounts of natural gas and water power and practically no oil, the coal combustion process is the main way in which energy is generated. The situation, which strongly influences the level of environmental pollution (and exerts serious environmental health hazards), may be called the "coal monoculture." (Figure 1)

PROBLEMS OF THE SOUTHWEST

Environmental pollution has reached the highest level in southwestern Poland where such industrial branches as mining, coal-based electricity generation, metallurgy, and a substantial part of the chemical industry are located. The problem is particularly evident in such areas as Lower Silesia, Upper Silesia, and the Cracow region. Considerable trans-boundary transport of pollutants from Germany and the Czech Republic also can be observed, resulting both from the location of many industrial pollution sources close to the Polish boundaries and from the dominant wind direction, which is unfavorable for our country.

Knowledge about the impact of environmental pollution on human health in Poland is limited, mainly due to the scarcity of population exposure data and epidemiological data. The recognized significant health hazards include:

- **"Winter" smog** — It occurs in towns and industrial areas of southwestern Poland, especially in Upper Silesia.

• **Overexposure of children to lead** — In the 1970s, hundreds of severe lead poisonings in children were noted. Recently, clinical lead poisonings in children have rarely been recognized. However, the existing data from the State Sanitary Inspection point to several thousand children in Katowice Province who have been exposed to lead up to the level that produces serious health risks.

• **Carcinogenic Substances** — The extent of the problem is difficult to determine precisely. Upper Silesia is the most exposed region, due to massive emissions of strong carcinogens, polycyclic aromatic hydrocarbons (PAHs), and the size of the exposed population.

"Particulate measurements made in 1989 in Katowice (prior to the political changes in Eastern Europe and the resulting decrease in industrial production) indicate total suspended particulate levels that are 3-10 times higher than in other European cities. The concentrations of cadmium, nickel, and manganese also were significantly higher than in other places in Europe."

THE UNITY PRINCIPLE

Environmental health policy adopted in Poland is governed by the general principle of unity of research and action. Action is directed towards sufficiently recognized environmental health problems. At the same time,

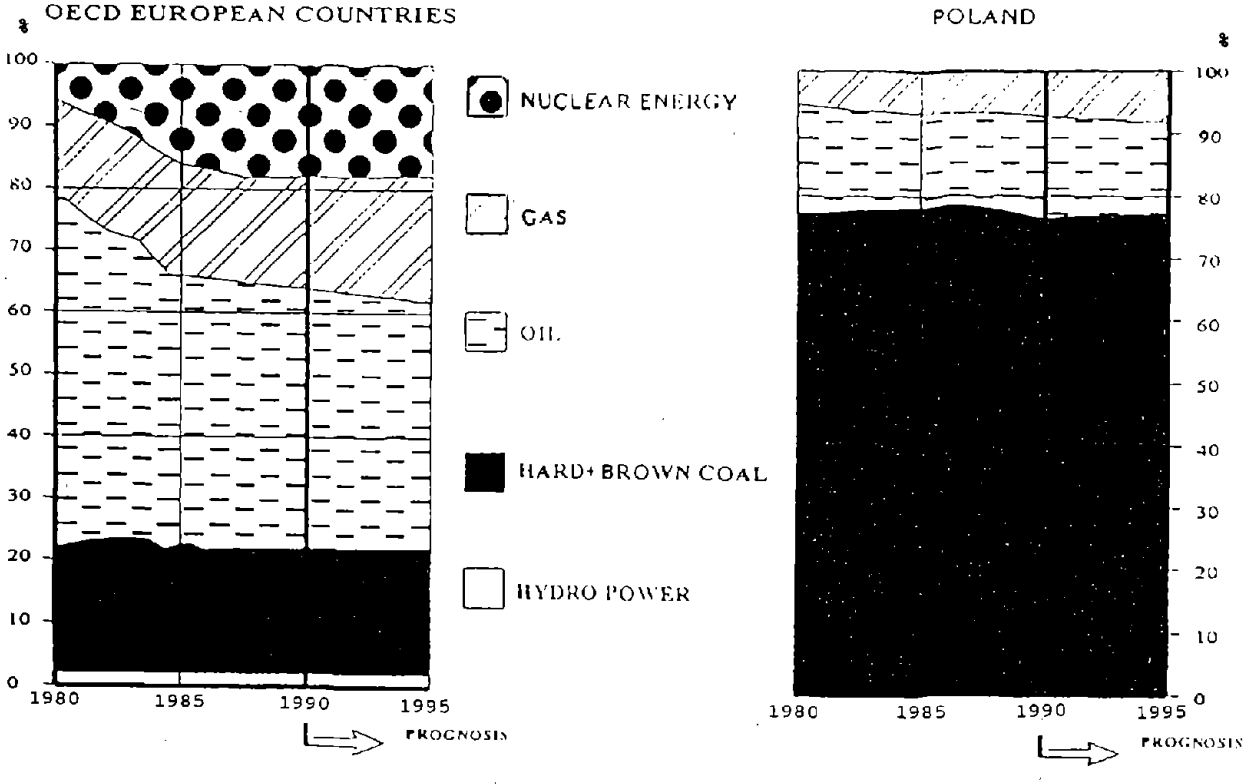


FIGURE 1. Energy production structure in Poland versus OECD European countries.

research and monitoring programs are implemented to improve knowledge of environmental health issues.

The Upper Silesia region of Poland is of greatest environmental health concern. The central part of Upper Silesia is situated within the administrative boundaries of Katowice Province. The province covers the area of about 6650 square kilometers (or 2.1 percent of the total area of Poland), and it is inhabited by four million people (11 percent of the total population of Poland). In the Katowice Province, 98 percent of coal and 100 percent of zinc and lead ores are mined, and 50 percent of steel, 35 percent of coke, and 30 percent of energy are produced. The people in the province account for 25 percent of the total number of occupational diseases in Poland and, probably the majority of the national environmental health problems occur here.

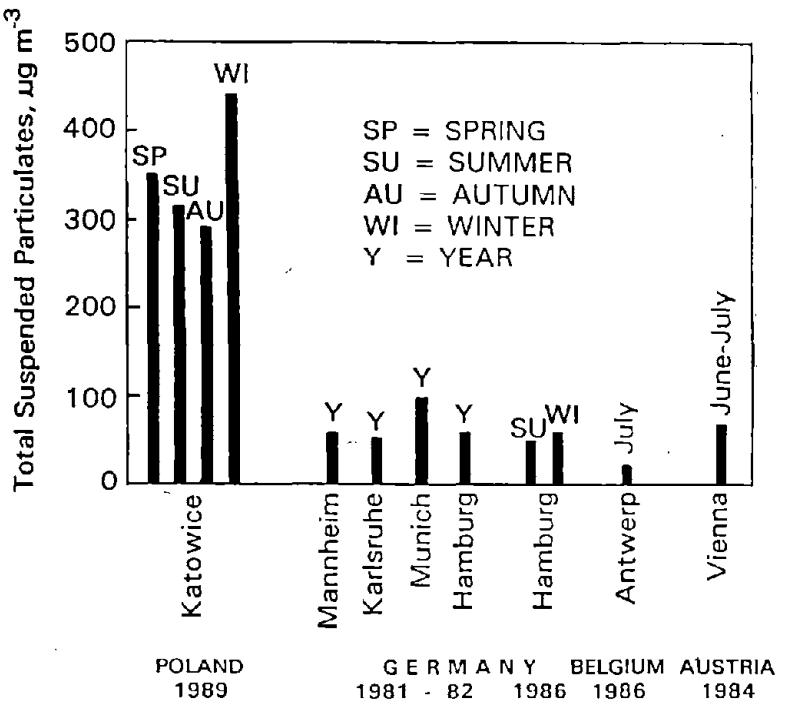


FIGURE 2. Average 1989 concentrations of total suspended particulate matter in Katowice compared with particulate pollution levels in other European cities. Adopted from Pastuszka et al., Atmospheric Environment 27B, pp. 59-65, 1993.

Particulate measurements made in 1989 in Katowice (prior to the political changes in Eastern Europe and the resulting decrease in industrial production) indicate total suspended particulate levels that are 3-10 times higher than in other European cities. (Figure 2)

The concentrations of cadmium, nickel, and manganese also were significantly higher than in other places in Europe. However, lead concentrations were comparable to European cities that experience high automobile traffic. (Figure 3)

HIGH-PRIORITY RESEARCH

The Polish government is giving high priority to research in the field of environmental health in this region. In 1991, the Silesian Environmental Health Monitoring Program was established to indicate priorities for the control strategies, to evaulate the efficiency of the control measures, and to advise on the current environmental health issues. Two monitoring approaches have been integrated into the program: health geography and an epidemiological approach. The

immediate action component of the program includes preventing lead poisoning in children, environmental health education and promotion, and a smog alert system. The program is coordinated by the Institute of Occupational Medicine and Environmental Health in Sosnowiec.

The Polish government has allocated some funds for implementation of that program; however, they will be insufficient. It is expected that one additional means could be obtained within the framework of international collaboration. The experience gained through this program soon will be extended to cover some other regions of Poland, and it also may contribute to the solution of environmental health problems in other countries of Central and Eastern Europe.

Currently, a national-scale strategic research program, with quantitative risk assessment whenever possible, is under development, directed towards determination of the impact of environmental pollution on health.

ESSENTIAL INFORMATION

Within the program, which is being harmonized with existing regional efforts, the following essential information is expected to be obtained:

1. Information on the spatial distribution of the health status of the population, especially the prevalence of diseases suspected to be of environmental etiology;

2. Quantitative data on the impact of environmental pollution, as well as of socio-economic, lifestyle and nutritional factors on health in large-scale prospective studies; two projects are being prepared:

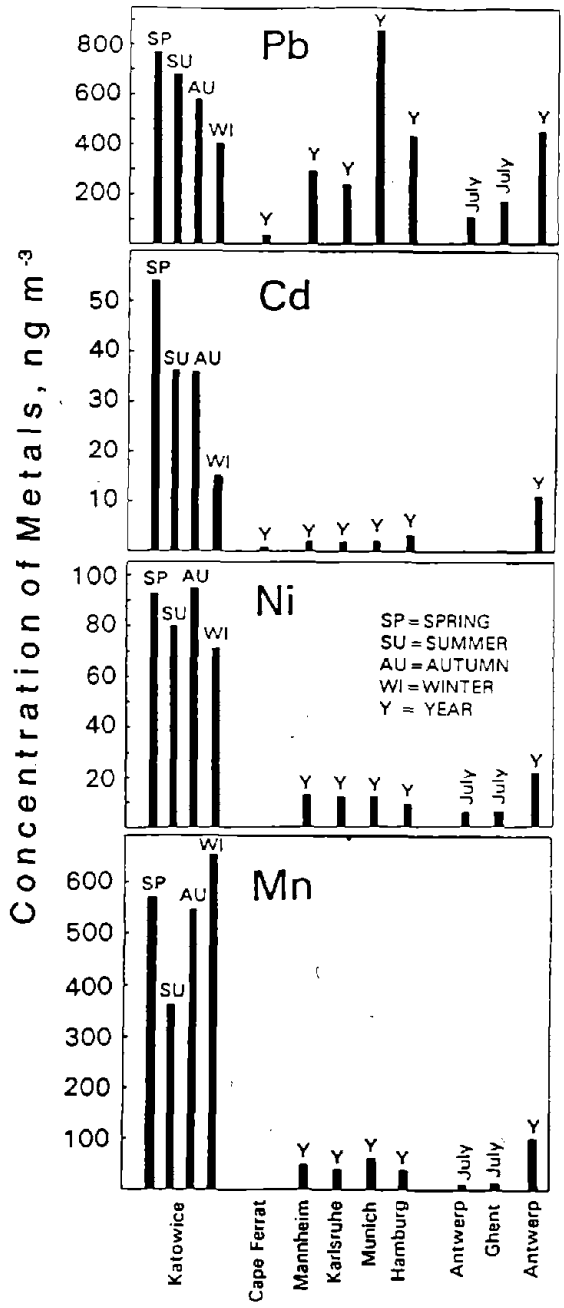


FIGURE 3. Average 1989 concentrations of airborne lead (Pb),cadmium (Cd), nickel (Ni), and manganese (Mn) in Katowice compared with levels in other European cities. Adopted from Pastuszka et al., Atmospheric Environment 27B, pp 59-65, 1993.

2.1 The quantification of the avoidable causes of premature death in Poland;

2.2 The impact of environmental factors on the physical and mental development of children in Poland;

3.) Specific environmental epidemiology data:

3.1 Health effects of exposure to "winter" smog;

3.2 Health effects of exposure to "summer" smog;

3.3 Asbestos exposure and lung cancer;

3.4 PAH exposure and lung cancer;

3.5 Health effects of lead exposure in children (including hearing function);

3.6 Electromagnetic fields (50 Hz) and leukemia in children;

4.) Population exposure data

4.1 Ultraviolet Radiation;

4.2 Pesticides;

4.3 Heavy metals (Pb, Cd, Hg);

4.4 Carcinogens (PAH, radon, asbestos);

4.5 Polychlorinated biphenyls (PCBs);

4.6 Environmental noise;

4.7 Indoor exposure (nitrogen dioxide, carbon monoxide, radon, pesticides, benzene, formaldehyde, environmental tobacco smoke, allergens, asbestos, respirable dust).

There is a clear need for actions to prevent further deterioration of the environment and health and to consistently improve the standard of environmental health in the country.

A NATIONAL PROGRAM

Definite tasks and objectives have been put forward recently in the National Programs of Health. High priority is given to the improvement of environmental health legislation and enforcement capacities, health education and promotion, as well as implementation of immediate remedial actions in the most polluted areas of Poland. Certain tasks designated urgent already have been accomplished within the existing financial and operational capacities.

Legal regulations are being corrected and improved, especially those referring to environmental standards. New public health legislation also is being prepared.

Activities directed towards the establishment of post-graduate training on environmental health have been initiated. In 1992, the Public Health School at the Institute of Occupational Medicine in Lodz started training the staff of sanitary-epidemiological stations. The intensive program of training environmental physicians is being expanded in collaboration with the World Health Organization and the research centers of the Netherlands.

In 1992, the National Center of Health Promotion became operational, and it also covers environmental health problems.

International collaboration and support would be vital for development and implementation of research and action programs on environmental health issues. Support is understood not only as financial aid for specific research projects, but also as the transfer of modern methodology and problem-oriented training.

Carol Pertowski, left, and Agneta Liebmann study a poster presentation.

Working Groups on Environmental Health

Clean-Up of Polluted Areas

PRESENTED BY ISTVÁN ÖRI AND CRAIG SLATIN

Our group included representatives of Lithuania, Hungary, and the United States. Most polluted areas in Lithuania and Hungary are corporate sites and abandoned military sites. Clean-up of industrial sites in Lithuania is the responsibility of the government of Russia, whereas in Hungary it is the responsibility of the government of Hungary.

"We discussed whether there is any information about past exposures and current health effects in nearby communities, to determine whether a site poses a health risk and whether it needs to be cleaned up. The military sites were restricted areas and health officials were not allowed there; there is almost no information about what went on at these sites or what the contaminants or levels of exposure were."

We discussed whether there is any information about past exposures and current health effects in nearby communities, to determine whether a site poses a health risk and whether it needs to be cleaned up. The military sites were restricted areas and health officials were not allowed there; there is almost no information about what went on at these sites or what the contaminants or levels of exposure were. So there is no possibility of studying the role of the sites in causing health effects.

HOW TO GAIN ACCESS

We discussed how environmental damage could be assessed and what resources could be used to access information. In Hungary, several government agencies are responsible for monitoring this damage, but they do not communicate well with each other. In addition, the information is not being collected in a unified fashion.

We discussed the definition of polluted areas, which ranged from specific sites to the entire region. Not much is known at this point. In Lithuania, 200 military sites need to be evaluated.

There are two related financial issues. Who is responsible? Where is the money for clean-up going to come from? Also, there are the issues of privatization and re-privatization (the proper return of land to former owners from whom they had been confiscated). Former owners are taking back their properties. When they want to use the land for agricultural purposes, for example, questions get raised about restrictions for the use of specific properties. How do you decide what is acceptable and what is not?

In Lithuania now, no clean-up is in progress. In Hungary, several clean-up projects are underway. For example, there are two military projects, one at an airport and the other at a former tank. The main pollutant at both is fuel. There is a clean-up at a former hazardous waste site. A large illegal

hazardous waste site was discovered in a national park, where much hazardous waste was buried. Once the clean-up has been done, the fate of the hazardous material must be determined.

THE TECHNOLOGY VARIABLE

We saw three main variables:

1. Technology. Technology for disposal is very limited; so is financing for it. And then there is the issue of public opinion. Even if you have proper technology and financing, the public has to accept it. Previously, we had discussed a site where incinerators were being considered as a solution. For that section of the public willing to have the incinerator there — if it is the appropriate technology to use safely for the chemicals that are on the site, the concern is for the period after the site is cleaned up. Other hazardous wastes will be transported to that location, and sometimes the public does not want that to happen. Technological assistance is needed from Western Europe and the United States for remediation technology and disposal technology.

Under the Superfund program, the U.S. Environmental Protection Agency has evaluated and assessed a wide range of remediation technologies, about which information is available. People responsible for making decisions in Central and Eastern Europe can consider that technology and decide whether it might be appropriate for their use.

2. Legislation. Hungary has legislation specific to privatization. If a party purchases property or a facility with hazardous waste in a secluded area,, that party is advised to remediate the site. It is incumbent to understand this. The party should have an evaluation done prior to purchasing the property and then negotiate a price. Once the party owns it, the party is responsible for full clean-up. We do not know what legislation exists in other countries in the region.

For the clean-up in Hungary, no site-specific or clean-up-specific training is being provided to the workers. There is no medical surveillance of workers, no monitoring for adverse health effects, and no special equipment being provided to workers for their personal protection.

3. Future use of the lands. We did not discuss this issue in depth because it is not an issue for the foreseeable future. People may not have the option of deciding how they are going to use the polluted areas for economic development. They may face no choice but to avoid development on polluted lands.

"For the clean-up in Hungary, no site-specific or clean-up-specific training is being provided to the workers. There is no medical surveillance of workers, no monitoring for adverse health effects, and no special equipment being provided to workers for their personal protection."

There was some discussion about what to do at a former lead-battery recycling facility in Hungary that has a very bad hazardous waste problem.

DISCUSSION

Question: Some people argue that very little or no clean-up should be done and all the existing resources should be put into improved technologies for the future, such as pollution prevention. What does your group think about this issue?

Answer:. Members of the group are outraged about hazardous waste sites that are now resulting in adverse health effects among children and in low birth rates. The lead plant is causing stillbirths. These facilities are not getting cleaned up.

We briefly discussed priority-setting. But Lithuania cannot even address priorities until it

learns what is on 200 military sites. It must decide whether to leave it or dispose of it; probably it will clean up hazardous waste. But its first priority is to find out what is there. The Russian military says little about what it dumped there. And so there's no way of knowing whether health problems in nearby communities are related to these sites. That is not acceptable.

Pollution Prevention

PRESENTED BY ILLÉS DÉSI AND GRETCHEN LATOWSKY

Our group included every country represented at this symposium. We divided our discussion into two parts: Research and Education.

In many areas, environmental health should be further studied. There were many suggestions about setting priorities, about how to prioritize environmental health issues,. Experience from one country might be applied in other countries. It is a possible area for cooperation among countries.

"International collaboration concerning point-source emissions, especially those that affect several countries, would be worth pursuing."

• **Environmental Technology.** The extent of problems and the quality of the environment are questionable. There were suggestions to pursue this topic in a cooperative manner. However, environmental technology is a wide area and it would be very difficult to harmonize approaches among all countries in the region. It was suggested that we concentrate on the focal points of pollution and look at areas where pollution can be measured and monitored.

• **Quality Assurance.** We discussed this subject retrospectively. Many in our group questioned the quality of data. But there was general agreement that not all of the data generated in the past could be used. International collaboration concerning point-source emissions, especially those that affect several countries, would be worth pursuing.

Who would finance this very costly work?. Research on environmental health is very important, but scientists in the region cannot depend on domestic funding, even though they try to obtain it. They must seek external grants.

DISCUSSION

Gillian Weingartner, U.S. Peace Corps: I would like to give an example of international collaboration. About three weeks ago, Peace Corps Hungary organized and partly financed, in collaboration with the Environmental Protection Agency and the U.S. Forestry Department, a symposium similar to this one. Invited delegates from Hungary and other countries in the region discussed international collaboration for international problems, such as cross-boundary environmental problems. I cite this in part to point out that there are many useful resources within countries in the region.

Research and Professional Education

PRESENTED BY ALÁN PINTÉR AND BARRY LEVY

We focused on the education of medical students. In Hungary and other countries in the region, changes are already taking place to improve and better coordinate medical education. For example, in Hungary, undergraduate and

postgraduate medical education is being coordinated with the education of non-medical professionals who are working in health and medicine.

Far more hours are devoted to occupational and environmental health —30 or 40 hours —in Hungary's medical schools compared with those in the United States, where the current average is six hours for occupational health. Yet it was felt that more could be done in Central and Eastern Europe to better integrate occupational and environmental health with other subjects in the curriculum, such as physiology and pathology, and to teach skills for analyzing data. In other words, rather than just presenting facts about occupational and environmental health, it is important to teach medical students to be more skillful in using epidemiology and other approaches.

DEVELOP MORE FACULTY

With regard to medical student education, there is a need to develop more faculty to champion occupational and environmental health and a need for closer faculty-student relationships. In one country, the faculty are paid so low that often they are anxious to develop other sources of income; therefore, they do not have the time and the students may not have the interest to develop close faculty-student relationships. Although continuing education is required every five years, there may be a need for a more stringent continuing education program and for recertification examinations in environmental and occuptional health.

We talked about improving training and education in other disciplines. Toxicology education is strong in the region; yet there is still a need for improving toxicology education, such as by teaching skills for data management better, and perhaps introducing an interdepartmental course. Some subjects like epidemiology and industrial hygiene are not widely taught as areas of specialization. Epidemiology is taught to medical students, but there is a need to develop non-physician epidemiologists. There is also an important need to develop programs in industrial hygiene.

INTERNATIONAL INITIATIVES

International exchange and international professional societies were discussed. A combined regional ("territorial") branch of the International Society of Environmental Epidemiology and the International Society for Exposure Analysis has been established. In addition, the Global Environmental Epidemiology Network (GEENET) of the World Health Organization offers free membership, and free publications and training materials.

"Far more hours are devoted to occupational and environmental health—30 or 40 hours—in Hungary's medical schools compared with those in the United States, where the current average is six hours for occupational health. Yet it was felt that more could be done ..."

Not only do people need skills and specific facts, but they also need to learn how to collaborate — among disciplines, among institutions within the same country, regionally, and locally. On many projects, people can accomplish so much more if they are working with people from other countries.

As is the case in the U.S., the image of public health and preventive medicine, including occupational and environmental health, is unfortunately a poor image for too many medical students who often are attracted to areas of specialization that are financially desirable. Some perceive intellectual advantage; others may perceive advantage in working with technically sophisticated equipment. We all need to work to improve this image of

occupational and environmental health, among medical students and among people in general.

DISCUSSION

Dr. Andrew Watterson : Many public health problems mean "pulling people out of the river" and trying to treat them. Some people argue that what is really needed is upstream intervention to stop people from falling into the river in the first place. How did your group deal with upstream public health?

Dr. Levy: I think it is fair to say that our discussion dealt more with procedural or administrative organizational issues rather than content of educational programs. Probably most of our group would agree with what you said.

Roles of Government Ministries

PRESENTED BY ANA MARIA OSORIO

We talked at first primarily about the different types of organizational structures found in the three countries represented in our group: Romania, Hungary, and the United States (mainly the state of California). It took a while for us to understand each other's roles and different structures, and what was different and similar among our countries.

Infrastructure needs much financial and technical support in Romania and Hungary. Many new groups are being formed, and many groups are still trying to determine what their mandates are and what their specific roles should be. Some people with little experience are being asked to perform tasks for which they do not have the training and do not have the guidance for executing.

INFORMATION NOT SHARED

Until nearly four years ago, in Romania and Hungary, information had not been shared with the public or with other research groups very well. This problem must be overcome. When it is overcome, it should help to restore trust in government.

There are some major differences among the three countries. For getting a permit to start a business, there is a lot of overlapping jurisdiction among local, provincial, and national authorities. That makes national control of what happens a bit problematic.

We have seen some positive changes. For example, reorganization is taking place in both Romania and Hungary and in other Central and Eastern European countries; some problems are being addressed. For example, collection of fees and permitting money can be fed back into the general state funds and used to create the kind of training and expertise within government that can better execute mandates. The group wanted to acknowledge the tremendous support — perspective, technical assistance, and finances — that is being provided by international groups.

Some of the possible governmental roles that we expect to see in all three countries are the development of legislation, including standards development, monitoring, and enforcement. But government cannot be the central force in orchestrating all the different kinds of expertise, public

"Infrastructure needs much financial and technical support in Romania and Hungary. Many new groups are being formed, and many groups are still trying to determine what their mandates are and what their specific roles should be. Some people with little experience are being asked to perform tasks for which they do not have the training ... "

"The government must work with local authorities in executing control and implementation of laws. There has to be a good interaction upward to the state and downward to the local authorities because of the mandate and regulations that sit with the state and the role of local authorities in collecting data. It is inappropriate to only collect data; all of us need to translate data into action, and then evaluate the effects of this action."

opinion, and information that go into reforming regulation.

GOOD INTERACTION NECESSARY

The government must work with local authorities in executing control and implementation of laws. There has to be a good interaction upward to the state and downward to the local authorities because of the mandate and regulations that sit with the state and the role of local authorities in collecting data. It is inappropriate to only collect data; all of us need to translate data into action, and then evaluate the effects of this action.

Data can be used to redirect priorities. It is only by the use of data that you can have a prioritization scheme, especially in some of the countries that have many choices in direction. They need a rational approach. Furthermore, regulation and its modification needs to be based on information being gathered.

It is important to get information to the public, other state agencies or groups, and other research groups. California has much experience working with the public. Romania and Hungary, however, are very much interested in developing some of the techniques that we in the U.S. already have used to get information out to researchers and other state agencies, into scientific publications, and, in an understandable manner, to the public.

USE OF REGISTRIES

Another area where government can be useful is in the establishment and use of registries. Some registries, such as cancer, birth defects, lead, and pesticide usage registries, are only partially established in some countries in the region. There is a potential for a "reusable exposure" type of registry, for such substances as lead or pesticides, trying to tie what is found in the environment and devising corrective measures, as needed.

Government also can lead in certification or accreditation of laboratories. Data must be gathered at a very high level of quality. Bringing experts in to teaching laboratories to demonstrate data analysis can be very helpful.

We all agreed about the collaboration that must exist among universities, research groups, and government agencies. All three of these entities have something to contribute and they must work collaboratively. Public awareness has to be raised about environmental problems and occupational health concerns. Perhaps the public will have more confidence in the messages they hear if there is consensus among different groups — universities, research groups, and government agencies.

There must be better training of health professionals, physicians, industrial hygienists, paraprofesionals, and others. Environmental and occupational health problems require multi-disciplinary approaches.

USE THE MEDIA

More possible roles for government include routinely distributing publications and technical material. This has not been done very much in this region and there is much resistance. We have to

demonstrate that some information can be conveyed in a non-technical, understandable manner. Another area that needs to be developed, where government could play a role, is raising public awareness and communicating about risks. Experts could advise government how to convey messages on TV and radio and to the press. In California, where we have many different groups with many different needs, by identifying problems early and quickly informing the public about what government is doing, we develop a collaborative approach to many problems.

"Data can be used to redirect priorities. It is only by the use of data that you can have a prioritization scheme, especially in some of the countries that have many choices in direction. They need a rational approach."

Conflicts have developed recently between nongovernmental organizations (NGOs) and government agencies. NGOs are criticized for disseminating inaccurate data. Government is criticized as being too secretive, not sharing information, and not discussing issues with other public entities.

NGOs and government agencies need to develop a better understanding of one another. One option would be to invite NGOs into government planning discussions Another option is to better train NGO representatives and the general public

Tadeusz Dutkiewicz of the Nofer Institute in Poland makes a point.

III. Restructuring Occupational Health

Young man at work in a glass factory near Eger.

Restructuring Occupational Health in Hungary: A Perspective from a Government Research Institute

GYÖRGY UNGVÁRY

The Constitution of the Hungarian Republic ensures safety and health at workplaces through a legal right to the conditions that guarantee health and safety at work.

Based on principles declared in the Constitution and in the New Labor Code which came into effect in 1992, the Occupational Safety Act, which is expected to take effect on January 1, 1994, will regulate the personal, material, and organizational conditions of health and safety at work to maintain the health and working capacity of employees. Thus, it will prevent work-related accidents, occupational diseases, and the facilitating effect of work stress and strain as well as workplace pathogenic factors on the progression of predestined diseases.

In Hungary, employers are responsible for implementing these laws. They are aided and controlled by

- The occupational safety service and authority,
- The occupational hygiene service and authority, and
- The occupational health service.

COOPERATION NEEDED

The special cooperation of employers and employees is fundamental to safety and health at work.

Occupational safety operates under the supervision of the Minister of Labor, while occupational hygiene and occupational health care operate under the supervision of the Minister of Welfare. I will discuss the organizational and functional changes caused by change in the political, social, and economic system of the occupational health service only. In order to better understand the difficulties and the necessity for changes in the structure and function of the

occupational health service, a review of the history of Hungarian occupational health is necessary. This paper will not discuss the Hungarian occupational hygiene service, although the activity of the occupational health service is closely connected with that authority and other (professional, practical, research, and training) activities of both services.

Before the present change of social, political, and economic systems, three periods could be identified in the history of the occupational health service.

FIRST PERIOD (11th Century - 1945)

Hungary's occupational health is rooted in one of the oldest, most successful activities of Hungarian medicine. King Stephen I (Saint Stephen), the founder of the Hungarian state, in his Ius Regale of 1030 (on the royal surroundings of mineral resources), included rules for employment of miners. In the Hungarian mining towns, miners' hospitals, relief funds, and sickness insurance already were operating in the 12th Century. Although Hungarian factory physicians in the 18th Century attached great importance to prevention as well as curative activity, the Hungarian occupational health service, in its first period, did mainly curative activity.

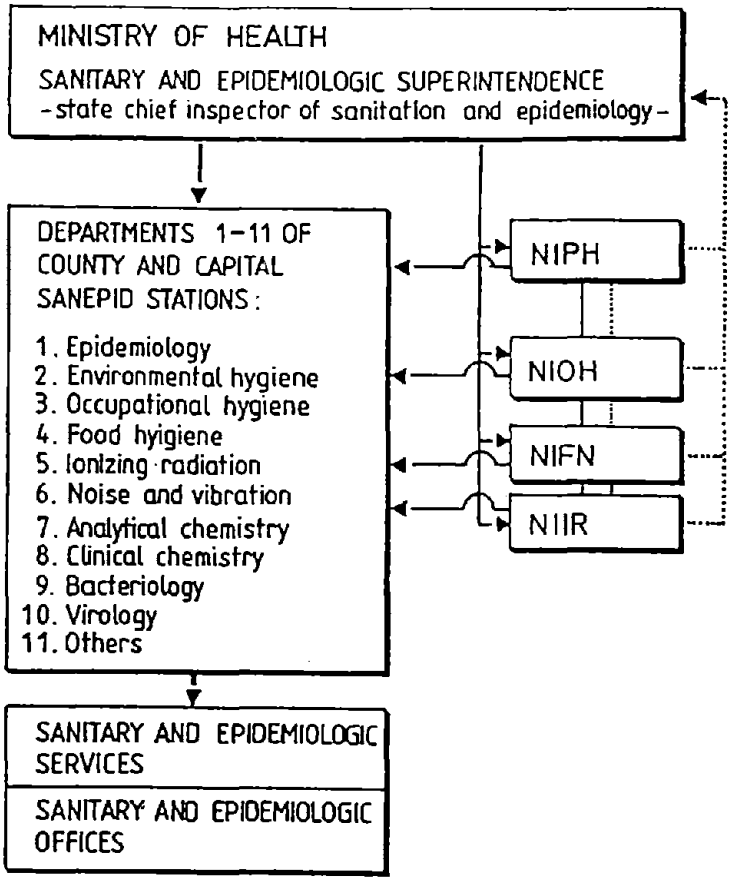


FIGURE 1. Organizational structure of occupational hygiene in Hungary. Between 1951 and 1990, occupational hygiene operated within the State Sanitary and Epidemiologic Superintendence, established on the Soviet model. NIPH: National Institute of Public Health; NIOH: National Institute of Occupational Health; NIFN: National Institute of Food and Nutrition; NIIR: National Institute of Ionizing Radiation.

SECOND PERIOD (1945 - 1951)

After World War II, demand grew for solving the health problems of workers when a 1945-46 survey conducted in 1,923 factories on the initiative of the Industry Ministry proved that the health of the undernourished workers had been severely endangered by extremely unhealthy work conditions. On the initiative of the Free Trade Union of Physicians, the training of physicians to work in factories began. One hundred and 50 doctors participated in the first training course in 1946, and their numbers increased quickly. The physicians —

employed by the factories — also performed curative activity in addition to prevention.

THIRD PERIOD (1951 - Present)

This period continues with gradual changes introduced since 1991. A detailed description of the period is necessary in order to understand the changes. In 1951, regardless of national traditions, two state health services were established on the Soviet model for the protection of healthy conditions in the workplaces and the health of the workers, for the treatment of their diseases, and for determination of their fitness for work:

1. The occupational hygiene service and authority (Figure 1)

2. The state occupational health care service

OCCUPATIONAL HEALTH A STATE RESPONSIBILITY

The state occupational health care service was established in 1951 on the basis of a resolution of the Ministerial Council. It was created to cover the employees of state-owned medium and large factories and to meet the demands of the so-called socialist economy. The resolution declared the organization and maintenance of occupational health protection to be a state responsibility and the organ serving this purpose was the occupational health care service. The service was to be organized in every factory with more than 500 workers, or with fewer workers if the health hazards determined by the characteristics of a factory's parameters warranted it. Directives determined the size of the occupational health care service on the basis of the size and characteristics of the activity carried out in the factory.

The occupational health care service has to be organized in these places:

a) Plants and factories in mining, foundries, chemical, and food industries, and at construction sites where at least 300 workers are employed,

b) Metallurgy plants and factories where at least 400 workers are employed, and

c) Other plants, factories, state farms, and cooperative farms where at least 500 workers are employed.

A full-time occupational physician has to be employed in factories belonging to:

- Group "a" for every 1,200 workers,
- Group "b" for every 1,400 workers, and
- Group "c" for every 1,600-1,800 workers.

For small enterprises with 300-500 workers, occupational health care has to be provided in connection with the service of the large- or medium-sized enterprises, or a joint occupational health care service may be organized for them, taking into account the total number of employees in cases of enterprises located not far from each other. (The latter, however, was not carried out in practice; in these places, care was provided by employing part-time occupational physicians or occupational district physicians in the smaller settlements.) In the occupational health care service, one occupational nurse has to be employed for each full-time physician and for each occupational physician who works more than three hours daily.

Examination and care of patients presenting with or suspected of having occupational diseases is provided by the occupational health care service, the occupational health consultants, and in some professionally justified cases by consultation with the out-patient specialists and hospital department of the National Institute of Occupational Health, which serves the whole country. The responsibilities of the occupational health care services at present include:

1. Curative-preventive care of the factory workers at the workplace, and

2. Public hygiene, within this mainly occupational hygiene activity.

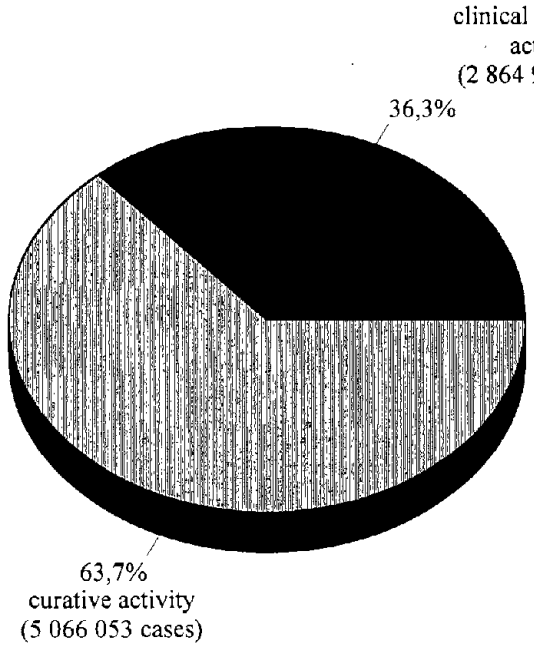


FIGURE 2. Percentage distribution of clinical preventive and curative activities of occupational health care services, Hungary, 1991.

Both activities involve health education, which means promotion of a healthy lifestyle.

FEWER THAN HALF COVERED

Despite regulation that is comprehensive and sometimes too meticulous, occupational health care is provided for fewer than half of Hungary's employees. Of 4.8 million employees, 1.4 million were covered by occupational health care. The number of large enterprises covered went below 3,000 in 1991. The number of enterprises covered does not reflect the small enterprises emerging as a result of the privatization process in the country. These numbered more than 100,000 in 1992. Although occupational hygiene and health education should be the primary responsibility of the occupational health care service, the service has preferred to carry out curative activity, to the neglect of its preventive work. (Figure 2)

The joint work of the occupational hygiene and occupational health care services is

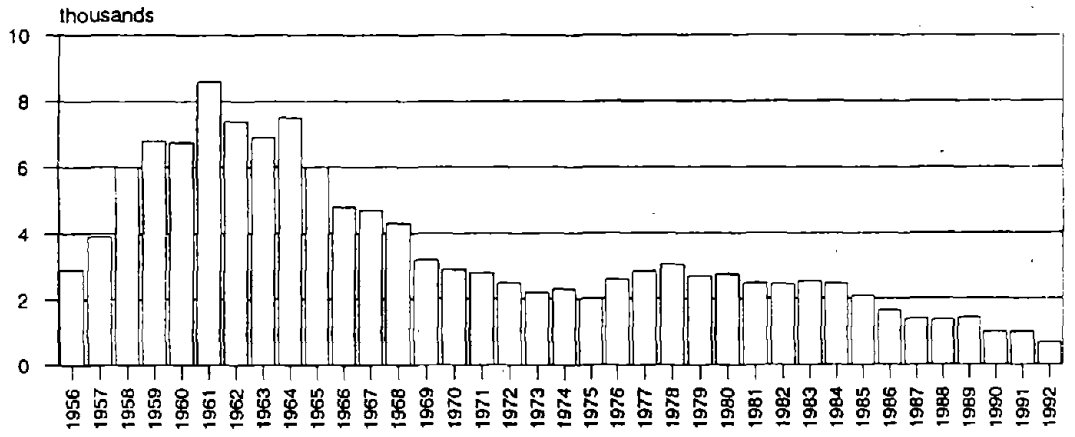


FIGURE 3. Incidence of occupational diseases in Hungary. Reporting has been compulsory since 1956. At present, the reporting of 63 diseases or disease groups is compulsory.

well characterized by the incidence of cases of increased exposure reported on the basis of biological monitoring, as well as the yearly frequency of occupational diseases whose reporting is compulsory. Recording of work-related diseases has not been compulsory until now. The record shows a low incidence of occupational diseases, due partly to the lack of reporting requirements, "loose" reporting, and increased unemployment in the first two years. (Figures 3 and 4)

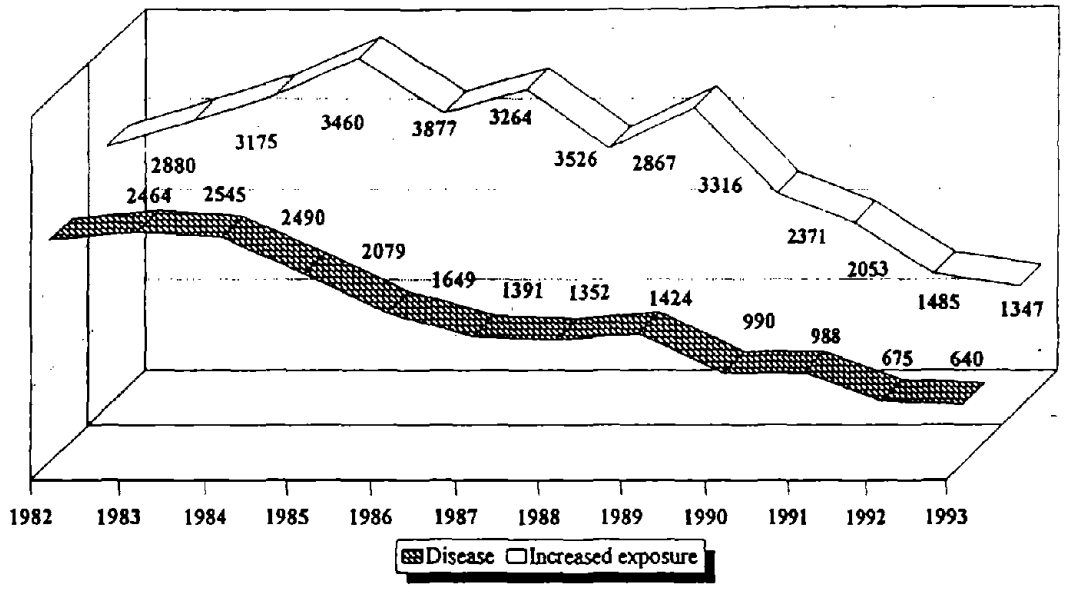


FIGURE 4. Incidence of cases of increased exposure and occupational disease in Hungary between 1982 and 1993. Obligatory reporting involves 20 chemicals and noise. In the case of chemicals, exceeding of the biological limit value has to be reported. Detection and reporting of cases are made with the help of biological monitoring, obligatory since 1982. Increased exposure to noise is considered, when hearing loss appears in the 30-40 dBA eq zone, the reporting of which is also obligatory.

Prevention, reporting, and recording of occupational accidents is the responsibility of occupational safety, which operates independently of the occupational health service.

The fundamental changes in the Hungarian political and social system in 1990, as well as in the economic system, necessitate the reorganization of the occupational health care system.

The earlier, nearly exclusively state-owned large-enterprise economy was changed and is changing into one that is mainly privately owned and comprised of smaller enterprises, according to the needs of the transition to a market economy. This requirement is satisfied by Act No. XI of 1991, under which the state ensures guidance and supervision of public hygiene — including occupational hygiene — and epidemiology and health protection (public health) activity and supervision of health care by the establishment and operation of the National Public Health and Medical Officers Service (NPHMOS) under the direct guidance of the Minister of Welfare. (Figure 5)

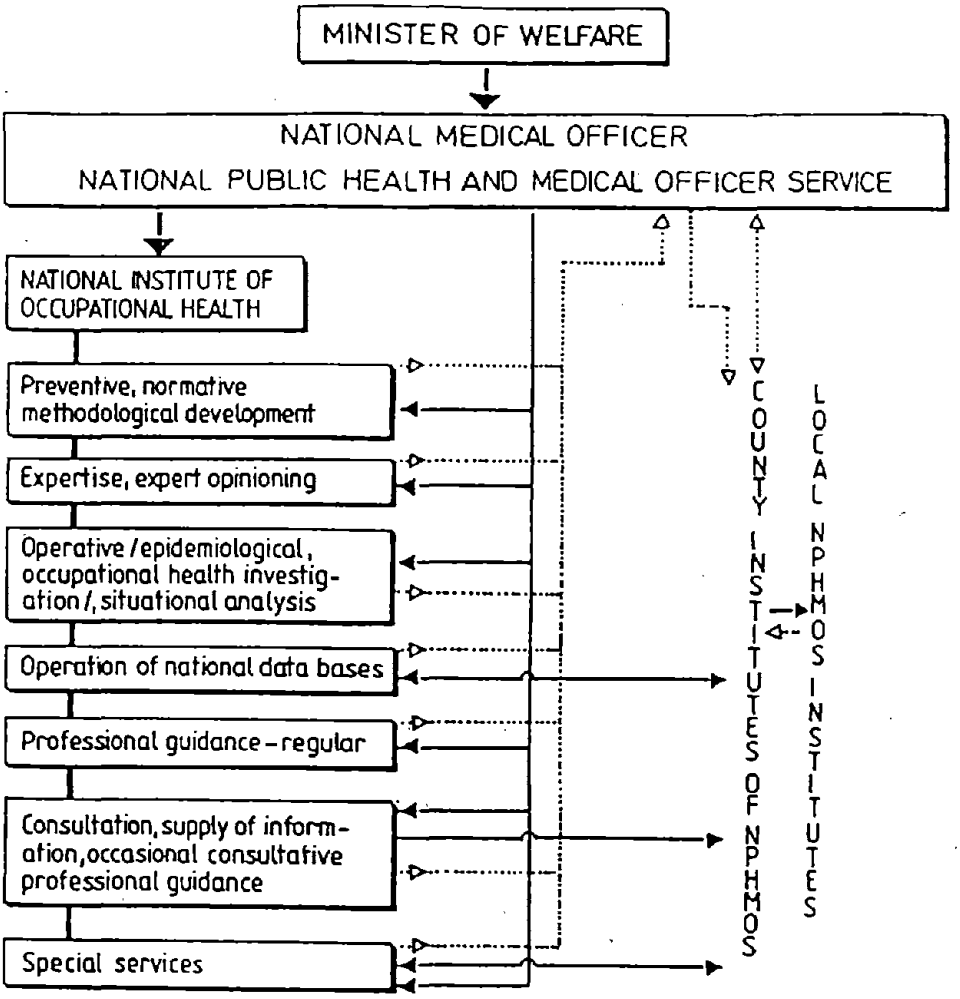


FIGURE 5. Professional guidance and structure of the Hungarian occupational hygiene network. The occupational hygiene service has been operating within the framework of the NPHMOS since 1991. NPHMOS supervises professionals as well as the system of occupational health care service. Arrows show the direction of information flow.

According to the Act, the occupational health care service continues to operate with the professional guidance of the NPHMOS. Occupational health care is not included any longer in the re-organized primary health care system. Under regulations, occupational health has important responsibilities in the creation of "healthy workplaces," disease prevention, and health promotion. Occupational health care is the activity which aims at creating and maintaining healthy and safe work environments which promote preservation of optimal physical and mental capacity in the workers. It also aims to adapt work to the capacity and physical and mental status of the workers, taking into account work environment risk factors. The occupational safety and health acts presently in preparation as well as the supplementing orders of the Minister of Wel-

fare will determine the organization, organizational structure, and function of occupational health taking into account rule No. 161 of the International Labor Organization Convention from 1984 and national characteristics. Among these, we emphasize the following:

OCCUPATIONAL HEALTH SERVICE

• The employer has to provide occupational health care covering all employees, taking into account the characteristics of the enterprise.

• Medical activity in the occupational health care service is guided by occupational health specialist physicians; nurses, psychologists, ergonomists, and occupational safety specialists also work in the service.

Suggestions for the organizational structure: Structural units of the service undertake the coverage of a specified number of employees, depending on the degree of their health risks and the dangerousness of their workplaces and jobs.

"The system has to be changed into a modern occupational health service with parallel changes in financing. Introduction of the risk-related employer contribution system based on cost and risk analyses can be expected in 1995."

STRUCTURAL BUILD-UP

Occupational health centers should be established to cover the small enterprises, and medium and large factory occupational health services should be operated on the premises of or near to medium and large enterprises. To meet the demands best, occupational health services offered by doctors privately or in partnership also may operate. Details of the structural build-up are discussed in the draft governmental order which is attached to the Occupational Safety Act.

The tasks of the Occupational Health Service are summarized in the draft order of the Minister of Welfare supplementing the Occupational Safety Act. But these are worth stressing:

• Examining workers and rendering an opinion about fitness for work

• Detecting and analyzing risk factors connected with work and the work environment and working out recommendations for their elimination

• Promoting healthy working conditions, preventing the harmful effects of pathogenic factors in the work environment, and eliminating the hazards accompanying new technologies

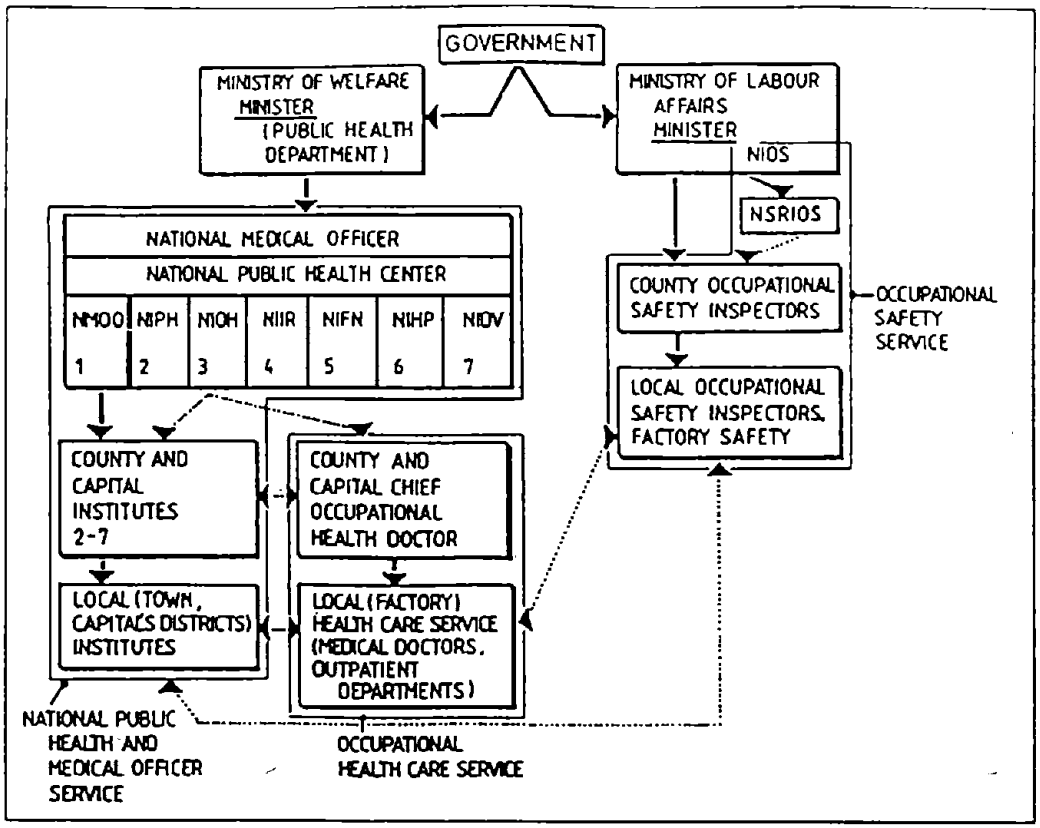


FIGURE 6. Occpational health (occupational hygiene and occupational health care) and occupational safety in Hungary -- 1991. NIOH is one of the national institutes which, together with the National Medical Officers Office, forms the National Public Health Center. Local occupational hygiene activity (authoritative and practical) is carried out in the county, capital, and local (town and capital's districts) institutes. Occupational health care services and occupational safety service are independent. The three services (occupational hygiene, health care, and safety) work in close cooperation. NMOO: National Medical Officers Office; NIPOH: National Institute of Public Hygiene; NIOH: National Institute of Occupational Health; NIIR: National Institute of Ionizing Radiation; NIFN: National Institute of Food and Nutrition; NIHP: National Institute of Health Promotion; NIDV: National Institute of Dermatology and Venerology. NIOS: National Inspectorate of Occupational Safety; contiguous line; authority activity; dotted line: professional advice and guidance.

- Training in first aid, and organizing and delivering it in the workplace

- Managing accidents and medical first aid

- Rehabilitating disabled workers

- Prevention (screening) activities for occupational and work-related diseases

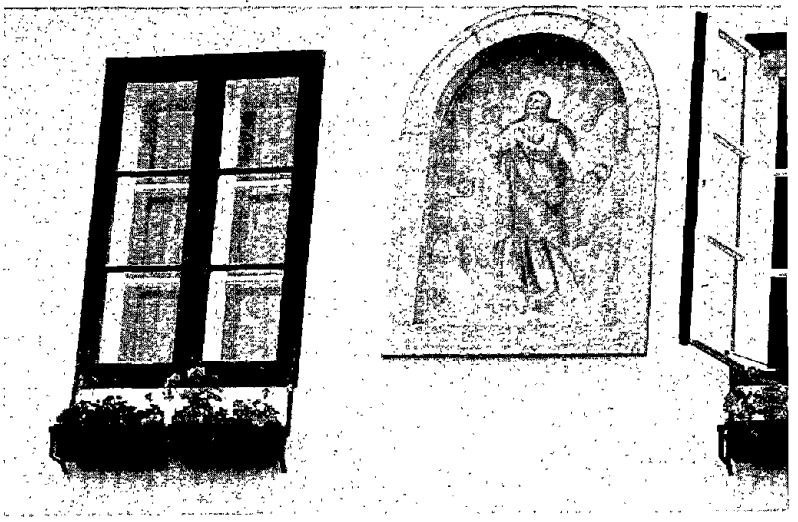
The occupational health care service cooperates with the occupational hygiene professionals of NPHMOS, which is the professional supervisor, as well as with labor safety, operating under the supervision of the Ministry of Labor. (Figure 6)

The financing of the occupational health care service also has to be resolved. Establishment of an independent non-profit accident and occupational health insurance system seems to be the best solution. Contributions to this new compulsory insurance would be paid by the employers in proportion to the health risks of the work and work environment. This financing system would support mainly prevention.

TRANSITION NEEDED

A transition period is needed. Until realization of the legislative and economic conditions of the new occupational health care service, the present occupational health service continues to operate with the physicians and nurses employed at the beginning of 1993. The system has to be changed into a modern occupational health service with parallel changes in financing. Introduction of the risk-related employer contribution system based on cost and risk analyses can be expected in 1995. Until changes are worked out and implemented, financing should continue as it existed in January 1993. Financing at present comes from the Health Insurance Fund through the budget of the health institutions. Social Insurance budgeted 1.5 million forints for 1993 for this purpose. But this sum also covers other expenses. Factory owners can contribute by covering the costs of medical equipment and accessories and the operating costs of consulting offices.

In summary, reorganization of the occupational health care service is justified for both economical and professional reasons. An occupational health service based on large enterprises is unable to serve the employees of the small-scale enterprises that are characteristic of a market economy. Moreover, the occupational health care services prepared for curative work are professionally insufficient for the preventive work demanded from them. For this reason, the establishment of an up-to-date occupational health service fulfilling preventive tasks and complying with the structure of the national economy is an urgent task.



Wall painting framed by an arch on a street in Eger.

Occupational Health versus Occupational Safety: An East European Dilemma

ANDRAS BÉKÉS

"In this critical period, there is an increased risk that both employers facing economic pressure and employees who face economic pressure and also fear for their jobs will see occupational safety and health as luxuries. The increasing fear of unemployment can lead them to 'conspire against safety.'"

As part of the transition in Central and Eastern Europe from the socialist to the capitalist experiment, there are no real lessons to learn except from each other. The recent changes in the countries in these parts of Europe have some remarkable similarities and the lessons learned and the dilemmas faced in Hungary can be instructive for experts and administrators in other countries. The same is true for most of the problems related to occupational health.

The population of Hungary is approximately 10 million. The number of unemployed is about 700,000 and will be close to 950,000 by the end of the year.

State debts and budget deficits in Hungary are very high and a large part of industry is ineffective. Capital is lacking; inflation is high. This often puts a prohibitive cost on investments, including investments for labor protection. State-of-the-art technology and hopelessly out-of-date machinery exist together. The average age of industrial machinery is 17 to 18 years. A number of plants are closing. It is happening gradually but regularly. Investments for labor protection can hardly be expected in these factories. Many enterprises operate under heavy economic pressure. They are straining to come up with investment capital and suffer the burden of high taxes and extremely high Social Security contributions.

AN INCREASED RISK

In this critical period, there is an increased risk that both employers facing economic pressure and employees who face economic pressure and also fear for their jobs will see occupational safety and health as luxuries. The increasing fear of unemployment can lead them to "conspire against safety."

Values are distorted and the perspective is wrong. Consequently, the State must play a more active role in labor protection, especially when it comes to enforcement.

Relations within occupational safety and occupational health and hygiene are a controversial area in most Central and Eastern European countries, including Hungary. It involves legislation, research, monitoring, and enforcement.

The one field in which some harmonization has been achieved is legislation. The new Act on Labor Protection treats occupational safety and health requirements together. Otherwise, there are two enforcement agencies and two or more research institutes under two separate ministries.

The welfare administration takes a "holistic view" of humans and their health, arguing that one should not separate the working person from the person in the general environment or the person visiting his or her general practitioner. Therefore, in this view, all of the agencies responsible for the welfare of people in the workplace and in the general environment should be concentrated within the health administration and integrated — as they are — into one big public health agency, which includes occupational health inspection.

Others, including the labor administration, question this approach. They think occupational safety and health is a distinct field with its own special problems and methods requiring as much engineering and hygiene expertise as medical knowledge. Those who criticize the welfare administration's view also are critical of the medical doctors' competence in occupational hygiene enforcement.

The role of the State is changing in enforcement or inspection. The sole owner has become more and more a controller, giving special weight to the inspection agencies. One of them is the Hungarian Labor Inspectorate.

The Labor Inspectorate is an independent national agency with a separate chapter in the national budget, under the supervision of the Minister of Labor. The Labor Inspectorate is concerned with occupational safety. It inspects compliance, prepares legislation, proposes policy, and reports yearly for the government. It deals with information, education, and coordination.

NO SEPARATE ORGANIZATION FOR ENFORCEMENT

The other agency is the National Public Health Service. Occupational health enforcement is the responsibility of the National Public Health Service, which is the domain of medical doctors. The Public Health Service includes, among other things, food and soil hygiene, epidemiology, water quality, emissions, radiation, epidemic control, general health issues of the population, occupational health, and so on. But there is no separate organization within the Public Health Service to deal with occupational health enforcement.

Almost all responsibilities of the Labor Inspectorate concern occupational safety. On the other hand, only a very small part of the responsibilities of the Public Health Service concern occupational health.

At the request of the government, the International Labor Organization (ILO) sent a tripartite mission to Hungary in 1991 and 1992 to analyze the system of labor inspection and to make proposals for further development. The mission made a detailed report of its work and formulated conclusions in 25 major recommendations. It proposed that a national labor protection policy be formulated, integrating occupational safety and health, and that a restructured labor inspection system should be constituted, integrating safety and health inspection. The ILO experts warned that occupational health enforcement is at a very low level since the Public Health Service gives preference to its other activities.

"The welfare administration takes a 'holistic view' of man and his health ... in this view, all of the agencies responsible for the welfare of man in the workplace and in the general environment should be concentrated within the health administration ...

Public health officials, employers, employees, and government agencies held a high-level tripartite conference in March of this year to discuss the recommendations and to determine the agenda for the future. The conference formulated its conclusion in a public tripartite statement.

The welfare administration was alone in its stand; the employers' and employees' organizations agree with the idea of establishing an integrated occupational safety and health inspectorate within the labor administration. The welfare administration has disagreed with the ILO experts' analysis and, contrary to the opinion of the social partners, finds it "inopportune" to integrate occupational safety and occupational health.

... Others ... think occupational safety and health is a distinct field with its own special problems and methods requiring as much engineering and hygiene expertise as medical knowledge."

NEW NEGOTIATIONS URGED

Common sense is often obscured by departmental and personal interests, traditions, and suspicions. No feasibility study has been made. The employers' and the employees' organizations, however, are urging the labor and the welfare administrations to continue negotiations with a view to establishing an integrated inspectorate in accordance with the ILO team's recommendations.

A proposed new Act on Labor Protection is being discussed in the Hungarian Parliament. [The Act was passed in October 1993.] The proposal would bring the occupational safety and

health requirements together but for the time being leaves the separate institutions intact. However, a number of Members of Parliament have raised the question of integration as a necessary step forward.

The issue is complicated by the problem of in-plant medical doctors. Approximately 2,000 medical doctors are working full-time or part-time in various enterprises. These doctors, who are competent chiefly in curative work, have been lobbying for legislation to make their employment mandatory.

The welfare government proposed that these doctors be entrusted with the preventive responsibilities of occupational health services. The employees' organizations demanded that occupational health care in the form of in-plant doctors be provided by the employers, which raises difficult questions. Are the in-plant medical doctors willing to give up all curative work for prevention? Are they competent to take care of all of the multidisciplinary responsibilities of occupational health services? Are all employers willing to pay for the new preventive services? Is this what the employees' organizations really want?

For the time being, these are controversial questions. The welfare administration and the employees' organizations, however, pressed for the inclusion of a proposal of this sort in the draft of the new Act on Labor Protection. The final decision will rest with the Parliament.

Woman etches glass in a Hungarian leaded-glass factory.

Restructuring Occupational Health in Hungary: A Perspective from Industry

ZSUZSA SCHANDL

"The economy's total accidents ... are about 30,000-34,000 per year. There were 71 accidents at Tungsram in 1992. In comparison with former years, an unbroken decrease in the number of accidents has been observed. The severity of injuries, however, has become worse."

Tungsram RT was one of the largest companies in Hungary, with a very long tradition. It celebrates its 97th anniversary this year. The company has developed a significant international reputation in the course of its operation, especially in the field of light-source manufacturing. Its international operations go back 60 years. Tungsram's industrial activity is focused on two fields: manufacturing of light sources and manufacturing of machines for the light-source industry.

The company has been changed dramatically by its joint venture with General Electric (GE), which began in 1990. Within two years, US $55 million was invested. This investment is more than the total of what was invested in the last 10 years. Annual investment in the environmental-health-safety (EHS) program also has increased more than 10-fold in the same period.

GE manages its plants' activity worldwide so that employees' health and safety on the job is protected from unreasonable risk and the public and the environment are properly protected from adverse effects of the plant operations. Tungsram has had the same objectives since the acquisition.

A comprehensive EHS audit and baseline assessment took place in the second half of 1990. This study serves as the basis for our EHS activity for the next several years.

We attempt to use all available capabilities:

• To take all appropriate measures to protect employees, reduce noise levels, and reduce or eliminate air pollution in the workplace;

- To minimize the number of toxic chemicals and their quantity;
- To decrease the harmful impacts to the lowest possible level;
- To comply comprehensively with community environmental expectations;
- To increase the level of safety techniques and social protection; and
- To increase EHS consciousness among the employees.

ACCIDENT RECORD

Accident data are good examples of the changing situation. The economy's total accidents (under "Industrial" or "Other" categories, not including the Building Industry) are about 30,000-34,000 per year. There were 71 accidents at Tungsram in 1992; one, a road accident, was fatal. In comparison with former years, an unbroken decrease in the number of accidents has been observed. The severity of injuries, however, has become worse. We monitor the frequency and severity of industrial accidents at all 12 factories. From 1991 to 1992, the number of accidents decreased at 10 of the factories, and the severity of accidents (defined as the average lost workdays per accident) increased at eight factories.

"The use of polychlorinated biphenyls (PCBs) and asbestos are not yet prohibited in Hungary. Some companies, among them Tungsram, have decided to eliminate these materials. We are now changing elements containing asbestos."

The accident rates per 1,000 workers in 1992 for the national economy, industry without the building industry, and Tungsram were 14.4, 44.3, and 5.7, respectively.

NOISE REDUCTION

Our noise abatement activity during the last two years has included solution of occupational and environmental issues.

We accomplished a complex noise abatement at the automobile tail lamp manufacturing operation at the Light Source Plant in Jagykanizsa. The job involved noise abatement of the manufacturing machines as well as the acoustic noise abatement of the manufacturing shop. Now, the noise level is 79-80 dBA near the machines.

Remarkable noise reduction took place at the Component Plant in Zalaegerszeg. As a result of these abatement solutions, we achieved 20-22 dBA reduction in working areas while the noise level at night was reduced below 40 dBA in the residential area nearest to the plant.

We accomplished major noise abatement at the glass manufacture, glass component processing, and compressor house at the Light Source Plant in Vao.

At the Central Plant site in Budapest, a complex indoor and outdoor noise abatement program was completed as well. The building of glass factory and energy supply units was isolated during this process. Achieved noise reduction was 10-15 dBA.

AIR POLLUTION ABATEMENT

A major environmental investment took place at the Light Source Plant in Vao by which the air pollution caused by lead oxide has been reduced significantly. The technological reconstruction of the lead glass tank and manufacturing was accomplished in a complex way, including shifting from natural gas heating to electric melting. A closed glass basic material-batch mixing and transportation system also was implemented. With this investment, further reduction of dust and toxic substance emissions was achieved.

Tungsram initiated two large programs: replacement of chlorofluorocarbons (CFCs) with environmentally friendly materials, and substitution of butyl acetate by water-based materials in the coating process of fluorescent lamp manufacturing. A water-based coating process was used on the fluorescent lamp manufacturing machine lines of 3,600 pieces per hour capacity. Since May 1993, methylene chloride and 1,1,1-trichloroethane have not been used in our operations.

A ventilation system with scrubbers was installed at the Light Source Plant at Nagykanizsa. With this installation, hydrogen fluoride air emissions and hydrogen fluoride indoor air contamination have remarkably decreased.

The use of polychlorinated biphenyls (PCBs) and asbestos are not yet prohibited in Hungary. Some companies, among them Tungsram, have decided to eliminate these materials. We are now changing elements containing asbestos. We replaced the PCB-containing transformer and capacitor oil in all of Tungsram plants in 1991 and 1992.

Our overall objectives are:

- 100 percent compliance with Hungarian regulations;
- Efforts to minimize workplace accidents and illnesses caused by different exposures;
- Continued progress toward waste management and minimization of waste discharge;
- Taking over and adopting the best practices in protection of the environment and human health; and
- Good environmental co-existence in every community where we do business.

Restructuring Occupational Health in Hungary: A Trade Union Perspective

LAJOS FÖCZE

I. BASIC TERMS

Occupational health, occupational hygiene, occupational medicine, and industrial hygiene as terms are not clearly defined. Sharp limits do not exist between them. At the same time, terms determined in this country are not exactly identical to those described in the literature written in English.

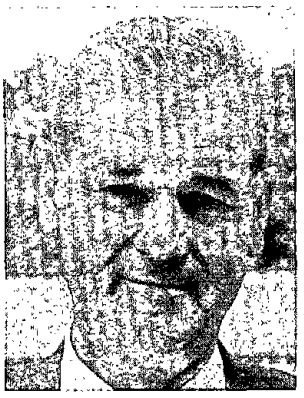
Occupational hygiene is defined by the International Labor Organization (ILO). The ILO *Encyclopedia of Occupational Health and Working Safety* describes it as theoretical and practical knowledge of identification, evaluation, and reduction of those environmental factors and exposures which develop at the workplace. Their origin causes harmful effects to health or general conditions, and their consequences can cause grave trouble for workers or some members of the community.

According to the system-based definition, occupational hygiene is the identification, evaluation, and limitation of the effects caused by materials, or processes, harming health or damaging the human environment.

A more simple, practical definition of it follows: The purpose of occupational hygiene and health is to protect the health of workers at the workplace as specified by the law. Occupational hygiene is used to study the work environment and occupational hazards by measuring, in particular. Occupational health studies workers for harmful effects.

If problems are approached from a prevention point of view, then occupational hygiene completes hygienic prevention and occupational health is responsible for clinical prevention. In Hungary, both occupational hygiene and occupational heath are divided into separate branches.

Both the problems studied and the scientific methods used are different. At the same time, occupational hygiene and health tasks and goals in this country, like all over the world, are the same because they serve to limit and prevent occupational diseases (infections) and accidents, and to protect against them. Methods, functions, organizations, legislation, supervision, inspection, and finance are solved in different ways by different countries. In a given country,



"The occupational health service is required to adjust changes to the structure of the national economy ... factory services should be provided and the proper number of experts must be made available ... Occupational health services must have mainly a preventive character."

like in Hungary, they are affected by occupational characteristics, socio-economic institutions and their changes, demographics, labor policy, and a lot of similar factors.

II. BRIEF HISTORY

The protection of industrial workers and factory employees against accidents is based on legislation passed in 1893. The National Workers Insurance Fund was established in 1907 for health care purposes and to investigate factory accidents. The National Social Security Institute (OTI) was founded in 1927 and the Insurance Institute of Private Sector Employees a bit later.

OTI introduced significant measures and identified lead and mercury poisoning as occupational illnesses to be compensated. Also, a lead filtering station was established and the industrial health department developed from this station. Working conditions for young and women workers have been specified by law. Up to 1945, factory doctors worked as employees of management. Their main task was to provide medical treatment to workers. Insurance cash and institutional health backgrounds also were provided.

After World War II, occupational hygiene and factory health care have been nationalized on the basis of the Soviet example. Social security and working safety were directed and inspected by the National Council of Trade Unions (SZOT).

No doubt, the Act II of 1967, the Labor Code, Law on Health 1972, and Government Regulation on Working Safety 47/1979 (XI.30) are important in the development of occupational hygiene and factory health systems, forming of organizations, and enlarging the service network. In fact, that occupational hygiene and factory health service became a part of the national health service. Its professional directives and tasks up to 1989 had been determined by political forces.

III. PRESENT SITUATION

The main elements of the occupational health concept, worked out by the government, are:

• The occupational health service is required to adjust changes to the structure of the national economy. Depending on the classification of hazards and the number of workers, fac-

tory services should be provided and the proper number of experts must be made available to occupational health centers.

• Occupational health services must have mainly a preventive character.

• Professional standards and competencies should be stimulated to international specifications and recommendations.

• Financing is a critical problem. A possible solution is creating a third insurance branch with a non-profit character and a bonus-malus system. Instead of double financing, exclusive coverage from the employers' side is suggested.

"A primary task is to explore harmful and dangerous factors everywhere and to establish a total and open information system for employees [and] inhabitants."

IV. COMMENTS ON THE TRADE UNION PERSPECTIVE, ROLE, AND PLACE OF UNIONS IN WORKPLACE HEALTH PROTECTION

We are continuously struggling for legislation and guarantees which oblige employers to provide safe conditions, create good working environments, and financing in accordance to the hazards. At the same time, the state's presence is necessary in the preventive tasks of pubic health.

Therefore, the voting of a new Law on Working Safety is required and an additional regulation on occupational health also should be adopted as soon as possible. And we cannot neglect the renewal of the occupational rehabilitation system. In cooperation with our social partners, a primary task is to explore harmful and dangerous factors everywhere and to establish a total and open information system for employees as well as for the inhabitants.

It is no secret that another goal of the unions is that prevention should be approved as the ruling tendency in every field of protection; our national health policy should accept the safeguarding of health projects and their field of application must be the total number of work places.

We support the creation of the third insurance branch and fund as soon as possible. From May 21, 1993, when delegates in self-government on the employee side in social security are already elected, it is hoped that trade unions can have an active role in developing a modern social security system, economic stability, clean profiles, health insurance, pension insurance, and accident insurance.

Trade unions cannot have perspectives other than those that serve both the known and not-recognized interests of the present membership. They must take into consideration the future generations' interests also. Trade unions must contribute to the long-term improvement of workers' living standards.

Reorganization of Occupational Health in Slovenia

METODA DODIC-FIKFAK

Slovenia is a young country in Central Europe with a population of 2 million (90 percent of whom are indigenous peoples), an area of 20,000 square kilometers, and Gross National Product of about U.S. $9,000 per capita. In 1991, the country had some 900,000 employed persons, which decreased the following year by about 140,000.

Women comprise 45 percent of the employed population. Basic data on the health status of workers over several years show that their absence from work was linked to socio-economic movements in Slovenia. These data, deriving from the socialistic history, call attention to the fact that each socio-economic crisis caused a strong decline in absenteeism. The present situation though shows a different response by workers. During the last 10 years, the highest percentage of worker absenteeism was in 1990. After that, the percentage decreased, so that in 1992 it was even lower than in 1991. (Figure 1) Important factors include that many workers are unemployed, the most capable young workers are kept employed, and the degree of retirement due to disability reached a peak in the last 10 years.

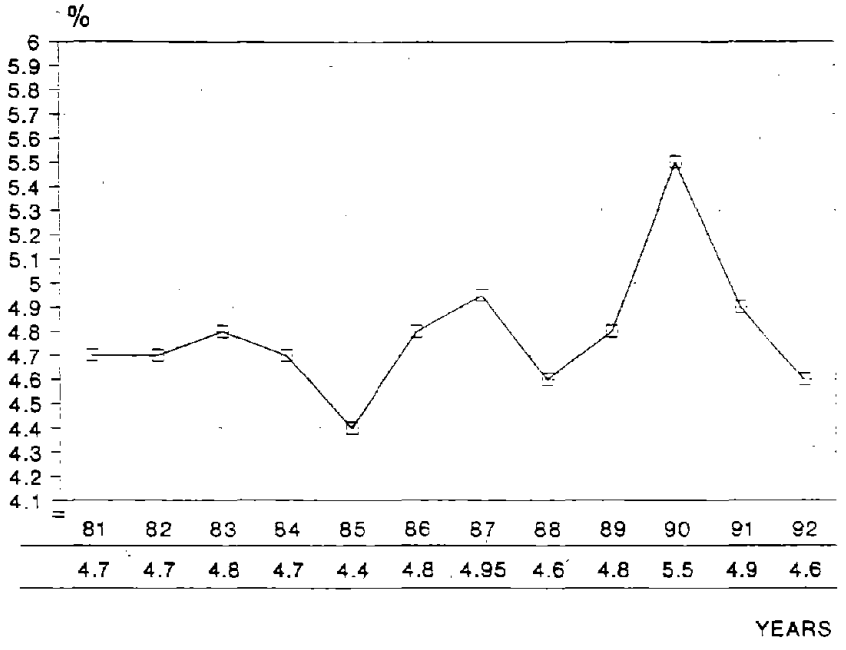


FIGURE 1. Sick absenteeism in Slovenia from 1981 - 1992.

Leading reasons for absenteeism are musculoskeletal diseases, followed by injuries and respiratory tract disorders. Workers' disability, in all its categories, also puts diseases of muscle and bone tissue at the top, then cardiovascular diseases, and, in third place, mental disorders.

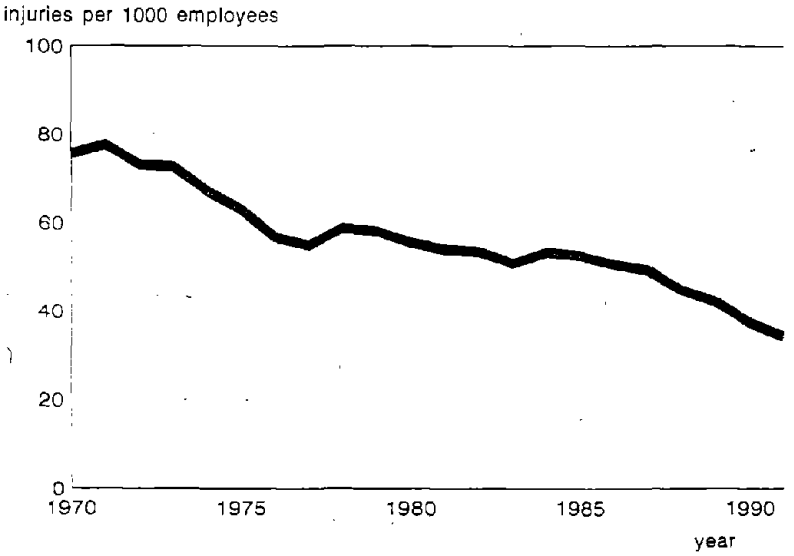


FIGURE 2. Occupational injuries per 1,000 employees, Slovenia, 1970 - 1991.

We succeeded in decreasing work-related injuries about 15 percent per year, mostly due to modern technology, as well as the presence of safety engineers in each factory. (Figures 2 and 3) Also, there has been a slow increase in workers' awareness. The move of safety engineers to private practice and their concern for their own businesses, as well as insufficient awareness by managers of the importance of safety at work, encourage a prediction of an increasing incidence in workplace injuries.

We have no precise data on work-related diseases because we inherited Yugoslavia's list of work-related diseases and verification methods have not been established.

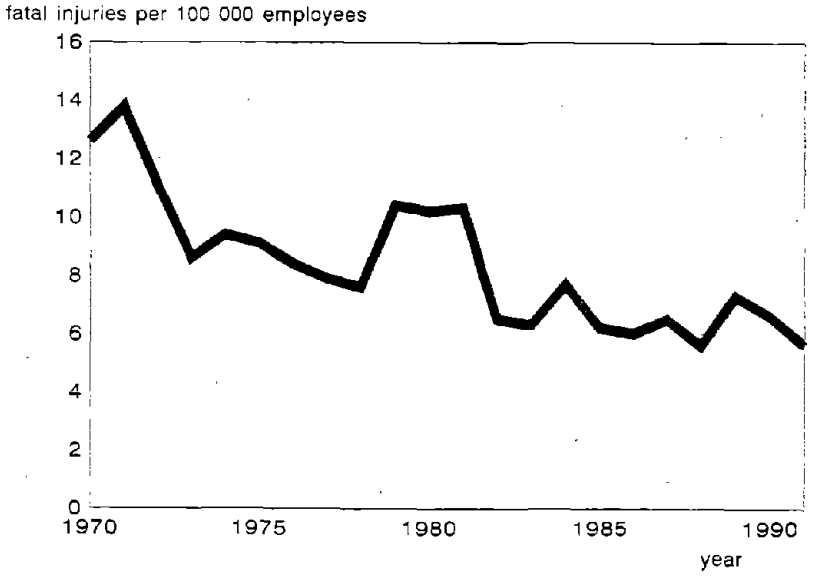


FIGURE 3. Fatal occupational injuries per 100,000 employees, Slovenia, 1970 - 1991.

Slovenian medical circles are treating occupational medicine as socialistic medicine and thus completely unimportant. So, it has no support either among the medical society or in the Ministry of Health. If the crisis of occupational medicine continues, the current brain drain in family practice will only increase. We have one specialist in general or family practice for every 3,000 - 4,000 employees. Sooner or later, they should be replaced. In 1991, the Ministry of Health began to plan the reorganization of occupational health in Slovenia.

PROPOSAL TO MODIFY OCCUPATIONAL MEDICINE

In occupational medicine, we first have to rearrange the routine health care of workers. In spite of an increasing number of ambulatory patients in factories and dispensaries of occupational medicine, as well as cadres with special education, we are losing the preventive orientation in Slovenia.

Preventive medical check-ups were too frequent. Slovenian occupational medicine specialists did not know the workplaces well enough and thus could not adequately respond about either the employees' working ability or the workplaces' ergonomic therapy. Thus, I have presented general epidemiological data on workers. Many diseases, especially those of the locomotive system, could be prevented or minimized with timely ergonomic therapy at the workplace.

"Leading the reasons for absenteeism are musculoskeletal diseases, followed by injuries and respiratory tract disorders. Workers' disability, in all its categories, also puts diseases of muscle and bone tissue at the top, then cardiovascular diseases, and, in third place, mental disorders."

Preventive protection of the health of employees includes many other activities besides preventive medical check-ups. It includes, above all, the study of workplaces, abolition of noxious agents, qualification of handicapped workers, and the motivation of employees to embrace a healthy lifestyle. This enables preventive activities to be team-oriented and interdisciplinary, involving, in addition to the specialist in occupational health, also a safety engineer, psychologist, ergonomist, industrial hygienist, and industrial manager.

Another reason for the critical situation in occupational medicine is the previous emphasis on treatment for sick workers. This activity fits best into general practice and into the newly organizing private practices.

Analysis of the workplace, however, does fit into the new health care plan for workers. It gives us information on the burden, taints, and health risks at work — what are mostly considered ecological measurements at the workplace that are mainly of no representative value (time of measurement, duration, frequency of exposition). Nevertheless, ecological data represent only part of the analysis. Rational procedure calls for measurement of those elements estimated as risky, to follow the interdisciplinary estimation of contaminants and exposures at work. For this kind of work, we already have an adequate test manual. The team that aims to analyze the workplace must get additional education. Estimated analysis should be followed by guided analysis — measurement that verifies or elaborates the earlier one. A resume of the appraisal and measurement analysis will distinguish between the demands of work at that site and the protocol for preventive medical check-ups as well as important ergonomic information. The involvement of physicians and psychologists in the workplace analysis gives a special value to Slovenian occupational health care, compared with other highly developed industrial countries where doctors mostly avoid this kind of work.

Systematic and guided preventive medical check-ups may differ in their range and terms. An analysis of preventive medical check-ups already performed shows they were too frequent, too general and unfocused, and not based on knowledge about the specific workplace. Analysis shows that on average each worker has been checked every three years, which is too often for most workplaces. Generally, a systematic check-up should be conducted before employment is started, then every five years until the age of 45, and every three years thereafter.

The frequency of guided or "leveled" medical check-ups should depend on risk at a particular workplace. Leveled check-ups are more frequent and less extensive and focused to a specific body organ. For this kind of check-up, we need a numeric result on noxiousness at work that shows not only the average but also the top or maximal values of noxiousness. Systematic check-ups require, at least, sample analysis; we only have lists of workplaces from the safety engineers where they are performed based on the engineer's individual judgment. These analyses are mostly not useful because they are deficient in addressing physiological and psychological burdens.

That is why we do not have a real picture of the number and kinds of preventive medical check-ups that are necessary. The focus of preventive check-ups should be the consequence of the burdens, taints, and health risks at the workplace. We anticipate that the Institute of Occupational Medicine and Safety could implement such analysis for sample workplaces within three years and standardize the terms of preventive medical check-ups.

Psychological activity, carried out within the health care of workers, is primarily behavioral and neglects other aspects of psychological activity, especially individual psycho-diagnostic and therapeutic conversation. Psychologists who are involved in the health care of workers should get specific education concerning the applicative occupational psychology.

Ergonomics has a place in education in certain schools in Slovenia, but has not yet reached some personnel, including Slovenian occupational medicine specialists and industrial engineers. It still remains a matter of personal enthusiasm. Changing the structure of the economy offers a unique opportunity for all kinds of change, but lack of investment in ergonomics may lead to its neglect. For instance, a young manager who was kindly warned that his employees at computer screens would soon become disabled unless they received adequate ergonomic equipment and tools, replied, "You know, what counts for me, are the results here and now. What will happen within a few years — it's not my concern." The anecdote suggests why ergonomics without legal constraint will not come into practice in our country. The inspector of work

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who would act in the case of neglect of ergonomic or ecological measures should play an important role.

Professional diseases, work-related diseases, injuries at work, and health damage causing disability as well as psychosocial pathology are all detected by epidemiological methods. They represent a signal which makes an enterprise implement an evaluation analysis of the workplace, especially ergonomic analysis. Enterprises who know that a healthy and motivated worker counts as a real treasure will systematically invest in this kind of analysis from which ergonomic proposals and measures are derived. The health service controls their effect. The labor inspection is involved at several points; its function is, above all, to control the implementation of ergonomic measures.

The importance of doctor-worker (patient) conversation should not be neglected. A physician devotes too little time to diagnostic and therapeutic conversations which are displaced by expensive examinations and prescriptions. The waiting rooms of the specialists are always full. The data on absenteeism, which kept on growing after 1970, is very interesting. A doctor in Germany who monitors absenteeism said that in Maennesmann 45 percent of patients decided to break sick leave and go back to work.

The business enterprise should have a designated physician or social worker to talk to its employees about reasons for absenteeism, especially absences due to psychophysical diseases. A doctor should discuss difficulties at work with the individual. Conversation is an important part of the psychosocial climate of the enterprise as well as an important factor of successful work.

The introduction of disabled persons to the workplace represents an important function of occupational medicine. Specific analysis of the workplace, specific ergonomic adaptation of certain workplaces for designated disabled persons can be implemented only by the local health expert with particular knowledge.

Verification of work-related diseases is one of the most difficult tasks of occupational medicine. The list of work-related diseases does not concern only this branch of the profession, but unfortunately also involves political decisions. In Slovenia, work-related diseases should be verified by capable occupational medicine specialists, in consultation with other experts, in the local center for the health care of workers.

Labor inspection is of great importance. We suggest that the labor inspector invites authorized physicians from the local center for the health care of the workers to examine the enterprise or the workplace. Labor inspectors should always invite the doctor to cooperate when such collaboration would be vitally important in evaluating health risks. Labor inspectors also should issue an order commanding which work should be done by experts from the center for occupational health and which by the medical staff from the dispensary.

"A young manager who was kindly warned that his employees at computer screens would soon become disabled unless they received adequate ergonomic equipment and tools, replied, 'You know, what counts for me, are the results here and now. What will happen within a few years — it's not my concern.' The anecdote suggests why ergonomics without legal constraint will not come into practice in our country."

PROPOSALS FOR ORGANIZING OCCUPATIONAL HEALTH

Here, now, are some proposals for the organization of occupational health in Slovenia.

The Ministries of Health and Labor should form an Institute of Occupational Health and Safety which should act as a top research and pedagogic institution. Two linked institutes, however, located in the same building would be tolerated. Their connection to the university should be via the chair of occupational medicine at the Medical University. The institutes should have regional centers for occupational health and safety that would be established based on both geography and topics. They would have exclusively preventive roles and would be responsible for doctrine development together with the institute. Thus, the present regional centers, already developed in some places from the regional thematic centers, should keep their role. The thematic centers of the Ministry for Internal Affairs and the Ministry of Defense also fit in this network of regional centers.

Regional thematic centers would act as extensions of the institute that should have well-developed programs in ergonomic physiology, pathology of work, professional traumatism, and the psychology of work. Also, part-time professors from the regional thematic centers should be involved in their work.

The basic organizing units of occupational medicine should be the dispensaries for the health care of workers which already exist. They have no hierarchic link with the Institute of Occupational Health and Safety; professional doctrine would be the only connection between them. They can be founded by the enterprises or communities or be privately run. Fundamentally, they would offer half preventive and half curative medicine. In Slovenia, the conflict between general family practice, which is becoming important in family medical care, and occupational medicine is strong. This is because occupational medicine is not strongly defined.

The division between general and occupational medicine should be dynamic rather than rigid. In small places, the family doctor should also play the role of occupational physician and

treat workers with a low-level professional health risk, implement certain surveys of workplaces and preventive medical check-ups. But he or she must obtain additional education within the postgraduate occupational medicine course and should renew knowledge regularly. More demanding tasks should be performed by the regional centers for occupational health. In dispensaries, a physician with a longer postgraduate course in occupational medicine should be employed.

"Preventive protection ... includes, above all, the study of workplaces, abolition of noxious agents, qualification of handicapped workers, and the motivation of employees to embrace a healthy lifestyle."

Dispensaries of occupational medicine should once a year make an epidemiological analysis of negative health indicators, especially occupational diseases, trauma, disability, and reasons for absenteeism because of illnesses, injuries, home care, and so forth, for the enterprise. To follow this kind of evidence in Slovenia, we have pretty useful compatible computer programs which should facilitate analysis to develop reasonable proposals to improve the situation. The most difficult task is to establish connections between occupational medicine and occupational safety respectively between the Ministry of Health and the Ministry of Labor. The parliamentary committee for occupational health care and technical safety should represent the first link of this sort. Should the factory or the community committee be a bridge between health and the economic criteria of work that would overcome the gap between the Institute of Occupational Medicine and Occupational Safety by building the professional bridge? The recent situation shows it is possible to create the parliamentary committee for occupational medicine and occupational safety as well as move toward the foundation of a single Institute of Occupational Health and Safety.

Scale is used to weigh lead compounds to make crystal glass.

Model of Occupational Health Services in Poland

JERZY KOPIAS AND LECH DAWYDZIK

The present-day legal regulations on workers' health care in Poland are far from satisfactory. Under conditions of the growing free market economy, the previously operated organizational system of health care for workers has become out-of-date and needs immediate modification to adjust it to the new economic situation. Evidently, the trends and progress of policy have been considerably influenced by the more general activities to associate Poland with the European Community (EC) and hence to develop an occupational health care system which takes into consideration the principles of the Charter of Social Rights of the EC as well as the International Labor Organization (ILO) Conventions.

"In May 1991, under the initiative of the Institute of Occupational Medicine in Lodz and the Polish Society of Occupational Medicine, the bill on the Labor Code was amended so that it would regulate the responsibilities of every employer, including the private ones, with respect to providing health care for workers and participating in the respective costs."

The organization of health care for workers in Poland is based on the Labor Code Act. The Act was passed by Parliament in 1974 and was, in principle, related to state-owned industrial plants (which were at that time practically the sole employer). Work on modification of occupational health services has been carried out for the last three years, although preparatory activities started much earlier.

LABOR CODE BILL AMENDED

In May 1991, under the initiative of the Institute of Occupational Medicine in Lodz and the Polish Society of Occupational Medicine, the Labor Code bill was amended to regulate the responsibilities of every employer, including the private ones, concerning providing health care for workers and participating in the respective costs. Amendments to the regulations concerned occupational health and hygiene and the obligations of the employer to ensure health care for employees. The regulations now also involve private businesses, whose number is constantly increasing. These activities have overrun the more general ones related to reforming the national health services in Poland.

According to the regulations now in force, the basic responsibility for ensuring safe and hygienic conditions at work remains with the employer. This means that the employer is obliged to observe the principles of work safety and hygiene standards. The principles and standards are set forth in relevant publications such as the Polish Standards and in the form of directives (for example, Maximal Admitted Concentration/Maximal Admitted Intensity Values — MAC/MAI) issued by the Minister of Labor and Social Policy in cooperation with the Minister of Health and Social Welfare. Since a thorough revision of Section X of the Labor Code (which regulates work safety and hygiene and sets forth the principles of worker health protection) is intended, it is reasonable to suppose that the executory provisions will be modified as well.

The existing legal status assumes that the processes of work should be organized so that corresponding standards are not violated. This should be enhanced by establishing special work safety services by, or on behalf of, the employer (depending on plant type) and monitoring of harmful or noxious agents at workplaces. Depending on plant size, the employer can set up its own laboratory for monitoring the occupational environment or contract the monitoring to an outside authorized laboratory. The employer also is obliged to employ only such workers as are subject to prophylactic examinations and have been found to be capable of being employed under the conditions of a specified work environment. The costs of such prophylactic examinations should be borne by the employer.

TWO SUPERVISORY INSTITUTIONS

The proper execution of those duties is supervised mainly by two institutions: the State Sanitary Inspection and the State Labor Inspection. Two separate acts passed by Parliament constitute the legal ground for the scope of the activities and the inner structures of both inspections. State Labor Inspection is subordinated directly to the Parliament and its primary tasks include ensuring that labor law and work safety regulations are properly observed. State Sanitary Inspection, on the other hand, is subjected directly to the Minister of Health and Social Welfare. Supervision of work safety and hygiene constitutes only a fragment of the State Sanitary Inspection activities. Presently, that Inspection is the sole inspection organization provided with its own laboratories and capable of assessing the sanitary conditions of work. It should be noted, however, that there also are other institutions for controlling work safety in various sectors of Polish industry, for example, the Chief Mining Inspection.

Health care for workers has been placed within the general health care system, which is supervised by the Minister of Health and Social Welfare. According to the new Act on health care facilities passed in late 1991, the possibility emerged of creating different forms of Occupational Health and Safety (OHS) units, but the lack of proper regulations has meant that the health care sector as a whole has been almost solely state-governed. The existing industrial health services units could have been transformed to become independent of the industrial plants to which they had been affiliated and operated independently but with professional support from the Minister of Health and Social Welfare.

"It should be stressed, however, that the present-day legal regulations on workers' health care are far from satisfactory. The three-year period of transforming the centrally controlled economy, characteristic of the communist system, into a free-market economy has been too short ... "

Employers are allowed to establish their own OHS units, in which, on condition they assure prophylactic care, they could provide a broader spectrum of services, including curative, as they have sufficient financial possibilities. Those employers who have not organized their own OHS units would be obliged to buy prophylactic services from authorized physicians. It has been assumed that only those physicians who have completed specialization in occupational medicine, work hygiene, or the like, are authorized to conduct prophylactic examinations.

It should be stressed, however, that the present-day legal regulations on workers' health care are far from satisfactory. The three-year period of transforming the centrally controlled economy, characteristic of the communist system, into a free-market economy has been too short to bring the expected results.

A SEPARATE PROBLEM

The ratification of international conventions concerning workers' health care in connection with the anticipated membership of Poland in the EC poses a separate problem. The obligatory EC instructions in that matter are too general, and there are no detailed recommendations or guidelines. The question is whether the existing discrepancies, resulting from systematic differences, should be maintained or whether there is a need for developing a uniform interpretation of the law. This affects several aspects of occupational health in Poland. Further endeavors should focus on the step-by-step extension of preventive health care to cover all groups of employees, including agricultural workers, in the future.

In conclusion, the following elements of restructuring should be stressed as the most important:

1. Revision of the Labor Code Act, including:

• The obligation for every employer to have the results of the examination of harmful agents at workplaces and to keep workers informed about workplace hazards and their potential effects;

• A principle of employing only those workers who are able to submit valid work capability certificates for a given workplace, issued after a periodic medical check-up; and

• A principle that it is the employer's responsibility to cover the cost of the necessary determinations about harmful agents in the work environment as well as the costs of periodic examinations of workers.

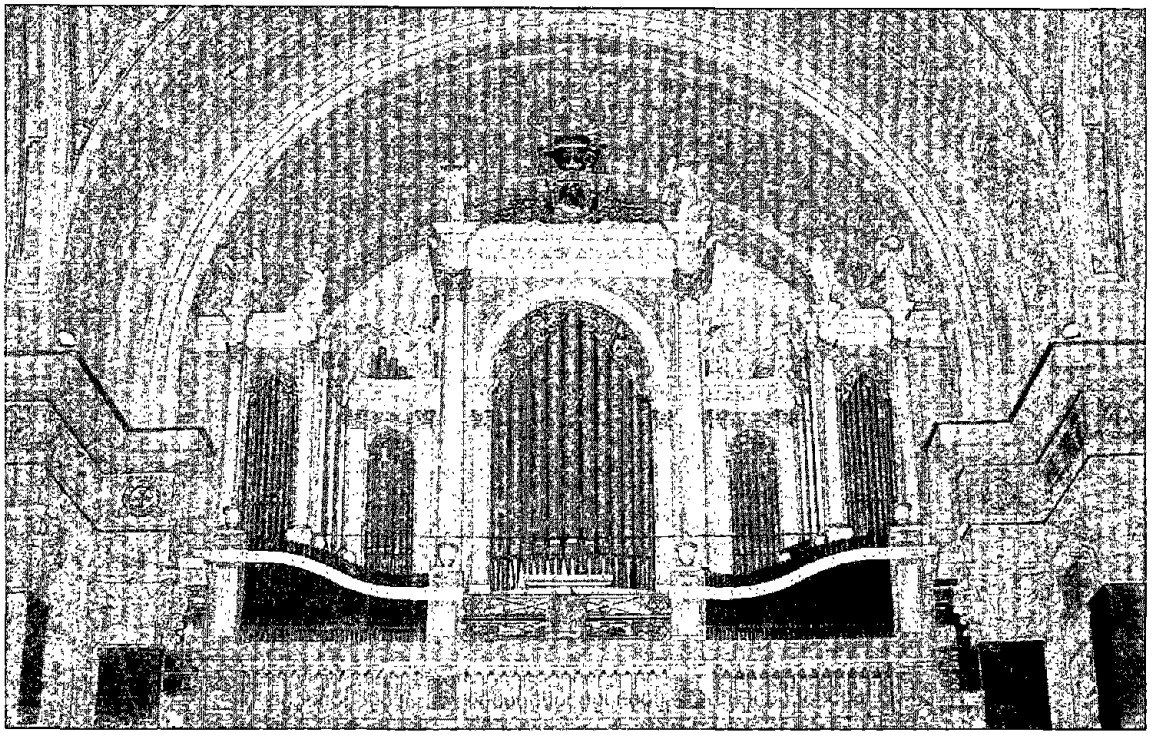
2. The Act on Health Care Facilities changing the principles of the establishment of health care units. According to the Act, OHS could be both public and non-public. Thus, a health services market would become possible.

3. The principle that only authorized physicians may perform prophylactic examinations, which will bring improvement in the quality of the examinations.

4. The OHS restructuring process concerns not only organizational forms but also such other aspects as the following:

• The development of new scope in prophylactic medical examinations and teaching procedures and programs for occupational health personnel, including specialization in collaboration with the European Association of Schools of Occupational Medicine (EASOM)

• The creation of health promotion programs in the workplace,which have become a very important element of the OHS reform process in Poland.



Organ at a church in Eger.

A Model of Occupational Health Services in Bulgaria

FINA PETROVA KALOYANOVA-SIMEONOVA

"The new plans are to create from these inspections health institutions which will correspond to the U.S. Centers for Disease Control so they will be able to make relational health statements, not just study process, and we will get at the policy."

The occupational health services in Bulgaria are the same now as they have been for about 30 years because we are only now discussing a prescription for change.

We are talking mostly about occupational health services whose origin is in occupational medicine. The program is under the Ministry of Public Health and only occupational safety is under the Ministry of Labor. I will not speak about safety control.

We seem to be patient in exercising our responsibility in the National Center for Hygiene, Ecology, and Nutrition and also in the Departments of Hygiene, Ecology, and Occupational Diseases in the four medical faculties in the country. The main role is the responsibility primarily of the specialty technological inspectorates.

SWEEPING INSPECTIONS

In this location, we have 28 centers of industrial hygiene and epidemiological inspection. Inspections concern all aspects, not only occupational health, but hygiene, school hygiene, food, centers of education of the population, information about employment, industrial sampling, following the example of the medical service which states that the local approach simply is not valid. Approximately 6,000 young staff members work in this area. There are 6.9 staff members for every 10,000 inhabitants.

Now, there is in this new hygiene department new technologies with surprising ability. The technology level often aids one in 10 district technological inspections, which help also in understanding sickness.

In the field of industrial ecology, the principal functions include the introduction of new

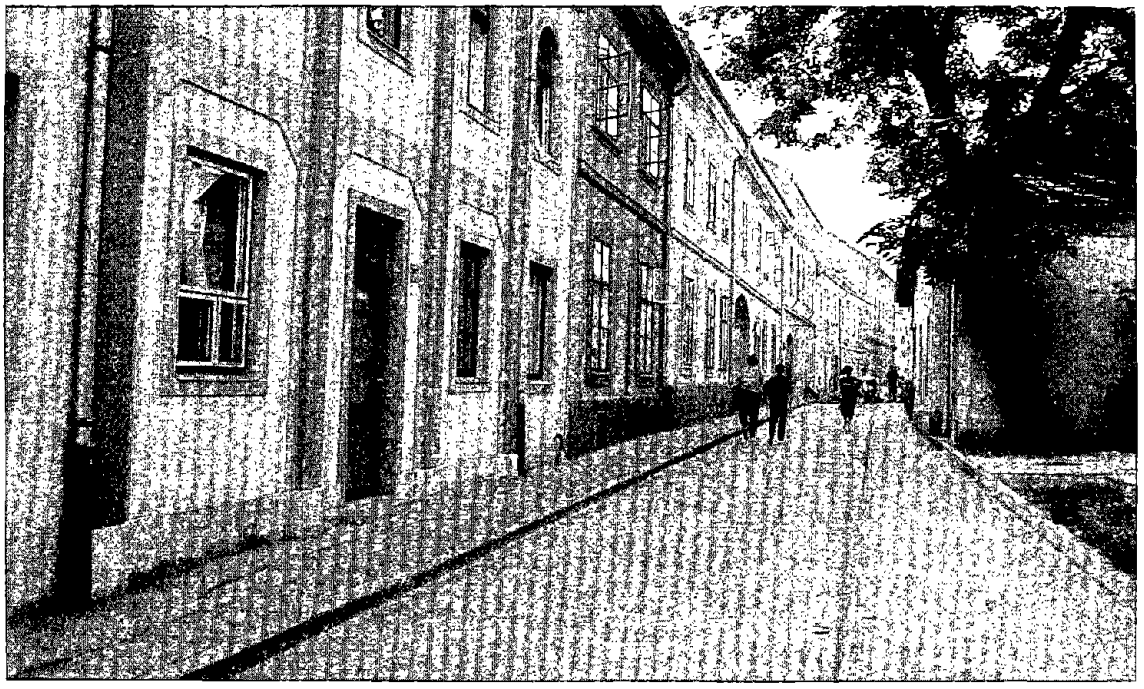
process systems. They are also responsible for the registration of new substances and their classification for public use, such as new kinds of feed, cosmetics, and household products.

The second task is developing certain results in the application of occupational health and exposure assessment by potentially lumping them together with exposures, information about exposures from the occupational health office, and the relation of control and other measures in their different aspects. Regular sanitary control includes identifying occupational hazards and assessing exposure, evaluating risk, and recommending controls.

HEALTH EVENTS REFLECT CONDITIONS

Many aspects of occupational medicine mentioned by Professor [György] Ungváry are well respected. We have factory health services, workers' hospitals, and the general health service. They diagnose and treat work-related disease, provide expertise on incapacity to work, conduct preliminary health examinations and periodic preventive exams, and do health surveillance on morbidity and in the area of biological monitoring, which is a collaborative effort with health services. But health events in Bulgaria reflect the unhealthy conditions in all of these workplaces.

Occupational health services and health promotion are now underway to reduce multiple inspections. We are targeting smoking, which is number one; use of sodium chloride, animal fats, and alcohol; physical immobility; and so forth. The new plans are to create from these inspections health institutions which will correspond to the U.S. Centers for Disease Control so they will be able to make health policy.



A quiet street in Eger.

Occupational Health in the Czech Republic: Old and New Solutions

DANIELA PELCLOVÁ, CHARLES WEINSTEIN, JANA VEJLUPKOVA, AND PAVEL URBAN

The re-emergence of Czechslovakia as a democratic nation during the "velvet revolution" of 1989 signaled the end of 41 years of Communist rule and generated great hope for the future of the Czech and Slovak people. Unfortunately, this historic event coincided with the recession in the West and has brought some of the frustrating realities of "making it" under democracy and a developing free-market economy. The "velvet" divorce with Slovakia in January 1993 "freed" the Czech Republic and its 10.5 million people from their Slovak neighbors to pursue a more

Figure 1. At Risk Workers in the Czech Republic 1992

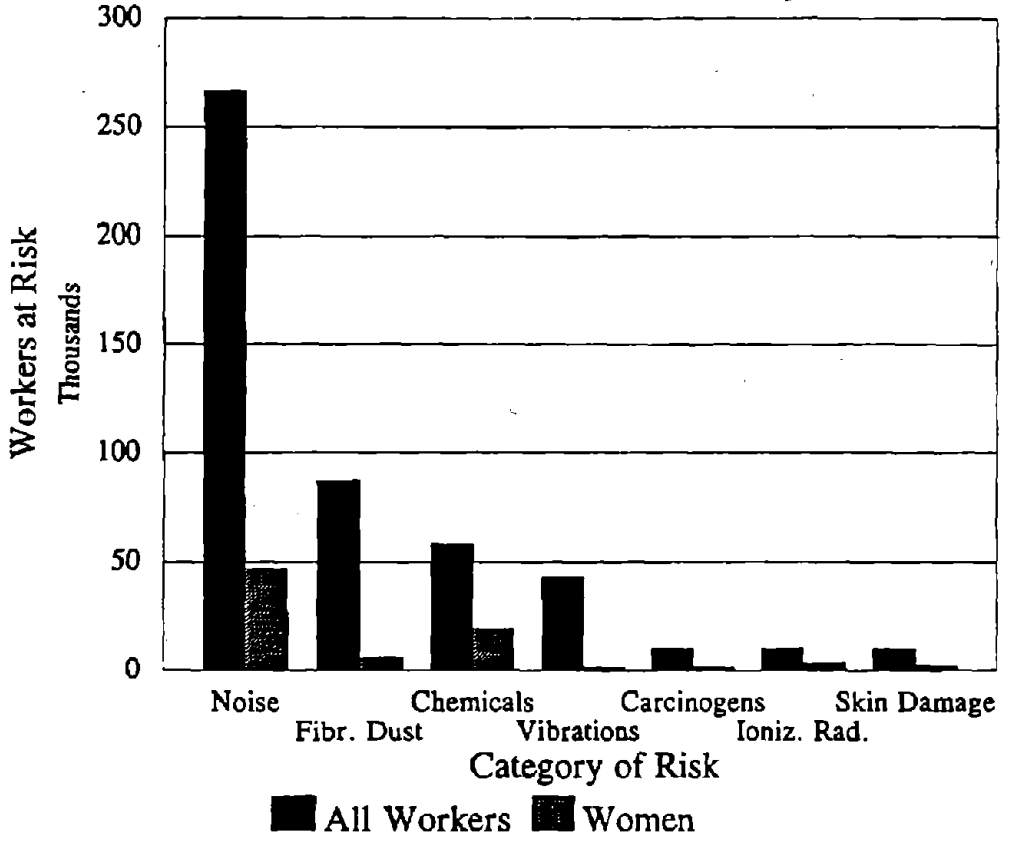


FIGURE 1. At-risk workers in the Czech Republic, 1992.

Western orientation, but new solutions are needed to overcome the legacy of 41 years of Communist rule.

This paper describes the historical context of occupational health in the Czech Republic, summarizes its current status, and discusses some of the solutions for improving occupational health which have been implemented or proposed.

HISTORICAL PERSPECTIVE

The system of occupational health in the Czech Republic has historically been highly influenced by political and economic changes. Under a democratic government, in the period from 1932 to 1948 prior to Communist control, Dr. Jaroslav Teisinger established the first Department for Occupational Medicine at Charles University, the oldest University in Central Europe (founded in 1348). Occupational health was a quickly developing branch of medicine, and, having Dr. Teisinger's strong personality at the head, contributed a great deal to the progress in occupational health in Czechoslovakia and abroad. His influence extended into the period of Communist rule when, in 1953, this department became a clinic, and in 1962 a Poison Information Center was added to it. Dr. Teisinger was successful at institutionalizing the field of occupational medicine in the Czech Republic during this period of democracy and received several international awards for his work in occupational health (including an award in 1972 by the American Association of Industrial Hygienists for progress in occupational health). The ability to train professionals in the field of occupational health was an important legacy of this period.

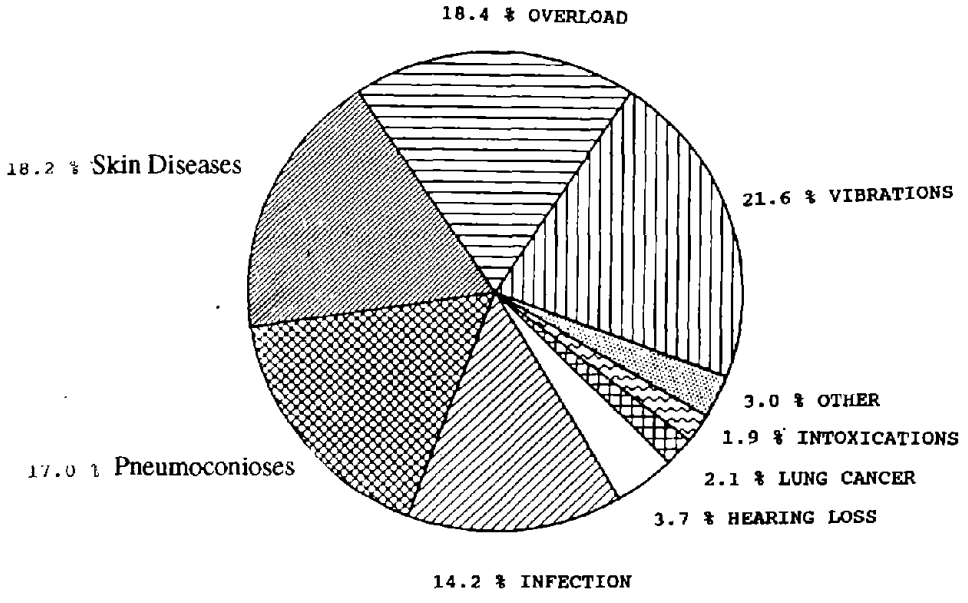


FIGURE 2. Occupational diseases in the Czech Republic, 1992.

From 1948 to 1989, the Communist regime set high principles and standards for occupational and environmental health while never living up to them. It claimed to promote a healthy lifestyle, disease and injury prevention, a healthy environment, and free and universal access to

health care. (1) None of this came true. Outdated factories and their workers were pushed to their limits in order to compete with the West. The resulting life expectancy is currently 5-7 years shorter than in Western countries, with high rates of circulatory disease and cancer. Left behind was an energy-intensive and obsolete industrial infrastructure designed for short-term economic gain and which was and is now incapable of meeting those principles and standards of occupational and environmental health.

Simultaneously, it demonstrated utter disregard for the environmental quality to which the general population was exposed. Approximately 25 percent of the population lived in areas described as "extremely disturbed environments" by the Czech government. (2) These regions of the country have soils contaminated with heavy metals and persistent pesticides and water resources tainted with organic solvents and high levels of nitrate fertilizer. A number of short-term studies have attributed significant health problems to environmental pollution, especially in the case of air pollution and both chronic and acute respiratory disease. There is particular concern for the higher rates of respiratory disease in children living in northwest and central Bohemia and north Moravia. (3) The risk to workers of exposure to hazardous wastes is extended to the general population through the disproportionately large number of uncontrolled and unprioritized hazardous waste sites whose human and ecological health risks have not been evaluated.

During the Communist era, occupational health became a paradox. Medical care was free, and Czechoslovakia had one of the highest ratios of doctors and nurses to general population in the world (36.6 and 68.2 per 10,000 respectively). The fusing of small, private industrial and agricultural operations into large, state-owned enterprises allowed almost complete registration of workplace hazards and better control by the Hygienic Service. Even the maximal allowable concentrations for workplace exposure to some noxious agents were more stringent than western standards. Despite this, however, occupational health did not improve nor did it live up to the "official" high principles. The government was not able to cover all the expenses, and there was a shortage of drugs, equipment, social services, rehabilitation, and other necessary services which created barriers to accessing health care. Without private health care, and with medical staff at state-run hospitals on low, fixed salaries, there was no emphasis on quality, and the main criteria in hospitals was the "percentage of full beds."

A cycle of strong negative incentives operated against the improvement of workplace conditions. Official identification of increased workplace hazards resulted in increased pay for the workers. This, combined with the fact that the state, not the enterprise, bore the cost of health care, encouraged both workers and managers to sabotage efforts to improve workplace conditions in order to maintain the substantial monetary benefits. The stringent workplace standards (in some cases more stringent than in the West) were practically impossible to meet in outmoded, hazardous workplace settings where, for political and/or economic reasons, production could not be stopped. It was a system of health care that professed quality as its goal but promoted conflicts of interest for the industrial hygienists, physicians, workers, trade unions, and enterprises, and abuses of occupational health and worker safety.

CURRENT STATUS

The "velvet revolution" in 1989 enabled the inevitable reorganization of the health care system, but changes are coming slowly and with some confusion. Operation of health care services having more beds, doctors, and nurses than most Western countries while using less financial resources is painful. Despite a difficult transition, the new system will be based on the following:

- Prevention and health promotion;
- Universal access to standard care;
- Decentralized policy-making and service delivery;
- Break-up of state monopolies;
- Increased autonomy of health care providers;
- Emphasis on ambulatory care;
- Compulsory health insurance;
- Community participation;
- Greater freedom of choice for patients;
- Public/private partnership to provide "above-standard" care no longer offered through the public sector.

TABLE 1. Occupational Intoxications, 1987 - 1992

	1987	1988	1989	1990	1991	1992
N	144	143	88	115	77	64

Intoxications in 1992

27	Lead
13	Carbon Monoxide
7	Toluene, Xylene
4	Organophosphorus Comp.
2	Chlorine
11	Others

Total 1954	270
Total 1955	155
Total 1956	584
	243 Lead
	113 Carbon Disulfide
	78 Trichloreth., CCl_4
	35 Carbon Monoxide
	35 Benzene + Toluene

In January 1993, the government's General Health Insurance Office began its operation, and by that time, private health insurance companies also had been created. Physicians now bill for services based on an officially published schedule; however, the reimbursement is often insufficient to cover the actual costs of health care and will certainly remain limited during the current period of falling living standards. Only reconstruction and reduction of some departments within the various branches of the health care system and reduction of the number of employees can save money in the current environment.

The pressure for cost-containment has put great pressure on hospital departments of occupational medicine. Because not all occupational health services will be paid by the insurance and the reimbursement is inadequate, there is pressure for consolidation and elimination of in-patient clinics, reduction of staff, and the creation of more out-patient services. In one sense, this

is an appropriate change given the shift that has occurred in the character of occupational diseases from the more severe industrial intoxications and pneumoconioses accompanied by respiratory and cardiac failure to milder, more chronic diseases of the musculoskeletal system, lungs, and liver. There is a new emphasis on preventive interventions at the earlier stages of these diseases.

It is expected that there will be significant reduction and reconstruction of the other branch of occupational medicine — the industrial hygienists in the regional and district hygienic stations. This branch is not included in the sphere of the Health Insurance System but is still supported directly by the public budget. With the break-up of the state-run monopoly of health care services, some privatization has occurred with the formation of small out-patient departments, however, the details of how privatization will work still need to be clarified. Legislation concerning the responsibilities of business and industry, hygienists, workers, and occupational health specialists is now being created.

" ... occupational health did not improve nor did it live up to the 'official' high principles. The government was not able to cover all the expenses, and there was a shortage of drugs, equipment, social services, rehabilitation, and other necessary services which created barriers to accessing health care ... there was no emphasis on quality ... "

A review of occupational health in 1992 will help to illustrate the current situation. Of a total of 5 million workers, about 8.1 percent were subject to hazardous occupational exposures -- see Figure 1, with resulting occupational diseases illustrated in Table 1. Noise is the main physical hazard for almost two-thirds of the at-risk work force; however, less than 4 percent of reported occupational diseases involved hearing loss. Although 10 percent of the at-risk work force is exposed to excessive vibration, they cause more than 20 percent of occupational diseases, especially blood vessel and nerve damage and, to a lesser extent, bone, muscle, and joint injuries or combinations of these mostly occurring in the mining industry. Chronic musculo-skeletal injuries due to overload of upper extremities are an equally hazardous source of chronic diseases, especially carpal tunnel syndrome.

Just over one-fifth of the at-risk work force is exposed to fibrogenic dust (especially free silica or coal dust). Although the incidence of silicosis in the 10 years prior to 1989 caused concern among some researchers (5), preventive measures implemented since that time appear to be having a positive effect. These include prohibition of work in Northern Moravian workplaces where the highest acceptable concentration of SiO_2 is exceeded and determination of the highest allowable number of shifts based on cumulative exposure at all previous workplaces.

Exposure to hazardous chemicals includes noxious solvents, carcinogens, and substances causing skin damage. Organic solvents and organophosphorus pesticides are a particular threat to about one-seventh of the at-risk work force; however, the number of occupational intoxications

is low (Table 1). Occupational skin diseases comprised a significant proportion of reported occupational health problems (more than 18 percent) while only posing a risk to 2.5 percent of the work force.

There is obviously room for improvement in the agricultural, health service, coal mining, and machinery industries in which such problems occur. Less than 2 percent of occupational diseases resulted from intoxications (64 cases), primarily from exposure to lead (27 cases).

Although the "at-risk" work force is predominantly male, nearly one-third of cases of occupational disease were diagnosed in women. The risk appears greatest as a result of exposure to infectious agents and some chemicals, especially in the health-care sector. The potential for teratogenic effects has been suggested (6) but not fully explored.

The number of cases of occupational disease continues at about the same level as the previous 10 years (Figures 2 and 3). There were 3,406 cases in 1992 (7), compared to an average of about 4,000 cases or 8 per 10,000 workers over the previous period. It is interesting to note that this number more than doubled in 1990 and 1991 (to 11,170 and 8,680 respectively) as a result of the "reclassification" of less expressed forms of occupational injuries, which previously had the status of "being endangered with an occupational disease," to become upgraded to fully compensated "occupational diseases." These reclassifications included mild forms of pneumoconioses, chronic musculoskeletal injuries, and hearing loss. This was a result of the political pressure after the "velvet revolution" exerted by trade unions, especially miners, on the new administration. Reclassification was eliminated by the Ministry of Health for the 1992 statistical year because the reclassification did not conform to Western standards and the political pressure for it diminished.

Complicating the occupational health problems is an unhealthy and stresssful lifestyle and poor environmental quality. There is typically a lack of physical activity, and one-quarter of Czechs are obese with the general diet high in animal fat while low in fresh vegetables and fruits. Alcohol consumption is higher than in most Western countries, and 45 percent of the adult population smoke leading to an estimated 23,000 deaths each year. Poor air quality in industrial areas with high population density, such as Northern Bohemia and Prague, has contributed to higher mortality rates since 1960. However, it is difficult at this time to isolate this contribution from that made by the social environment. The high divorce rate and often outdated working conditions contribute to the stressful existence. The current democratic government must promote a more healthful lifestyle for the population and accept the challenge of improving occupational and environmental health while stimulating a more sustainable economy.

The Czech economy remains heavily based on energy-intensive industries -- such as mining, metallurgy, and chemical production -- that pose significant risk to workers and the general population. Black coal mining occurs in Northern Moravia where two-thirds of new cases of pneumoconioses are diagnosed. Brown coal mining in open cuts in Northern Bohemia

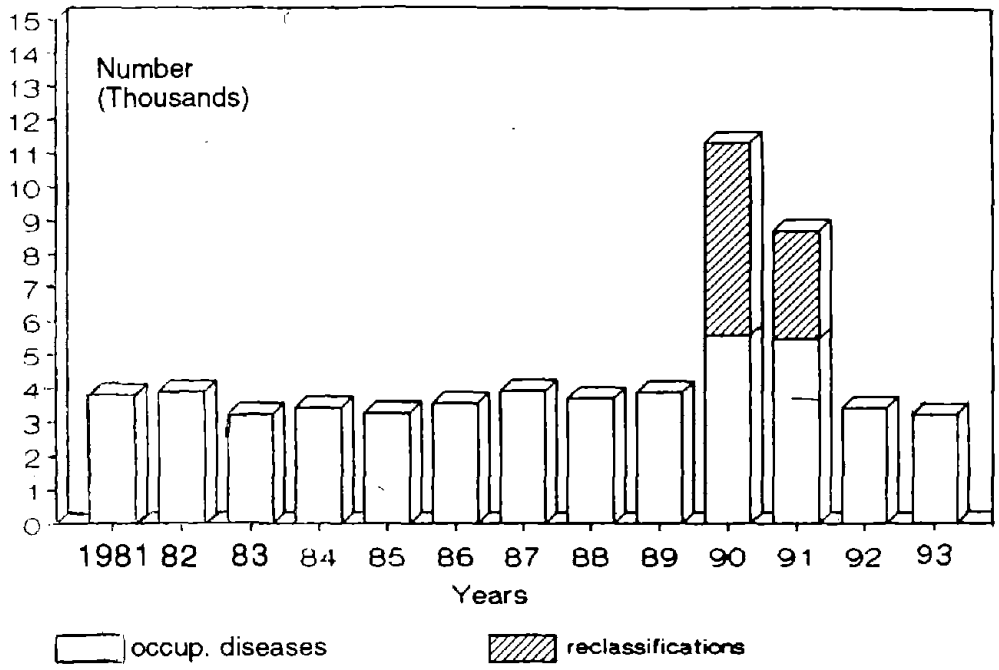


FIGURE 3. Occupational diseases in the Czech Republic, 1981 - 1992.

(near the German border) together with its burning in power stations has changed the beautiful mountainous region into a moon-like landscape and devastated vast areas of forest as a result of damage from acid rain. The cost of the damage from energy production to the environment (and human health) is, therefore, shifted to the general public and future generations. Agriculture is oriented to both vegetable and animal production, however, it has been characterized by careless and excessive use of fertilizers and pesticides (2), which are also energy-intensive products. At this time, the Czech economy certainly cannot be characterized as "sustainable."

"The stringent workplace standards ... were practically impossible to meet ... It was a system of health care that professed quality as its goal but promoted conflicts of interest ..., and abuses of occupational health and worker safety."

OCCUPATIONAL HEALTH AT THE CROSSROADS

The Czech Republic appears to be in a better position to make significant improvements in occupational health than are other post-Soviet nations of Central and Eastern Europe. It does not face such basic problems as the absence of education for university students and graduates in occupational health. The Czech List of Occupational Diseases does not differ substantially from that used in the West (8) and the recognition and reporting of occupational diseases is well-developed compared to other countries of the region. In addition, there is

no evidence of any significant number of unrecognized classical occupational diseases.

The solutions to improving occupational health may not all be "new." Preserving the best of the old systems should include:

- Thorough registration of hygienic conditions of the workplaces;
- A broad system of periodic examinations of employees;
- Easy access to departments of occupational diseases to determine whether disease originated in the workplace;
- Standardized national criteria for acknowledging a disease as occupational and the provision for case review by specialists;
- Free support from trade union lawyers for employees in legal conflict with an employer;
- The availability of curative care at the workplace;
- A system of vaccination and communicable disease control; and
- The concentration of patients with all kinds of occupational injuries and disease in university hospitals to provide direct educational opportunity for medical students and graduates.

Certainly the success of the transition to a market economy will greatly influence the status of occupational health. Cost containment during privatization will make investment in workplace prevention less likely. Preservation of historical strengths in occupational health and implementation of reforms will require not only capital, but also foreign expertise along with an exchange of information concerning risks and problems of occupational health in the free-market economy, where the incentive is to maximize profits at all costs. Strong occupational health and safety laws will also play an important role, and a key factor will be to measure economic success in environmentally realistic terms. (1) The democratic government must avoid continuing the Communist legacy of short-term economic planning at the expense of environmental and occupational health. Integration of occupational health into the general health care system and application of the principles outlined here will do much to ensure the continuation of the legacy of Dr. Teisinger.

REFERENCES

1. **The Czech and Slovak Federal Republic. The Health Sector. Issues and Priorities.** Human Resources Operations Division, Central and Eastern European Department. Europe, Middle East, and North Africa Region, World Bank, 1991.

2. Moldan, B. and Schnoor, J.L. "Czechoslovakia — Examining a Critically Ill Environment." **Environ. Sci Technol**. 26 (1):14-21, 1992.

3. Newman, J.R. **Czech and Slovak Federal Republic Joint Environmental Study - Volume II Technical Report.** World Bank & U.S.A.I.D, 1991.

4. **The National Programme of Health Restoration and Promotion in the Czech Republic** Ministry of Health of the Czech Republic, National Centre for Health Promotion, Prague, 1992.

5. Ulrich, L. "Pneumoconioses Related to Workplace Exposures in Czechoslovakia. In Levy, B.S. (ed.) **Air Pollution in Central and Eastern Europe**. Boston, Massachusetts. Management Sciences for Health, 1991.

6. Hertzman, C. **Environment and Health in Czechoslovakia**. Univ. of British Columbia, Health Research Policy Unit, Vancouver, B.C., 1990.

7. Urban, P., Hamsova, L., and Nemecek, R. **Overview of Occupational Diseases Acknowledged in the Czech Republic in the Year 1992**. State Institute of Public Health, Prague, 1993.

8. **List of Occupational Diseases Amended by the Conference at its 66th Session**. ILO, Geneva, 1980.

Doug Fowler points to asbestos-containing material on glass factory production line.

Occupational Health in Central and Eastern Europe

DISCUSSANT: JOHN WOODING

"Most significant is the question of how we are going to change our institutions and change our perspectives on occupational and environmental health. I smell politics. And so, inevitably, the question becomes ... the political problems, and the decision-making process about allocation of resources."

I recognize the complexity of the problems facing Central and Eastern Europe. Americans have a tendency to consider all of Central and Eastern Europe as one unit, and the countries as very similar. But I have learned that they are really very different. They have different kinds of heritages, different institutions, different histories, and different backgrounds. We've not always paid attention to those issues and to that history and the way that history affects the changes that have occurred in the last two or three years. I'm talking particularly about how they affect the administrative, legal, and political institutions which make the changes in occupational health and environmental safety.

In the process of restructuring, you seem to be equal to the task. You are building both new institutions and political coalitions, while at the same time trying to deal with previously existing institutions and coalitions.

POLITICAL ISSUES

There are three elements that come out of this process that seem to be domestic problems.

Most significant is the question of how we are going to change our institutions and change our perspectives on occupational and environmental health. I smell politics. And so, inevitably, the question becomes not so much the technical issues involved and how to reach solutions, but the political problems and the decision-making process about allocation of resources.

The second point is assessing the positive and negative impacts of restructuring on the institutions and politics of these countries. This morning, references were given to both the merging with the European Community and to those national labor organizations involved in decision-making. You have to deal with, take advantage of, or be aware of these impacts and

processes on restructuring and the role they play in each of these countries. The issues referred to today seem to stress the problem of restructuring under severe economic restraints. If you have destroyed some institutions, you must build new ones. From Dr. Pelclova's comments, it seems there have not been great changes in Bulgaria from the previous regime. In Poland, in contrast, there are some changes underway in the last three years that have not been major but certainly have been significant. And, then, Czechoslovakia has seen significant changes, again in the last few years.

Looking at it from the social side, with a different history in each of these societies, the effect of restructuring causes those changes that concern us the most. I know that you are talking from your own professional expertise and the positions you have within the occupational and environmental health services. But, after the discussion, I've been particularly concerned about the role of prevention, as in the United States -- prevention in terms of removing the source of the problem (toxic chemicals), cleaning up workplaces, and cleaning up the environment.

ROLE OF WORKERS

" ... we've been trying to build political coalitions. The more those coalitions are built, the more potential you have for having democratic input into the decision-making process."

I'm also interested in the discussion of the role of workers who are involved in administrative reconstruction. Now, I know that in the past that has had a certain negative implication with respect to the attitudes of the previous dominant regime. And certainly if you are going to have change, workers are going to have to be involved in making decisions about the issues facing them in the workplace as much as the state-organized ministries that we talked about in this discussion.

The third point, which comes out of widespread experience in the United States and in Western Europe, is, to what extent can you professionals involve the workers and also members of the community and non-environmental organizations in the decision-making processes about their exposure and the use of chemicals, dangerous chemicals, toxic substances, and potential safety and health problems? What particular ways can that be done? Again, I heard very little discussion about the role of professional expertise in it.

Using the example of the United States, one thing that has been happening that may or may not be useful in terms of what has been going on in Central and Eastern Europe is that we've been trying to build political coalitions. The more those coalitions are built, the more potential you have for having democratic input into the decision-making process. This is not to say that the situation described in this discussion this morning does not require that there be some kind of institutions necessary to regularly assist them in this case. If you like very strong pressures from below, those traditional political institutions will not be continually responsive to the needs of the people affected by both environmental and occupational safety and health issues.

Working Groups on Occupational Health

Occupational Health and Health Care in the Workplace

PRESENTED BY RAY THRON

Some of the issues we discussed were: How can you identify risk or more easily identify the hazard? Issues include the equipment and analytical methods used to identify and determine what the risk is. Often, in dealing with a variety of chemicals, the toxicologic information and health effects from different exposures are uncertain, so identifying the risk can be difficult. There are questions about how long the person has been exposed and the sensitivity of the individual. And, importantly, what is an acceptable risk ?

"There needs to be discussion between medical and biological professionals and between technical and engineering professionals. But not to be forgotten are the workers themselves. So often, we look at a pyramid and only look at the top. We don't talk to workers, who really comprise the majority of people in the pyramid. You need to have them involved in discussions as well."

How can you make the association of the hazard or risk to a disease or illness? This is an important question because I think we all understand that the workers have pre-existing illnesses or health conditions and, often, these conditions may not be reported at the time of the pre-placement physical exam. The individual may not want to disclose any pre-existing condition because that individual wants to get a job. He or she may worry that if something is said about pre-existing conditions, then he or she may not get the job, even though in the U.S. law protects against this happening.

ASSOCIATIONS DIFFICULT

It frequently is difficult to associate the workplace hazard with the illness. There may be exposures in other areas in the community or home that could affect causation. Another concern is when the worker may complain of symptoms like headaches or dizziness. Things like that, which are very common to a variety of illnesses or diseases, make it very difficult for the physician to determine what workplace conditions are the cause of the symptom.

We need to have communication among different professionals. There needs to be discussion between medical and biological professionals and between technical and engineering professionals. But not to be forgotten are the workers themselves. So often, we look at a pyramid and only look at the top. We don't talk to workers, who really comprise the majority of people in the pyramid. You need to have them involved in discussions as well.

PREVENTIVE VS. CURATIVE

Another issue that we discussed — a policy issue — is whether health care in the

workplace should be preventive, curative, or both. The answer to this question often will come from management. If the company is large and if it has the resources and the personnel, it can do more than just preventive care.

It would be ideal to give the worker as much information and health care as possible. At a minimum, the employee receives information on prevention. Hygienists, nurses, and even managers and supervisors can be involved in this process. They can inform the workers about the extent of hazards regarding particular substances to which workers have been exposed.

"Surveillance is a systematic and ongoing collection, evaluation, and use of relevant data on diseases, injuries, or hazards, for the purpose of prevention — not just medical data on morbidity and mortality, but exposure data. Surveillance is actually a philosophy of public health."

Surveillance and Monitoring for Occupational Disease

BY PÉTER RUDNAI
AND WILLIAM HALPERIN

We adopted Alexander Langmuir's definition for surveillance and modified it for occupational disease. Surveillance is a systematic and ongoing collection, evaluation, and use of relevant data on diseases, injuries, or hazards, for the purpose of prevention — not just medical data on morbidity and mortality, but exposure data. Surveillance is actually a philosophy of public health. Surveillance is different from personal medical monitoring.

GOALS OF SURVEILLANCE

Other goals of surveillance are:

1. To provide some information about the magnitude of the problem.

2. To track the trends of disease, injury, or exposure in relation to a control program — to evaluate the effectiveness of an intervention that is used.

3. To find the workplaces with the worst experience so that industrial hygienists can assess and make improvements in those workplaces. There is an important role for surveillance in targeting intervention to specific workplaces that need consultation, regulation, or other action.

4. To focus the public's attention on chronic problems. The public needs to be reminded that certain important problems exist and that something has to be done about these problems.

PRELIMINARY DATA

Surveillance data are not detailed information like research data are. They are very preliminary data that help us develop practical public health solutions and recommendations. They do not always lead us to the right decision, but they generally protect us from making wrong decisions.

We discussed many examples of surveillance, based on environmental monitoring, biological monitoring, nutritional monitoring, and even monitoring for adverse pregnancy outcome. We concluded that in many ways surveillance focuses us on what we are supposed to be doing in public health, which is really recognizing problems, evaluating them, and then intervening to control them.

"There is an important role for surveillance in targeting intervention to specific workplaces that need consultation, regulation, or other action."

Management of Workplace Hazards: Disciplines, Roles, and Approaches

PRESENTED BY EUGEN GURZAU AND DOUGLAS FOWLER

Our group included representatives from Romania, Hungary, Denmark, and the United States. We began with some individual presentations of our experiences in our own countries and the lessons that we had learned from those experiences. In the U.S., trade unions are very weak, except in a few industries. Government agencies tend to be strong, and workplace regulation tends to be generally driven by employers and government agencies, with the influence of the legal profession for harm done to people by products that are considered defective.

EFFECTIVE CONTROL

Workers' compensation systems are often considered to be effective control mechanisms. Physicians involved in direct workplace evaluation are few in the U.S. On the other hand, the U.S. has more than 10,000 industrial hygienists. There has generally been a lack of collaboration among physicians, engineers, industrial hygienists, and others in environmental health professions. In the U.S., more environmental than biological monitoring is done. Each approach has strengths and weaknesses.

Generally speaking, as an outsider looking at Central and Eastern Europe for the first time, I see a need for collaboration, including international collaboration to share scarce resources.

Some problems that require immediate solutions in Central and Eastern Europe, are, in many regards, similar to problems in Western Europe and North America 20 or 30 years ago.

TRAIN TO INTERVENE

Stressed were the importance of monitoring in the workplace and the need to train engineers, toxicologists, and physicians in workplace intervention methods. There is also a need to train and educate workers, which can only be done effectively by involving trade unions in those countries where trade unions have a strong presence.

Some people question the position of nongovernmental organizations (NGOs) and how in some instances NGOs need training in order to provide an effective voice. About 10 percent of the physicians in Denmark work in preventive medicine, more than in many other countries.

We believe that the focus for prevention of exposures in the workplace needs to be with an engineering approach — that is, by controlling environmental conditions. Both management and workers must be involved if there is to be effective control. It is most important to monitor the workplace, but it is also important to supplement environmental monitoring with biological monitoring, as appropriate, to verify that what we think we know from environmental monitoring is, in fact, true concerning actual exposures of workers.

Finally, while research is certainly needed, the research that is most appropriate is

"As an outsider looking at Central and Eastern Europe for the first time, I see a need for collaboration, including international collaboration to share scarce resources. Some problems that require immediate solutions in Central and Eastern Europe, are, in many regards, similar to problems in Western Europe and North America 20 or 30 years ago."

research on intervention methods — as opposed to identification of hazards. It was felt that many of us already know that lead and silica are problems and that scarce research resources should be focused on how to intervene at the workplace to reduce hazardous work exposures and eliminate dangerous working conditions.

"We believe that the focus for prevention of exposures in the workplace needs to be with an engineering approach — that is, by controlling environmental conditions. Both management and workers must be involved if there is to be effective control."

Relationships Among Nongovernmental Organizations and Labor Unions: Possibilities for Partnerships?

PRESENTED BY ANDREW WATTERSON

Our group consisted of people from Poland, Czechoslovakia, Hungary, England, and the United States. Although we found that there are some similarities in approaches, we also found many differences.

We discovered different understandings of nongovernmental organizations (NGOs). In Western Europe, the understanding was that they were basically pressure groups that were funded or run by governments. We all found examples within the World Health Organization of NGOs that were industry-oriented. Among labor unions and trade unions, there are different models and different approaches. In Western Europe, democratic trade unions are independent of government.

RELATIONSHIPS DISCUSSED

Relationships among various occupational and environmental health groups are generally semi-formal or informal.

We briefly touched on the role of scientists and experts. We primarily focused on the fears of the various groups and the extent of different views and perceptions. Not only did we find differences between countries, but we also found them within countries; different groups responded in different ways. For example, while one trade union promoted reduction in the use of chemicals, another trade union, involved with chemical production, did not think this was a good idea. Some NGOs have no interest at all in workplace problems.

NGOs were concerned that they might compromise workers. Trade unions were concerned about plants that pollute neighborhoods, threaten health, and have other effects. There is a suspicion that NGOs in the West are basically middle-class groups who do not want industries polluting their neighborhoods. Some believe that NGOs represent a government point of view.

The talk led to the idea that there are jobs on one side and the environment on the other, and there could not be a joint approach to deal with these issues. This manifested itself in mistrust between trade unions and NGOs — mistrust present in Western Europe and the U.S., and even greater in Central and Eastern Europe.

BENEFIT FROM JOINT ACTION

But mutual benefit might flow from joint action. The two groups can act to protect the environment both inside and outside the workplace. What damages health inside the workplace can damage the health of people outside. In the West, not many managers live near their own factories that are polluting neighborhoods. Yet, workers do. So workers may be exposed to problems both inside and outside. In Poland, trade unions have been concerned about the

general environment, and what is happening to their health as a result.

Another area of mutual benefit is protecting jobs. It is a false dichotomy to say, "Choose between a good environment and fewer jobs or more jobs and environmental pollution." One protects jobs by protecting communities. One way of protecting communities is by ensuring investment in clean technologies or clean-up technologies. In fact, many jobs may be created by environmental protection. In general, plants with the worst investments are closed first. They often have the worst health and safety records and are the biggest polluters. Thus, to protect jobs and the environment, promote investment.

What possibilities exist for action in the future? There are no set formulas and few models. Different cultures, histories, and organizations would influence cooperation among trade unions and environmental NGOs. There is considerable value in networking among workers and environmentalists at the local level.

"We discovered different understandings of nongovernmental organizations (NGOs). In Western Europe, the understanding was that they were basically pressure groups that were funded or run by governments. We all found examples within the World Health Organization of NGOs that were industry-oriented ... In Western Europe, democratic trade unions are independent of government."

Both small- and large-scale funding are needed to deal with pollution inside and outside of the workplace. If NGOs are not developed well, there might be little real value in funding them at the moment, in which case funds should go to labor unions, who could assume broader roles. The converse is also possible.

There are examples from the European Community and from Massachusetts of bringing together workers and members of polluted communities for action against pollution.

Participants dressed to visit a food processing plant.

IV. Restructuring Public Health

Participants in a conference session share their ideas.

Restructuring Public Health in Hungary

BY FERENC BOJAN

First, I would like to present some general data about the demography of the Hungarian society. The birth rate from the beginning of the 1960s until the early 1980s was higher than the death rate. But since the early 1980s, the Hungarian population has been declining, with the death rate higher than the birth rate. (Figure 1) Looking at life expectancies at birth in some countries, Hungary's is not only lower than many, but it is declining for men. By the end of the 1980s, there was a significant difference between life expectancy at birth in the Western societies and in Hungary. (Figure 2)

Looking back at history, I would like to go back to the 1950s. In international comparisons, Hungary's position was better then. After World War II, mortality improved rapidly. By the middle of the 1960s, the mortality ratio of Hungarians became identical to that of the Western societies. However, Hungary's mortality rate went up dramatically after the mid-1960s. In the former communist countries, during a more political period (the 15 years from 1970 to 1985),

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From the mid-1960s, the mortality rate of every major age group became higher. In Hungary, the infant mortality rate has been traditionally higher than in the Western societies. (Figure 3) Primarily the mortality of middle-aged males started to increase after the mid-1960s. The mortality rate in older age groups also increased. (Table 1)

TABLE 1. Age-specific mortality rates (deaths per 1,000 population) in Hungary in 1970 and 1990

Age group (years)	Male		Female	
	1970	1990	1970	1990
25-29	1.72	2.03	0.70	0.66
30-34	1.99	3.23	0.90	1.26
35-39	2.91	4.90	1.45	1.94
40-49	5.23	9.19	2.98	3.72
50-59	12.77	20.64	7.22	8.07
60-69	33.78	39.75	18.86	18.82
70 and over	101.67	109.20	82.38	84.52

The trends in mortality rates from cardiovascular diseases were very similar to the mortality for all causes. Looking at the international scene, it is only Hungary and her former communist associates in which the mortality rate from circulatory diseases increased to a great extent during the last two decades. Even so, major groups oppose the resources which are going to prevention in Hungary.

The trends in mortality from malignant diseases are also increasing. Especially lung tumors affect more and more victims. The tolls of the external causes of death, including different kinds of violence, accidents, homicides, and suicides are also increasing.

A special group of causes of death, which is named "amenable causes," may reflect the quality of medical care at the population level. The mortality rate from amenable causes also shows a very bad pattern reflecting serious deficiencies of the medical care system.

The quality of environment and the lifestyle of the population, with regard to smoking, alcohol, and drug abuse, eating and physical exercise, leave much to be desired. There is little interest in health promotion. Disease prevention and health promotion activities have low prestige among professionals as well as lay persons.

In addition, a new pattern of morbidity can be foreseen. Both the unemployment rate and the number of people with incomes insufficient for a decent living standard are increasing rapidly; the number of refugees and homeless people are increasing unexpectedly; broad strata are threatened by pauperization; and more and more people are overworked.

Consequently, tuberculosis and nutritional deficiencies are of public health importance again; new infectious diseases and sexually transmitted diseases are spreading; and new environmental and occupational risks are expected. The number of persons suffering from limitations due to chronic conditions and the number of disabled people is increasing.

These health data show that in Hungary it was not only primary prevention, it was not

only secondary prevention, it was not only the public health service that were inefficient. All sectors of Hungary's health service were inefficient.

There is much that should be done to improve the population's health status. A new concept of public health is needed. Hungary is undertaking a review of its health care system. The future shape of the curative health care system is as yet undecided, but the principal parties are in favor of a move to a market system based on health insurance.

SOCIAL ASPECTS NEGLECTED

The dimension of the health care system of Hungary is amazing in comparison with the Gross Domestic Product (GDP). The GDP per capita is less than US $3,000 and from this GDP less than US $200 per capita is spent annually on health. Despite the low health expenditure, the number of physicians is quite high -- greater than 40 per 10,000 population, and the number of hospital beds is also high -- 100 per 10,000 population. (Figures 4 and 5)

This system can be maintained with very low health expenditures because the salaries of the health workers are extremely low. It is frequently said that a bus driver makes much more money than a highly specialized, middle-aged physician. In addition, the health institutions worked with over-used pieces of equipment and always had very limited budgets for pharmaceuticals and other supplies.

So this is the outcome of the former state health services system in which the public health service was inefficient. It was inefficient in preventing health problems and illness, in promoting good health, in providing care of high quality. With the new public health system in Hungary and a better understanding of public health, we strongly hope that the situation will improve.

After the political changes in 1989 we have had good opportunities to restructure the whole society, including the public health system. Next, I will list the milestones in the restructuring of public health in Hungary with the new

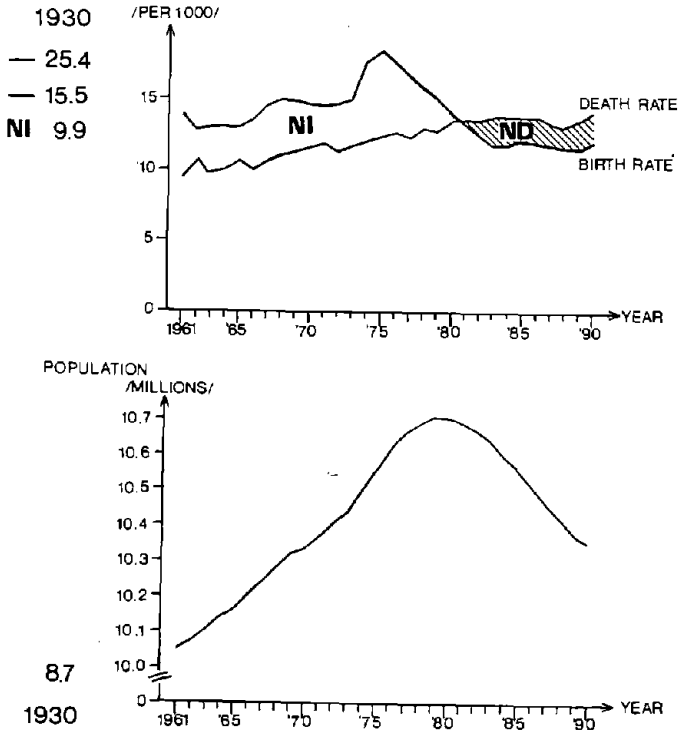

FIGURE 1. Live births, deaths, natural increase (NI), decrease (ND), and population in Hungary, 1930 and 1961-1990.

"There is much that should be done to improve the population's health status. A new concept of public health is needed. Hungary is undertaking a review of its health care system. The future shape ... is as yet undecided but the principal parties are in favor of a move to a market system based on health insurance."

parliament and government.

In 1990, there were free elections and a new Parliament; the Local Government Act was passed which gives responsibility to local governments for the provision of health services and social services and gives them ownership of health care institutions.

In 1990, the European Community Project (PHARE) was begun for Poland and Hungary, giving aid for the reconstruction of the economy. Later, this project was extended to every country in Central and Eastern Europe, except for the former Soviet Union and Yugoslavia. PHARE is relevant to restructuring public health services because it supports the development of human resources, including improvement of health.

In 1991, the Public Health Act established a new State Public Health and Medical Officer Service (SPHMOS). The chief medical officer supervises the National Public Health Center, comprising the former national health institutes, including institutes of hygiene, occupational health, food and nutritional health, and many public health centers -- 20 at the county level and 146 at the municipal level. In addition to some previous responsibilities, the Act's Medical Officer Service is monitoring and evaluating the health of the population, including noncommunicable diseases; monitoring and evaluating environmental and lifestyle factors affecting health; informing the public about health and influences on health; setting, monitoring, and enforcing environmental standards; controlling communicable diseases; promoting healthy lifestyles and health education; supervising health services, including primary care, maternal and child health, school health, and occupational health; and providing advice on the organization of health services, including authorization of new facilities.

DEVELOPING MEDICAL EDUCATION

In 1991, the four medical schools of Hungary got started on a new project for the development of medical education for a new public health. It is a 3-year project funded by the European Community and is named TEMPUS (the Trans-European Mobility Scheme for University Studies). In this peer project, all Hungarian medical schools will participate and collaborate with Western European public health academic department projects. The components of this project include:

• Developing new teaching programs in public health, including a program on non-infectious diseases;

• Management, policy development, communication, and related subjects in areas of public health training;

• New teaching methods for training in public health; and

• Development of teaching and communication infrastructure (purchasing computers, photocopiers, faxes, books, journals, and other items).

Most important is training the young university teachers in highly respected Western universities so they can return to Hungary to teach public health. It is my personal view that this will have the greatest impact on advancement in public health education.

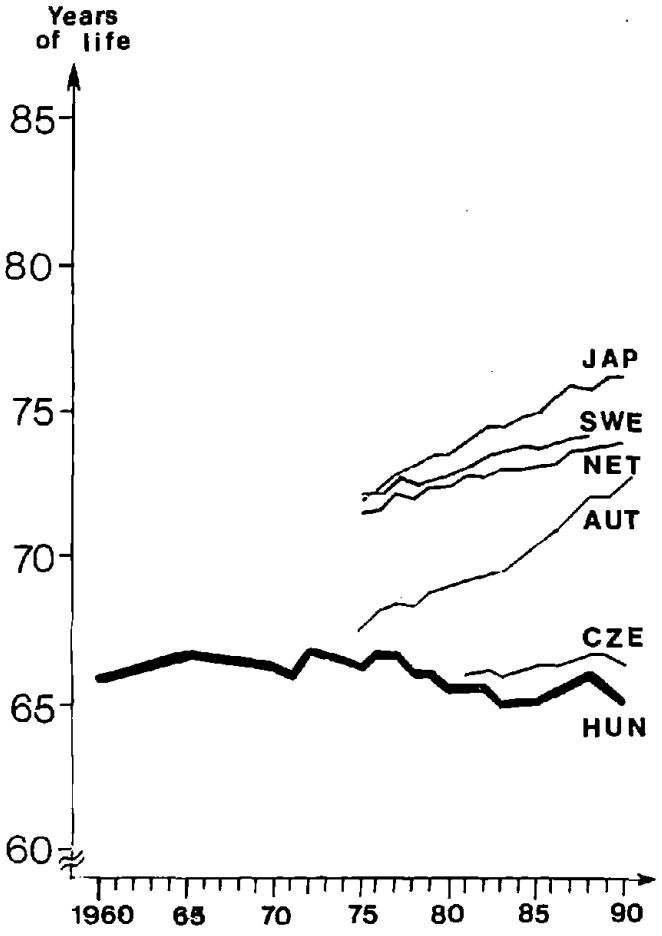

FIGURE 2. Trends in life expectancy at birth for males in some countries, 1960-1990

The next milestone was the founding of the Hungarian Society for Public Health in 1991. The goals of the society are:

• To foster and encourage the development of a New Public Health in Hungary;

• To provide information by organizing scientific meetings and conferences, and initiating publications and providing forums for dissemination of results, discussion of new findings, and exchange of ideas, in order to encourage research;

• To contribute to training in public health; and

• To achieve the goals of the Society to establish contacts and collaboration with national and international public health societies.

The Society has organized meetings addressing the social inequalities in health and the definition of public health in

"Public health involves multidisciplinary and intersectoral approaches and practice. Its goals are promoting health, preventing disease, and prolonging life of good quality. These are implemented through the organized efforts and efficient use of the material and intellectual resources of society and through individual initiatives. Public health relates to the health problems of populations and its practice has a scientific basis."

Hungary, the national public health priorities, the priorities in public health research, and related subjects. In addition, the Society issued position documents, such as one on the need for a ban on tobacco advertising, and it reviewed governmental policy documents at the request of governmental bodies.

DEFINING THE PRIORITIES

There is much discussion about the content and importance of public health in Hungary. The Society organized a conference in 1992 to define public health for Hungary for the 1990s. It accepted this definition of public health: "Public health involves multidisciplinary and intersectoral approaches and practice. Its goals are promoting health, preventing disease, and prolonging life of good quality. These are implemented through the organized efforts and efficient use of the material and intellectual resources of society and through individual initiatives. Public health relates to the health problems of populations and its practice has a scientific basis."

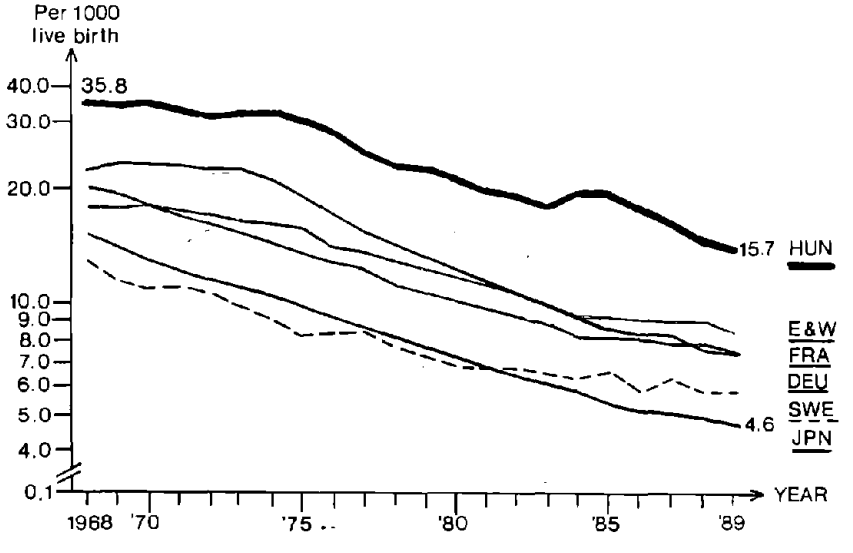

FIGURE 3. Trends in infant mortality in Hungary and selected developed countries, 1968-1989.

The National Insurance Act of 1992 was enacted by the new Parliament and the state health services system in Hungary was replaced by a national insurance system. The Primary Care Act reorganized the health sector regarding primary care, which is the most effective form of care.

In 1993, the World Bank project started restructuring health services and management and public health. The compo-

nents of this World Bank project are: development of public health computerized information systems; implementation of the National Health and Nutritional Survey; development of screening programs; development and implementation of school health programs; and development and implementation of health promotion programs to demonstrate effective ways to improve the health status of the population. The project includes developing a school of health services management and a school of public health.

We expect very much from the changes because there is much to be done here. We should be optimistic that in the long run we will achieve an efficient public health service system.

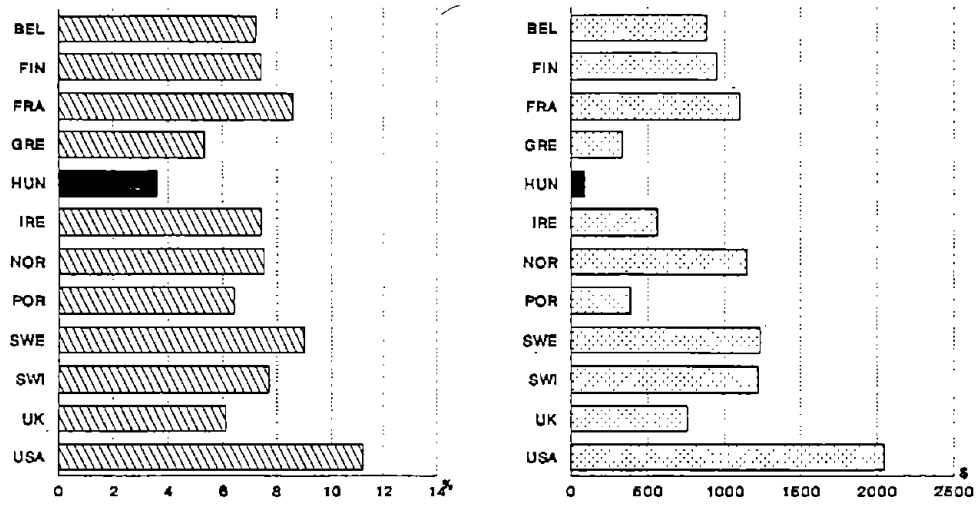

FIGURE 4. Left: Health expenditure as a percentage of GDP, 1987. Right: Health expenditure per capita in US dollars, 1987.

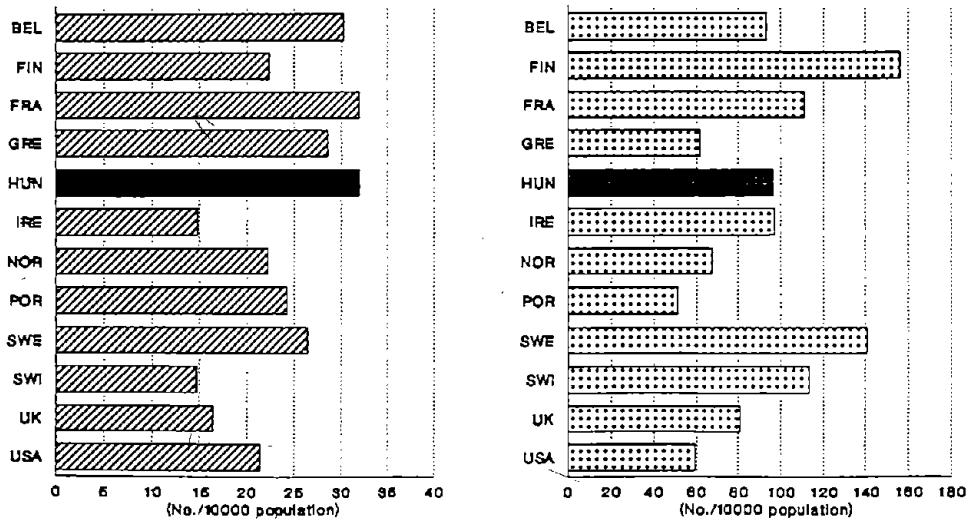

FIGURE 5. Left: Number of physicians per 10,000 population, 1984-1986. Right: Number of hospital beds per 10,000 population, 1982-1985.

Reform of the Public Health Service in Romania

IOANA IACOB

As we approach the 21st Century, the challenges facing public health services remain as daunting as at any time in the 20th Century. Humanity seemed set on a course toward steadily improving health, and as we entered in the final quarter, the World Health Organization slogan — Health for All by the Year 2000 — seemed an attainable goal, at least to some realistic health planners at the national level. It still could be, if the targets and priorities are defined and all energies are focused on achieving it. But in addition to many longstanding unsolved public health problems we face now, there are challenging new difficulties.

After presenting some general data about Romania, I shall describe the present structure of public health services and the draft for reform. I shall conclude by pointing out the relevant problems related to environmental health services. The presentation is based on governmental policy documents and a National Institute of Health Services and Management document.

"Public health services are ... provided to the population in order to prevent disease and to maintain health. Public health services have a long history. All societies and civilizations have practiced some sort of public health measures, however inadequate."

I. GENERAL DATA

Total Population: 22 million

Urban Population: 54 percent

Rural Population: 46 percent

Bucharest, the capital: 2 million inhabitants

Urban areas include 260 cities; 17 percent of the population live in urban areas of greater than one million inhabitants; 42 percent live in big cities of 100,001 to one million people; 37 percent live in small cities of 10,001 to 100,000 inhabitants

Rural areas include 2,688 villages; 54 percent of the inhabitants live in small villages of 2,001-5,000 people; and 38 percent in large villages totaling 5,001-10,000.

The physician-to-population ratio is 1:555.

Mortality rate: 16.6/1,000 inhabitants; birth rate: 11.4/1,000 inhabitants; for the first time in

our natural history, the percentage of population increase is negative during a peace period. The infant mortality rate is 23.4 per 1,000 live births.

Life expectancy at birth is 70 years; 67 years for men and 73 for women.

Public health services are those services provided to the population in order to prevent disease and to maintain health. Public health services have a long history. All societies and civilizations have practiced some sort of public health measures, however inadequate.

II. HISTORY IN ROMANIA

Public health services started early in Romania. In 1782, the first public health measures were implemented: quarantine stations at the border in order to provide care for travelers and to prevent importation of such diseases as smallpox and plague; the first hospitals for the plague; the obligation of communities to pay physicians for surveying environmental sanitation. Soon after 1800, smallpox vaccinations for children were required. The year 1830 recorded two important events: the Sanitary Police regulations in Bucharest and the setting up of preventive care ambulatories on the riverside of the Danube.

"A milestone in the development of community public services was reached with the Sanitary Administration Law enacted in 1862."

The Sanitary Police regulations said that physicians had to supervise the quality of food on the market and the sanitation of the city.

A milestone in the development of community public services was reached with the Sanitary Administration Law enacted in 1862. The hygiene and sanitation commissions were organized at a local level. The activity was focused on environmental services to remove and to dispose of the sewage, to provide safe drinking water, to control the food, to prevent communicable diseases. The commission included the mayor of the town, the chief physician, an engineer, and an architect.

In 1867, the Hygiene Commission of Bucharest approved the regulation of "dirty" industries and stipulated that they must be placed outside the city in order to protect the environment and the health of inhabitants.

The first Sanitary Law, in 1878, provided the framework for public health services focused on vital statistics, communicable diseases prevention, and environment sanitation.

The Ministry of Public Health, Labor and Social Affairs was established in 1922; the Institute of Hygiene in Bucharest was founded in 1927.

History of Public Health Services in Romania

Public health services are those services provided to the population in order to prevent disease and to maintain health. They are a segment of health care.

1782:	**Quarantine stations at the border hospitals for plague**
	Community taxes for environmental sanitation supervisor
1800:	**Smallpox vaccination**
1830:	**Sanitary police regulations for Bucharest. Physician had to supervise the quality of food and the sanitation of the environment.**
1862:	**Sanitary Administration Law: Hygiene and Sanitation Commission at local level: Mayor, chief physician, an engineer, an architect.**
1867:	**Reglementations on "dirty industries."**
1878:	**First Sanitary Law: Framework for public health services.**
1922:	**Ministry of Health, Labor and Social Affairs.**
1927:	**Institute of Hygiene -- Bucharest.**
1929:	**Sanitary Inspectorate -- MOHLSA Sanitary Inspectorates at local level.**
1933:	**Sanitary Law -- Institutes.**
1951:	**Similar to all Eastern countries.**

III. PUBLIC HEALTH SERVICES IN 1993

At the state level are the Ministry of Health, the Vital Statistics Center, the Institute of Hygiene and Public Health, and three regional Institutes of Medical Research and Public Health.

The county level has a Sanitary Authority and 47 Health Care Units; the Office for Health Status Evaluation; and the Sanitary Police Inspectorate and Preventive Medicine. Ambulatory care is delivered via primary health care and individual and community prevention activities.

There is no charge for health services for state employees, and there is decentralization of financial support. Taxes cover laboratory services, including permits, analyses, checkups on workplace conditions, and checks on the health status of workers at both state and private companies. Routine control for monitoring and immunizations is free of charge.

IV. PROJECT 'HEALTHY FUTURE'

Romania aims to develop and manage health care services, recognizing the necessity of a transition period. It expects to combine planning, management, and regulation related to competition and provide stimulants to achieve high quality and standards. Its objective is health care focused on the patient, with concern for the role of professionals, the structure of the health care providers, and an infrastructure of national support.

"Romania aims to develop and manage health care services, recognizing the necessity of a transition period ... Its objective is health care focused on the patient, with concern for the role of professionals, the structure of the health care providers, and an infrastructure of national support."

Within its framework, professionals will be accredited, and physicians will be independent rather than employees of the state. There will be a national fund for health insurance. Hospitals will be under local governmental authority and private. Factories will have ambulatory care facilities that offer state-supported preventive care.

The national policy, under the Ministry of Health, will deal with health promotion, prevention, and environmental health; accreditation; training, research, and technological investments; and information services. It will support a national institute. A national health insurance fund will be provided by the Ministries of Social Protection, Finances, and Health; national health insurance; and by agreements.

As for education and research, the Ministries of Health and Education will establish priorities for medical school accreditation and will integrate a new curriculum.

Basic Problems in Restructuring the Health Sector in Poland

LECH DAWYDZIK AND JERZY KOPIAS

"The lack of social agreement on how to divide responsibilities between the state and the citizens is the main obstacle to health care reform in Poland."

Restructuring of the Polish National Health Care System has not been simple. The process of economic change has overrun changes inside the system of budgetary institutions in health, education, and other areas.

Work on restructuring the National Health Care System began with the Polish political revolution in 1980. Since then, various groups of health organizers have agreed on the reasons for inefficiency in the health care system. They diasgree only about ways to repair the system.

THE FIRST STEP

The Act of Health Care Facilities, which went into effect in January 1992, became the first significant step in the reform process. The Act created possibilities for different forms of health care units, which have since emerged. Now, any group, such as employers, religious groups, labor unions, and medical worker groups, can be the funding body of a health care unit, under the condition that it assure proper staff and facilities. Unfortunately, the lack of detailed regulations has resulted in the health care sector as a whole remaining almost solely governed by the state.

Nevertheless, the Act should be treated as a revolutionary step because it has ended the monopolistic position of the government administration. The lack of social agreement on how to divide responsibilities between the state and the citizens is the main obstacle to health care reform in Poland. The responsibility of the state has been commonly accepted to include the following:

1. Creating national public health policy.

2. Educating medical students, including establishing and operating medical schools.

3. Creating obligatory, or minimal, standards for medical services.

But that is all!

EDUCATION FOCUS OF CONFLICT

Postgraduate medical education, for example, including specialization and professional supervision of physicians' activities, is the subject of serious conflict among the Ministry of Health and Social Welfare, the General Physicians' Council, and other groups, including the Polish Society of Occupational Medicine.

The question of management of medical institutions of all kinds is a source of dispute. The monopoly of the state has caused inefficiency of the National Health System. On the other hand, decentralization of the health management process may result in worsening access to standards of medical services. Decision-makers are aware of deep social discontent concerning these and related matters. Citizens had become accustomed to having free medical services.

A health insurance system is a hope of many patients and health care workers. Pressure for introducing health insurance was one of the main reasons for a mass strike action and a political crisis last month in Poland. People believe that if we introduce a health insurance system, all of our troubles will be over. This is another source of misunderstanding.

FINANCIAL RESOURCES LACKING

Our country and our people are poor. There is a lack of the financial resources needed for restructuring the health services system. I believe that a health insurance system could be the correct choice; however, it is not easy to start from zero. We really do not have any elements of the necessary institutional endowment for a health insurance system. In addition, no consensus has been reached as to who should pay (the state? employers? patients?) and how much should be paid into a health insurance fund.

Independently, the administrators of the National Health System as well as most health care workers are afraid of any innovation. The resistance against new ideas appears because immobility has always given them the feeling of personal security. This is an important sociological factor as reform is attempted.

So, what about the reform? Probably, the National Health System will be supplemented by an alternative form of medical institutions: cooperatives and private units. As a result, a complex health services market may soon develop. Such a situation has occurred in those regions of Poland where the process of privatization is the most advanced.

Institutions not in public health would have multiple sources of and possibilities for financing their activity. Some components of the National Health System will be supported from the state budget and supplemented from the peoples' pockets. These developments will result in establishing the health insurance system step by step. A negotiated loan from the World Bank should hasten the process.

Restructuring Public Health in the United States

BARRY S. LEVY

"Only about 3 percent of our national health budget is spent for prevention of disease. In 1992, we spent more than $800 billion ... on health, far more than any other country in the world ... Despite all the money spent, we have some very serious health problems in the U.S."

In recent years, there have been a number of studies for improving the public health system in the U.S. Some of the concerns in the U.S. are very similar to those in Central and Eastern Europe.

HEALTH STATUS INDICATORS

Despite the fact that the U.S. will spend a considerable amount of money for health, most is actually spent for medical care. Only about 3 percent of our national health budget is spent for prevention of disease. In 1992, we spent more than $800 billion, approximately 14 percent of our Gross National Product, on health, far more than any other country in the world. This amount of money is increasing each year; it increased, on average, about 15 percent per year during the 1980s. Despite all the money spent, we have some very serious health problems in the U.S.: as examples, AIDS, tuberculosis, and homicides are increasing, and child abuse is prevalent.

Despite the amount of money we spend on health and medical care, the U.S. ranks 19th in the world in infant mortality — with a higher infant mortality rate than any country in Western Europe; 28th in the percentage of low birthweight infants; 15th in maternal mortality (deaths of women during pregnancy or during or immediately after delivery); and 9th in life expectancy.

Many deaths in the U.S. — as in all countries — are preventable. It has been estimated that, under the age of 65, about two-thirds of all deaths in the U.S. are preventable. The burden of disease falls heaviest on poor people and those in racial and ethnic minority groups. For example, while among white infants the percent of low birthweight infants is 6 percent, among black (Afro-American) infants it is 13 percent. Infant mortality is much higher among Afro-American, Latino, and other minority infants than among white infants. Poor people in the U.S have a mortality rate due to heart disease that is more than 25 percent higher than the overall mortality rate due to heart disease. In sum, there are great inequities within the U.S. system.

Even in our nation's capital, the infant mortality rate is higher than it is in some developing countries. So although, in general, health in the U.S. is better than in Central and Eastern Europe, we have some serious health problems. At highest risk are people living in poor areas of our large cities and Native Americans living on reservations.

40 MILLION LACK HEALTH INSURANCE

More than 40 million people in the U.S. have no health insurance, and, therefore, their access to quality medical care is less than adequate. Primarily because the high cost of medical care is costing corporations, the government, and others so much money, there is great interest now in the U.S. for health care reform. The cost of what I and my employer pay for health insurance for my wife, me, and our two children is approximately $7,000 a year; my employer pays most of this amount. This is just one example of how expensive health care is in the U.S.

What is being considered in the U.S. is medical care insurance reform. While many of us public health workers are happy that there is interest in medical care reform to improve access to medical care, we are very concerned that in the process public health will not be given adequate attention.

Our concern is that more money will be pumped into the system and that the health of people in the U.S., especially poor people, will not be significantly improved. Nevertheless, many groups, such as the American Public Health Association (APHA), have taken a strong stand to improve the medical care system in the U.S.

APHA supports universal coverage (everyone should be covered) in a national health program and comprehensive benefits (all types of health problems should be covered). There should not be any financial barriers for people getting care; just because somebody cannot pay for care, that person should not be refused care.

Health care reform is a major priority of President Clinton and the U.S. Congress, and several proposals for health care reform have been made.

Let me now turn attention to the problems of the public health system in the U.S. and efforts to improve or reform the public health system.

About four years ago, our Institute of Medicine (IOM), which is part of our National Academy of Sciences, put together a group of experts on different aspects of health in the U.S. This group developed a very important report, *The Future of Public Health.* This report was a blueprint, containing much information about the current situation and many recommendations on how to improve it, especially with regard to public health. The report focused on three areas: collection of surveillance or monitoring data on health status; strengthening the science knowledge base; and insurance.

SHARING HEALTH FUNCTIONS

Public Health agencies work with many other groups in our society: schools and universities, other government agencies, nongovernmental organizations, labor unions, professional organizations, and other groups. Much of what public health agencies do in the U.S. is work with others; they get some other organization, either in or outside of government, to carry out public health functions.

The IOM report makes recommendations to improve the structure of public health. For example, it has an extensive list of recommendations about how to improve public health education, such as urging closer links between schools of public health and public health agencies and organizations so that the educational system in public health is improved.

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In addition, the report makes a whole series of recommendations by level of responsibility. We have public health agencies at the federal, or national, level. We have public health agencies at the level of each of our 50 states. Then, there are public health agencies at the local level: cities and towns and, sometimes, counties. The report recommends who should do what. For example, it says that the federal government should support knowledge development by gathering data, performing research, and exchanging information. It should establish national health objectives and priorities. It should provide technical assistance and monies to carry out programs. It should assure that actions and services are in the public interest and responsive to the public's needs.

In contrast, the report says that states should assess health needs, assure that there are regulations to ensure that public health is carried out appropriately, and develop statewide health objectives and ensure that they are followed up. There are also recommendations at the local level.

Finally, this landmark report makes recommendations and suggests strategies to improve the capacity — to improve the ability of our public health system to meet growing needs. These strategies include technical strategies, like a uniform national database, and managerial strategies, like improving the capabilities of managers and public health agencies. It includes some programmatic recommendations, like public health workers should place more emphasis on factors that influence health-related behavior, and some fiscal strategies to improve financial support for health programs.

Finally, the IOM report addresses political strategies, the major ones of which are the following: Public health leaders should develop relationships with legislators, educating them

and other government officials about public health needs in the community and what can be done to meet these needs. Public health agencies should strengthen their own competencies in community relations — how to interact with people at the community level to better understand their needs and to better educate them to what public health agencies are doing to meet those needs. Public health agencies should develop and cultivate relationships with physicians and other private-sector representatives.

MAKE COMMON CAUSE

There is an uneasy relationship between clinical doctors in the U.S. and people working in public health, and, within public health, between doctors and others. The report suggests that these relationships be improved and that agencies seek stronger relationships in common cause with other professional and citizen groups.

Community groups and voluntary health organizations in the U.S. are becoming more interested in public health but advocating for a cause. It is very important for public health organizations to understand and to work with those groups. Public health agencies should educate themselves on community health needs. They should also review the quality of street-level contacts between agency employees and clients — that is, there should be closer relationships and understanding between public health departments and the people who are being served by these departments.

Finally, an old tool is being adapted in the U.S. to better understand public health needs and to improve our public health services. In the U.S., schoolteachers write students' grades on report cards sent to parents so they know how well their children are doing in school and what problem areas exist. About a year ago, APHA developed *America's Public Health Report Card.* It would have been easy to take the infant mortality rate in each state and the death rate due to heart disease and cancer and show these data on the *Report Card.* Instead, APHA gathered health data and found new health indices to provide further insight about health status in different U.S. states. These areas are ease of access to medical care, healthy environment, healthy neighborhoods, healthy behaviors, and community health services.

Included under medical care access are data about the numbers of uninsured people in each state, the numbers of primary care and general physicians, the general physicians per population, and percentage of pregnant women who receive adequate amounts of prenatal care. Included under healthy environment are data on pollution standards, percentage of unsafe drinking water, and other parameters. Included under healthy neighborhoods is information about motor vehicle deaths per 100,000 miles driven, the violent crime rate, and cigarette tax per pack. Included under healthy behaviors are data on automobile seat belt use, and rates of smoking, excessive drinking, and obesity. Included under community health services are such factors as government health spending per population and the number of public health workers per population.

The *Report Card* is a useful tool in the U.S. and this model may be applied elsewhere.

The Politics of Public Health: The Role of Environmental NGOs in Building Coalitions

JUDIT VÁSÁRHELYI

Environmental health nongovernmental organizations (NGOs) in Hungary must keep building coalitions, which is true all through the region. Before, there was no such political culture, so we didn't learn how to build coalitions, how to get to consensus, how to make compromises. We see dramatic situations. The politics of some professions becomes, in some respects, more and more taxing. In some ways, we are more able to build coalitions, but we have to build coalitions on all environmental issues and fight for the possibility.

"But environmental laws were weak, even for a socialist state; absolutely inadequate. They did not reflect the needs of a market economy. The very ambitious work of re-drafting a change of course with all the necessary implications for public health has been going on now for a few years."

Most NGOs focus on one issue, like preventing the population from smoking cigarettes, an enormous issue. The number of people smoking or beginning to smoke is growing. The number of environmental NGOs also is growing. Almost in every Hungarian settlement, you can now find some NGO movement or group, for village beautifcation or something else that will have some impact on our issues.

WEAK LAWS

Another kind of NGO deals with research on public health and tries to work on prevention through legislation and education. As for legislation, I don't know how much you know about that. But environmental laws were weak, even for a socialist state; absolutely inadequate. They did not reflect the needs of a market economy. The very ambitious work of re-drafting a change of course with all the necessary implications for public health has been going on now for a few years. At the first draft, we were working in a coalition with the support of all of the political parties, even the NGOs then working with the business community.

It was really a very hopeful thing to start this ambitious and very, very important work because of the lack of technique. We

are at the ninth draft now and it is getting more and more messy and I don't know what the outcome will be of all of this. Perhaps many see it as too ambitious.

Environmental NGOs are very important and invited all thoughts at the very beginning, seeking a public process that would include feedback in an interested way. But without these special techniques, it's just a lot of debate, a lot of quarrels, and no plans.

I don't know whether NGOs were involved in drafting any laws on public health or health care. I don't know anything about that; it is not usual. The national government and the environmental government are basically operating the thing. It will very much cut down to the local level. Even the environmental authority was decentralized and very much cut down to the local level. Now, all the mayors of the local government are responsible and, without a serious environmental code, we can do anything now, take up anything dangerous, if you get to your mayor in your local government. The situation is very dangerous. That perhaps is the legacy of the last regime — even if we are against it being too centralized, we tend to think very much in a centralized way.

AN INTERACTIVE DEBATE

In the field of education, which is an enormous area, we are publishing public health information and hope eventually to build coalitions. Perhaps I can give it better odds because there was a long, interactive debate and work on a new national minimum curriculum. Now, they are after the fourth draft, and it is much more promising. So even if educators are a little bit dejected because it is very liberal and it was once riddled with a lot of alternative approaches, that means they just have to work the workbook. They have to build up a region and a concept and they cut it down according to their needs. This version of the minimum curriculum is relatively much better.

So freedom is a lot of work. We would like to democratize educational issues, just offer curricula of gains and means and groups and whatever can be offered by an NGO. It will be ideas that will bring change.

A lot of different things are happening right now. For example, a foundation in New York provides a training program on health nutrition and smoking, drugs, alcohol, AIDS. It was written in English by Susan Shapiro and is translated conveniently to all Eastern European languages and is available for all Eastern European countries at the source foundation with a three-day training. I think we are fighting for the children, this is really new for them. There's a lot of fun in it and a lot of healthy recommendations. The environmental NGOs are working for a healthier society.

I would like to speak about various coalitions in the medical field or with public health. Some work might be complicated by the lack of available information for NGO fights. Also, we have seen the continuous division of work among the NGOs, and it is not centralized, of course.

The government might cover all the fields that are meant to be covered. But there is a group of citizens inspired by some of the problems. They come to work, but in practice, there are a lot of holes. There is no place to provide a systems approach; one that is is evolutional would stem from society.

"Now, all the mayors of the local government are responsible and, without a serious environmental code, we can do anything now ... The situation is very dangerous. That perhaps is the legacy of the last regime — ... we tend to think very much in a centralized way."

GOODWILL BUT NO EXPERTISE

It might be politic if we speak about coalitions. Of course, sometimes there is a lot of goodwill but no expertise with the NGOs. Medical research is so fast and even medical people and physicians cannot keep up in the race and it is more true for NGO people. They never know what is the latest result or the latest thing to do, to disseminate. If we are to build up coalitions, the other side, the governmental side, the academic side should provide some bridge for us. There are such people who can be a bridge between the government and non-governmental sectors.

There is also a known struggle when the population sometimes is reluctant or protests against you. A very good example was among metallurgical workers. There were 500 tons of mercury in the soil. The workers and employees were warned, but it was less threatening than the idea of becoming unemployed. The mercury was not audited environmentally and it should have been. The government studied how to get it out. But the workers demonstrated not to take, so to speak, the safe step. Other examples can be drawn, but this kind of skepticism about your own life is an enormous problem.

It is a very bad thing that there is no panic in the Hungarian population due to basic conditions. I haven't heard anything, any kind of protest. Because of lack of information, nobody could believe the truth. As far as I know, a few young people wrote on the pavement with a piece of chalk and that was all the protest.

It was a very unhealthy thing not to panic because it meant that you would just prepare to die. If you knew about the Hungarian statistics on suicides ... I think the greatest obstacle to building up coalitions now, not only with the governmental sector but with the population as well, is a mental obstacle, a mental attitude that might make the situation even worse than we can imagine.

The cause of the environmental NGOs is first of all to try to change the people and educate them about how to safely keep our health, at least how to get cured. Our real hope is our children, if they're not so accepting and even sometimes teach the other generation for the first time in human history. I met a lot of them. Somehow, they know a lot. That's the message I can give to you. Perhaps the next generation will pay attention.

Working Groups on Public Health

Improving the Monitoring of Health Effects and Hazardous Exposures

PRESENTED BY JOHN BORRAZZO

Our group had 12 members from Bulgaria, Croatia, Hungary, Lithuania, Romania, Slovenia, and the United States. The fundamental distinction about monitoring was that it must be part of a surveillance program. When it is part of a research effort, it is a very different kind of monitoring program.

We identified scientific barriers to monitoring. They included unclear, passive identification -- for example, if we want to look at toxic substances such as pesticide breakdown parts, but instead we measure pesticide concentrations. Other barriers included the synergistic effects of mixtures of compounds, and questions about the complicated health endpoints of a monitoring program, lifestyle, or interpretation of the data.

We looked at other barriers, including financial resources and the acquisition of new technologies or equipment. Technological barriers arise, for instance, when the equipment we want does not exist. These are barriers to the means of detection. We looked at legislation and education barriers. You may not have the legal authority to execute the monitoring program that you want, or you may not have the trained personnel to do it. Institutional barriers occur when agencies have different agendas and capabilities, or when one agency requests more than the agency collecting the data is able to give. Barriers may impede access to information when proprietary data is involved -- if it is owned privately, perhaps it cannot be used as part of a public monitoring program. International collaborations may introduce barriers when a study cannot be confined to regional and national boundaries but requires work across international lines.

"Institutional barriers occur when agencies have different agendas and capabilities, or when one agency requests more than the agency collecting the data is able to give. Barriers may impede access to information when proprietary data is involved -- if it is owned privately; perhaps it cannot be used as part of a public monitoring program."

BIOMONITORING EFFECTIVE

We focused on certain aspects of exposure monitoring programs. Biomoni- toring is probably the most effective way of looking at exposures as a direct measure of dose, but it also is useful if you want to study a health endpoint.

Exposure monitoring may be external or internal. External monitoring focuses on the environment, whether that is a discharge into environmental media or personal exposures. Internal

methods of monitoring include biomonitoring.

There also is direct and indirect monitoring. Direct includes efforts to sample the population we want to directly monitor. The indirect method focuses on environmental concentrations. It tries to look at exposures through gross media to come up with a cumulative dose. Indirect monitoring involves a modeling component. Validation of a model from indirect monitoring is particularly crucial. You must be able to validate the model with direct monitoring.

"Biomonitoring is probably the most effective way of looking at exposures as a direct measure of dose, but it also is useful if you want to study a health endpoint."

We discussed health effects monitoring or, more appropriately, end points monitoring. The key issue is to determine why you are monitoring. A singular health effect may be useful for several different purposes -- treatment (for example, monitoring blood to identify those who require a certain treatment intervention), research, or exposure. Endpoint monitoring may have several problems: interpretation, when cause and effect are not well established; latency; and planning. In planning, you must ask these questions: When do you require a sample? When do you require the monitoring? When do you actually examine or identify the health endpoint of monitoring?

DISEASE REGISTRIES

We briefly discussed some problems of disease registries, such as resource limits and whether to use self-reporting or clinical examination data, and quality assurance in the laboratory, including measurements, record-keeping, and proper audits. We noted that the design of the samples that we use will directly impact the success of subsequent analysis outside of the monitoring program.

We also looked to the future. We expect that more personal monitoring data will become available and databases will grow larger, hopefully with improved quality from careful management. As we use more molecular indicators as bioindicators of exposure and disease, ethical questions will arise that must be addressed. Finally, we need new techniques to study exposures near background levels.

Restructuring Medical Care Systems: Impact on Environmental and Occupational Health

PRESENTED BY JAN SOBÓTKA AND DANIEL TEITELBAUM

In his book *Of Acceptable Risk*, William Lawrence makes the point that scientists have the responsibility to assess risk, but politicians have the responsibility to decide what is safe. Politicians are representatives of the people. It is perhaps unreasonable to place the burden for both data collection and policy decisions upon scientists. Professor Lawrence argues that we pay to litigate this.

We had a good discussion about the nongovernmental organization (NGO) approach, technical data collection, and governmental planning.

Let me give you my perception briefly of the advantages and disadvantages in the United States. I could identify the great advantages of the U.S. as having a uniform language, generally uniform code of laws and universal application of these laws, and ample means for dissemina-

"I could identify the great advantages of the U.S. as having a uniform language, generally uniform code of laws and universal application of these laws, and ample means for dissemination of information."

tion of information. We have skilled people in all fields of science, in government, in NGOs, and labor unions. Members of the public express their opinions regularly.

Our disadvantages are:

1. A dramatic imbalance in power among labor unions, NGOs, the public, the government, and industry;

2. A general failure in the medical-scientific establishment to apply its interests and capabilities to the areas of occupational and environmental health;

3. An over-reliance on the legal and judicial system -- rather than the legislative process -- to solve problems; and

4. An extraordinarily high cost of doing anything in occupational or environmental medicine because our technology is so highly developed that we have no simple solutions anymore; and the medical establishment has been isolated from the realities of the influences of work on health and health on work.

DISCUSSION:

Dr. Jerry Berke: Another problem we have in the U.S. is information pollution. Under the guise of balanced reporting, our media presents in a balanced fashion the words of Nobel-Prize winners along with those of members of the most ludicrous fringes. The result is our public is often thoroughly confused; not only doesn't it understand scientists, but the public isn't allowed to adequately evaluate the scientific approach to many problems.

Group Participant: Politicians should be properly informed with relevant information. If scientists have made calculations and developed a meaningful matrix, they may be satisfied in characterizing risk. They should not be the individuals deciding whether public money should be spent in reducing a risk and in what way the risk should be reduced. Elected officials must make these decisions, and they need to be informed. This type of mechanism must be developed in Central and Eastern Europe.

Dr. Teitelbaum: I would like to talk about the issue of investment and giving an environmental and health discount. For those of you who wish to see the most pathetic demonstration of the relationship between rich countries and poor countries, I would urge you to visit the maquiladoras on the Texas-Mexico border. There, large, powerful, very rich U.S. multinational corporations have exported jobs and pollution into an area of Mexico which has adequate environmental health regulations but does not enforce them. If you invite to your country a multinational corporation, your government should demand that it follow in your country the same regulations that it must follow in its own country. Your government does not have to put any further burden on the company than the company already faces in its own country. The company would still get a huge discount in labor costs and it would be able to comply with laws and regulations.

Another Participant: I strongly agree with Dr. Teitelbaum. The problems on our border with Mexico are a very good example of the imbalance of economic matters and health issues, with health thought of as way off in the future.

Restructuring Public Health Education

PRESENTED BY FERENC BOJAN AND MARK ROBSON

Restructuring public health education is a broad topic. We discussed three problems that are important public health needs that require some rather dramatic and serious education.

I asked my two colleagues from Hungary what approach they were taking for smoking. As you walk in the streets in Hungary, you see beautiful boys and girls 12 to 13 years old all of whom are smoking. Certainly the problem that we have in the United States is a little bit later. I also asked my two colleagues how they would talk about alcohol problems in young people and educate them about AIDS. These are three very important public health education issues.

"There also may be a need to establish a regional research institute ... Since environmental epidemiology, in our opinion, is in its infancy throughout the world, there may be a real opportunity in this region to take a world leadership position in this work."

LOOK AT BROAD ISSUES

When should public health education start? Hungarians are considering some laws that require a basic curriculum on public health, starting at a very early age. This would require hiring qualified teachers and paying for other resources.

At the other end of the spectrum, what do we do with physicians who have been in certain specialties or have been trained in a certain way when medical economics suddenly changes dramatically? How are they going to retool? How are they going to become more aware of public health? The U.S. model of health care does not provide answers. The U.S. has a shortage of primary care physicians. In the U.S., physicians are going into highly specialized areas, although they receive some encouragement to go into primary care on public health.

From the schools for young children to advanced training programs, how are we going to direct our training to public health issues? In Europe, public health does not offer a very high salary or much prestige. There is a social dimension to going into this field. There needs to be a rethinking about how best to encourage people to enter this field.

One cannot consider public health broadly to solve these problems because the field is so large and complex. Regulatory issues are involved, and social and economic issues.

GRASSROOTS NECESSARY

There must be grassroots participation in public health. It has to go beyond those of us who are working in the public health field. Decision-makers must be educated; probably the most important group of people for public health education is the politicians. We must educate people who are allocating resources because the resources are so limited. We can't say that just because we don't have much money we can't do anything.

As Hungarians establish a graduate school of public health, they are moving towards a very effective public health program. Initially, there will be 15 students in a masters of public health program. Public health is almost like missionary work.

Restructuring Public Health Research

PRESENTED BY MÁRIA VARGOVÁ AND BURT KROSS

We had members from Albania, Hungary, Poland, Lithuania, and the United States. We also had a group member from the Peace Corps in the Czech Republic. Public health research meant something different to everyone of us. We do not have common definitions and common understandings of what represents research.

There was a strong feeling of urgency about integrating and coordinating public health research activities in this region so that unnecessary duplication does not occur. It costs much money to perform research. There is greater encouragement now to publish research information in scientific journals. Perhaps we should not launch new research efforts, but take some time to publish work that already has been done so that it can be shared with the scientific community.

CONTINUE INFORMATION EXCHANGE

Further information exchange meetings like this one are a mechanism that should be continued and encouraged. In addition to the formal sessions we have had, there has been much exchange of specific research information in informal conversations.

The disciplines of environmental science and environmental health are relatively new in the scientific community. The need for scientific method development in these disciplines remains important.

Some of our group members suggested that in Central and Eastern Europe restructuring of public health research should include competition for research funding. There should no longer be a "scientific mafia" approach to awarding research funds. In the U.S. and several other countries, the concept of peer review is used. Scientific peer review of research proposals means that reviews of proposals are conducted by groups of scientists who are independent from the groups of individuals who are awarded research funds. So there is a scientific evaluation, and a financial award for the work to be done.

REGIONAL INSTITUTE DISCUSSED

There also may be a need to establish a regional research institute in Central and Eastern Europe. Environmental epidemiology might be the common thread needed to bring together the ministries of health and the ministries of environment into a common research focus that is critical and important for the advancement of science. Since environmental epidemiology, in our opinion, is in its infancy throughout the world, there may be a real opportunity in this region to take a world leadership position in this work.

We feel epidemiology is an opportunity to bring together a scientific research pursuit and a blending of disciplines focused on health effects that are being evluated by clinicians, such as cancer, birth defects, respiratory disease, and neurologic dysfunction. Environmental epidemiology also requires environmental exposure assessment, work in which specialists in engineering professions, such as industrial hygienists, join with health professionals to define sources of exposure and assess its nature and magnitude. In addition, environmental epidemiology brings together workers, NGOs, and the public at large.

Important areas of work include: agricultural safety and health, translating research findings into prevention and communicating conclusions to scientists and the public, and promoting closer interaction with social scientists.

"We discussed the problem of setting realistic or realizable objectives. Some argued that there were no ready-made formulas or models for change ... that there is no easy moving of a model from one place to another."

Building Political Coalitions

PRESENTED BY CHARLES LEVENSTEIN

This group included representatives from Poland, the Ukraine, Hungary, Denmark, the U.S., and England. We started out with an initial difficulty: What did we mean by political? In each country, political meant something different and we never really defined it, but we certainly had difficulty with it. There were references to each of the Eastern European and Central European countries. Here are some of the approaches that we discussed.

We visualized an "umbrella" organization (although the rain came through). Western advisors have encouraged Central and Eastern European NGOs to form umbrella organizations because we have umbrella organizations in the West. But umbrella organizations in the West have taken 30 years to create. They could quickly be created in Central and Eastern Europe and it quickly did not work. So this is an example of the dangers in simply importing or exporting methods from one region to another with a completely different history. On the other hand, it is very difficult to achieve national coordination when the groups are fragmented and dealing with many different kinds of issues. Mass demonstrations were described in the Ukraine and then we also talked about "bottom-up" approaches.

BOTTOM-UP APPROACHES

Pressing for laws in legislatures was one bottom-up approach. We discussed interest groups pressing for specific concerns. Other bottom-up approaches involved looking to communities and ordinary citizens for support and action.

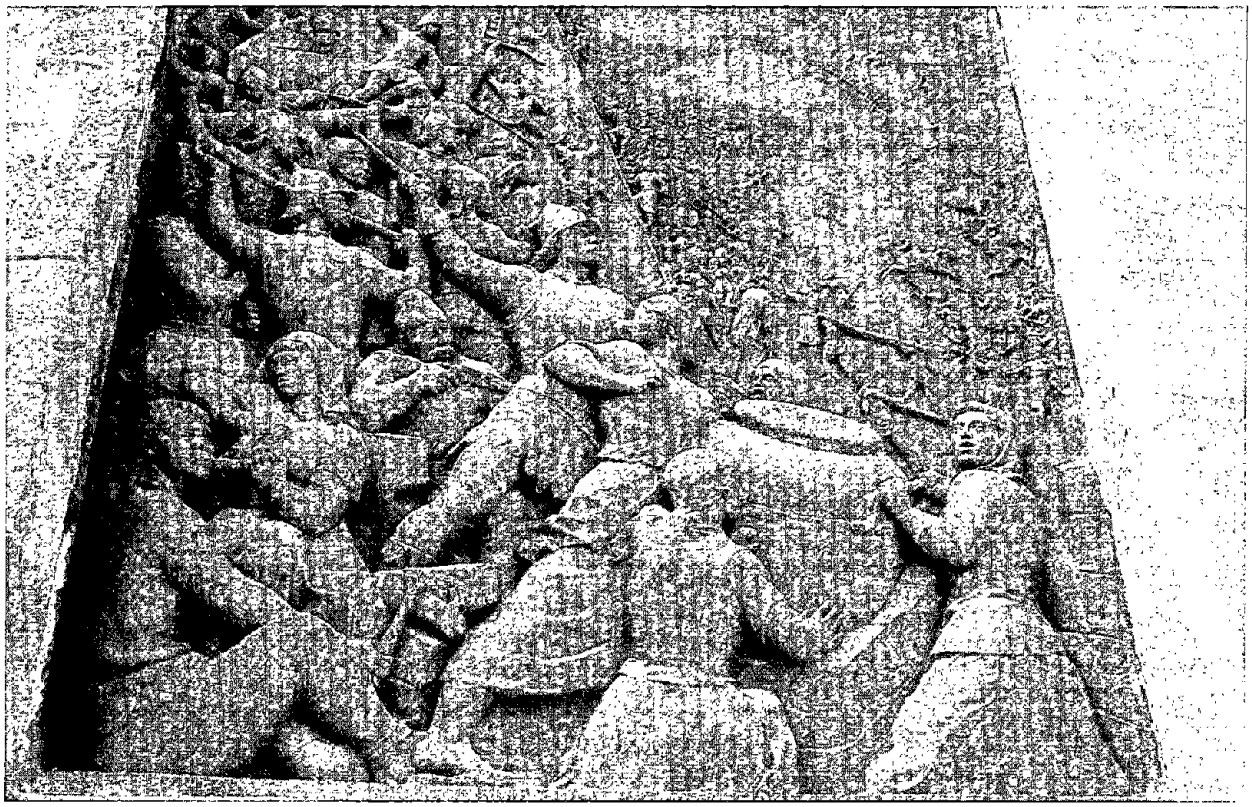
There was a discussion of separate environmental parties political opportunities around green issues -- that is, in which people used environmental issues for political advancement, although they were not sincerely committed to the environmental principles. And then also the idea of raising issues within political parties. The issues that emerged then were issues of power and politics; issues of democracy, building coalitions to function in democracy, and the tensions between jobs and the environment, which are quite considerable in Central and Eastern Europe.

Funding for the organizations themselves is a serious issue partly because of the financial situation, partly because this is a problem everywhere. There was much talk of education, freedom of access to information, translation of information, and effective ways to deal with diverse political backgrounds and coalitions.

LOCAL ACTION

There was some discussion of local action and local issues as an approach, rather than taking on national issues. We discussed the problem of setting realistic or realizable objectives. Some argued that there were no ready-made formulas or models for change and, in particular, that there is no easy moving of a model from one place to another. And finally, we discussed ways forward. Perhaps the most effective approaches must include exchanges of information among Eastern and Central Europe, Western Europe, the U.S., and North America. We agreed to learn from each other since we were struggling and scrambling, each in a different context, but not with many really great answers.

V. Building A Common Agenda



This bas relief is mounted on a building facade in Eger.

Environment, Work, and Health: A Current Perspective for the Future

ISTVÁN ÖRI AND ZSUZSANNA FÜZESI

At this symposium, we have been discussing various aspects of environmental and occupational health and their influence on peoples' health, as we have done at similar sessions in three previous years. Notably, we have discussed our belief that the changeover to a market economy would automatically result in better awareness of and concern for both environmental protection and human health.

Priority is being given now to economic development, a force for modernization. There are no alternatives. Whether these societies are following the appropriate route for restructuring their economies is a matter of controversy. Should we do what other countries with different historical and economic backgrounds have done by developing their economies at enormous cost to the state of the environment and the health of their people? In developed countries, although the environment was greatly damaged, the countries were rich enough to attempt to restore it. The nations of Central and Eastern Europe should understand that there is nothing left to be stolen and there is no possibility to restore the consequences of any further damage, even in the long run. And we do not need to be reminded of the tragedy of shortened lives due to occupational and environmental diseases.

"Should we do what other countries with different historical and economic backgrounds have done by developing their economies at enormous cost to the state of the environment and the health of their people?... Central and Eastern Europe should understand that there is nothing left to be stolen and there is no possibility to restore the consequences of any further damage, even in the long run."

SEEKING PARTNERS

Who can be partners in establishing politics and policies that are more conscious of both the environment and the people? Political leaders are under pressure to prove that positive changes in society, especially those that encourage economic development, have begun. Neither

the protection of the environment nor the protection of workers is stressed when the concern is for economic growth, jobs, and the building of a consumer society.

The participants in the economy — the new owners and entrepreneurs — have an interest in getting short-term profit, and anything that hinders profit is considered undesirable.

Organizations that protect the interests of workers and the environment are struggling for survival. And they have to find new goals. Instead of fighting for healthy workplaces, they are fighting to create jobs — any jobs.

Although, theoretically, the protection of the environment is important for citizens, their everyday lives are not governed by these principles. They are not too eager to support extensive protection of the environment. They do not generally support or understand the activities of green movements. Therefore, the kind of social base that could give real political power to the green movement against those who have political and economic power is missing. One of the reasons for this is that the people, due to lack of sufficient knowledge, do not know the long-term effects of environmental damage because there is no causal relation that is obvious to them between such damage and its health effects.

PROTECTION AVAILABLE FOR WORKERS

For workers, the situation is different since most occupational injuries with immediate effects are well recognized and the long-term impact of occupational disease is obvious in certain jobs, even if these jobs prevent serious risk of injuries or illness. We think, however, that the chances of protecting the health of workers are better than the chances of protecting the environment. Workers acting alone may not be strong enough to prevent abuses from the health effects of work, but they may be able to do so if they join a labor union. This strategy, however, is not available to protect the environment.

Can governmental organizations that deal with protecting the environment and health help? The answer is yes, if the present political power relations do not influence professional decisions and if the institutions professionally responsible never accept the current fashionable slogan: "The changeover to a market economy demands victims." We ask whether it is necessary to victimize the social and natural environment — to do so unequally within society?

As a result of the politics of the last 40 years and the distorted progress of industrial development, both the state of the environment and the health status of the Hungarian people look very poor. Three years after the election, the government has no satisfactory green politics or strategy, no well-functioning institutional system, and its responsibilities concerning environment, work, and health are split among several ministries. The reorganization of governmental institutions has not been effective and official consulting institutes have been seriously weakened.

> **"The kind of social base that could give real political power to the green movement against those who have political and economic power is missing ... the people, due to lack of sufficient knowledge, do not know the long-term effects of environmental damage because there is no causal relation that is obvious to them ... "**

'SHOP-WINDOW' EXPERTS

Heads of institutions are political appointees. These "shop-window" experts represent the third or fourth level of professional expertise and, therefore, lower the effectiveness of the institutions. With these circumstances and with the lobbies for industrialization and privatization, the interests of environmental and occupational health cannot prevail. Data on the quality of the environmental health status of workers and of communities are controlled by different government agencies. Research on environmental health is not coordinated and decision-makers are not informed about the links between the pollution of the environment and the health of people. For these reasons, the decision-makers cannot decide on appropriate policies because they are not sure whether their actions will bring about the results expected by the public. On the one hand, leaders want to keep their political popularity. But on the other hand, most important professional jobs have been changed to political jobs, so policies and actions remain only ideas. In addition, environmental health will suffer when our national system of company physicians is eliminated — a victim of privatization.

Society is threatened by the nightmare of unemployment, so workers are forced to accept occupationally unsafe workplaces. Workers have an ambivalent attitude concerning the threat to their jobs and the threat to their health. At the same time, as members of communities, they sometimes protest against environmental pollution — they cannot accept environmental health problems caused by the same technology to which they were exposed as workers.

STRONG STANDARDS, WEAK ENFORCEMENT

The old laws concerning environmental and occupational health should have been replaced or renewed. However, that has not happened. So we still work on the basis of the old laws, but in a rather different political and economic situation than existed before. On the one hand, we have rather stringent and up-to-date threshold limit values and standards, but on the other, we have weak enforcement, as reflected in environmental and health data.

Communications within the government and between the government and non-governmental organizations (NGOs) and other groups or associations are now rather weak. However, we believe they should be strengthened and serve as an appropriate control against state power. Environmental protection and environmental and occupational health politics and policies did not follow the radical social and political restructuring that has taken place. In these areas, the public currently has no legal right to participate in the democratic decision-making process and

citizens do not know what rights and obligations they have.

Concerning environmental protection, before the changes in the political system, the green movements were the real political opposition, emerging with the help of environmental protection protest and movements. In many cases, professional expertise and arguments were used to object to the official viewpoint and central power. Society was then clearly disappointed with the state bureaucracy as well as the experts of the state. The results of investigations carried out by experts working for independent (or supposedly independent) institutions were not usually accepted by the public. By the time of political change in 1990, the "not-in-my-backyard" tendency of society had already developed because the public had been repeatedly betrayed by former and current government leaders.

DEFINE THE LINKS

Therefore, another communication method is needed today, a method that builds on an understanding of sociology, community psychology, and the special approach of public relations in the management of environmental projects. What this means is defining the links between environmental and occupational health and the wider interests of society. In particular, we must remove the tension between environmental protection and the fear of job loss. The welfare of our people requires that we address these issues. The solution to this problem is the most important and urgent task of this and future governments.

The argument that environmental consciousness has not been developed in the nations in our region is unacceptable. This argument strengthens and reinforces the inactivity of the public and allows the government to refer responsibility for the lack of environmental protection back to the public.

In Western democracies, the state provides overall ethical, legal, and financial support to society, involving the public in decision-making processes. In Hungary and the other former socialist countries of this region, the NGOs usually have financial support from the government as well as from international organizations and foundations, but their power is not used effectively. Frequently, in environmental health, the activities of the NGOs and the programs and policies of government are not reconciled, and the public is not involved in decision-making. Environmental health strategies should be developed by interaction between the national government and the public, represented by NGOs and local municipalities.

In Hungary, the new Act of the Environment has produced poor results — a useless mix of American laws and European Union (EU) directives. The society, however, needs new laws because many important environmental problems are not now subject to regulation, and the state of the environment and of public health will worsen.

The continuous restructuring of industry seems to harm the environment. In Hungary, in the last three years, about 100,000 new enterprises have been established, with only the permis-

sion of the Court of Registration and, in most cases, without any environmental or occupational health authorization. The workers and the municipalities fear unemployment, so they are not interested in protecting the environment and making workplaces safe and healthful. Local governments sometimes accept polluting plants in their areas, providing tax incentives to encourage investment in such plants in order to create jobs but such a policy often increases occupational disease and injury as well as environmental degradation.

IMPORTING HAZARDS

Outdated technologies from the West frequently are imported by Central and Eastern European countries, often in the form of unselfish assistance. However, these technologies usually are not approved by the environmental or occupational health authorities of the donor countries. This import of hazard is an issue that we must bring to the attention of Western nations, which are conscientious in applying legislation inside their own countries, but often indifferent to the consequences of exporting unsafe technologies elsewhere. Therefore, we need to have very stringent laws and standards and, at the same time, ensure neutrality and prevent unfair competition, especially within the domestic market economy.

Strict regulation often appears to the public as a disincentive to economic development — a problem because the public sometimes confuses democracy and freedom with uncontrolled behavior and action. We recommend that our economic and social systems be managed by a combination of incentives and disincentives so that economic development can be tempered by a commitment to protection of the environment and the provision of safe and healthful workplaces.

Many experts on the development of decision-making processes, policies, and strategies represent a kind of official opposition opinion on environmental and occupational health. They could help develop a new "green industrial development model" for use in restructuring the economy. In contrast, copying the Western model of the last 40 years would lead us to environmental colonization and a further decrease in the environment and the health of the people.

What modern principles should be used in developing and using this model?

- The principle of integrated pollution control laid down by EU directives;
- The use and application of risk assessment techniques;
- The creation of a right-to-know and free access to information;
- An environmental review process, including public participation in new projects and in authorization of investments; and
- Use of environmental impact assessments, including social and economic investigations and cost-benefit analyses.

A GUIDING PRINCIPLE

In developing new laws and regulations, in order to avoid over-regulation, we should apply the principle of "Everything is allowed which is not prohibited," instead of the former legal principle of "Everything is prohibited which is not allowed."

In restructuring hygiene, joint management of environmental and occupational health should be encouraged. We should unify our control of technology. Short- and long-term interests must be reconciled. The use of clean, modern, energy-saving, and waste-saving technologies is necessary for safe and healthful workplaces and a cleaner environment. We should outdate "end-of-the-pipe" forms of environmental protection, and stress the principles of prevention. War is much too serious a matter to entrust to soldiers; environmental and occupational health is too serious a matter to be entrusted to physicians. We need an independent organization dealing with environmental protection and environmental health, in close relationship with the occupational health service and supported by research institutes. At the same time, we should be careful that the "public health baby" not be poured down the drain with the "bath-water" of Stalinism.

"Society is threatened by the nightmare of unemployment, so workers are forced to accept occupationally unsafe workplaces. Workers have an ambivalent attitude concerning the threat to their jobs and the threat to their health."

Environmental education is a very important and effective means of prevention. Environmental education should be part of the National Program of Instruction from kindergarten to universities. In addition to postgraduate courses on technical aspects of environmental protection, special physician training in environmental health should be improved. A legislative basis for workers' training in health and safety also should be established.

"Many experts dealing with the development of decision-making process and policies ... could help develop a new 'green industrial development model' for use in restructuring the economy."

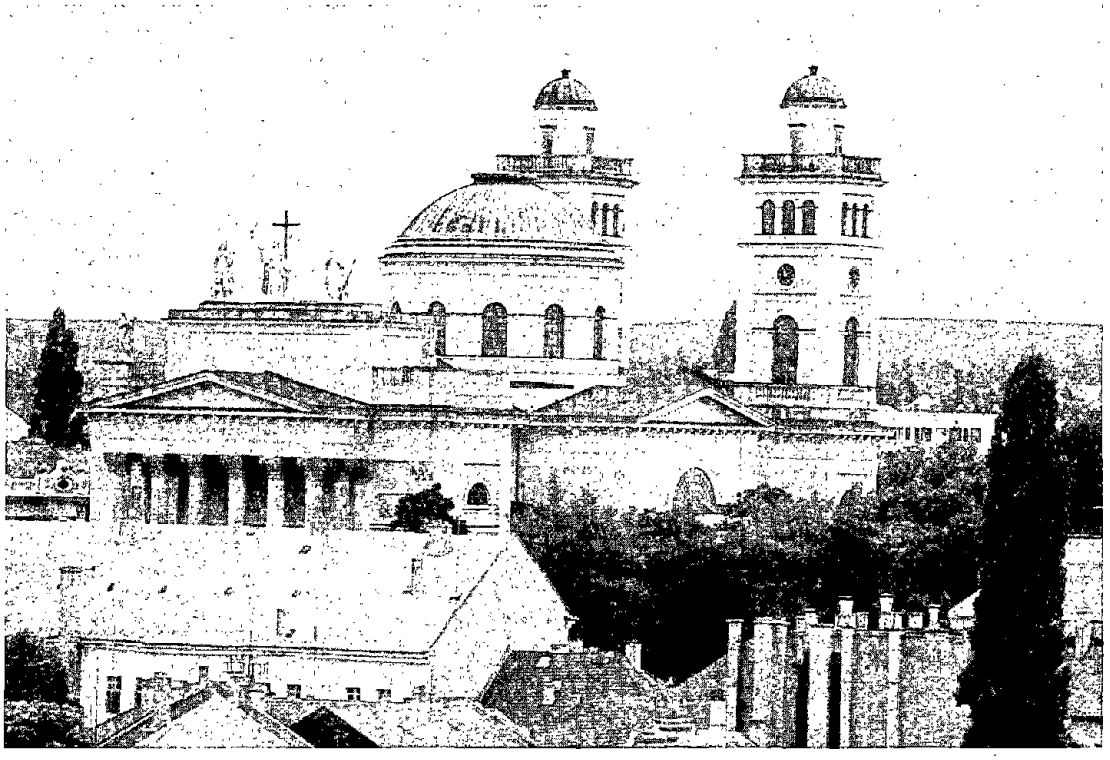
KEEPING OUR IDENTITY

In Hungary, we are trying to adapt to EU regulations and directives and to the practices of Western European countries, primarily those of Germany, Switzerland, and the Netherlands. Application and enforcement of these stringent laws should assure the opportunity for sustainable and environmentally friendly development, which, we believe, is the only way to a successful economy and, in the long run, to a safe and healthy

society. We should, however, keep our economic and social identity. When the transition to a market economy is complete in Hungary, future governments should reconcile the expectations of society and the potential, determined by the real economic and social situation, for environmental protection as well as environmental and occupational health.

We view the chances of improving occupational and environmental health rather pessimistically in the short run. However, we believe that if citizens and workers and their organizations know more about the issues of environmental and occupational health and the significance of these issues, they will be able to put greater pressure on political and social leaders at all levels as well as the owners and managers of plants.

We are trying to apply our belief in practice by organizing courses, such as "Hazardous Material Safety Training Train-the-Trainers," that was presented in partnership with some of our American friends last week, and by organizing conferences such as this annual symposium, and other projects that link environmental and occupational health, and by working in other ways to create a better, healthier, and more humane society.



The Main Cathedral dominates the skyline in a neighborhood of Eger.

Peace and Social Justice

MAJA MASTROVIC

The economic situation in Croatia during the last few years has been strongly influenced by war circumstances. In practice, this means economic and social crisis, followed by inflation, unemployment, and general impoverishment.

"The civilization of violence in which we live offers no space for elementary values. If we give ourselves a task to talk about war and then about peace, we shall soon conclude that we can talk endlessly about war ... about which we have a lot of written evidence and references. However, talking about peace ... will be extremely difficult and we will soon be speechless. Why? Because we know and think so little about peace."

Most of the population, especially those who have lost their family or their belongings, are experiencing a state of non-peace and non-justice. It is good to have an opportunity to say a few things about peace and social justice.

Peace, as we at the Society for the Improvement of the Quality of Life understand it, has to be established as a productive activity, as an aimed product. However, the Croatian government looks at peace as a system of regulations or as a factor of security rather than as an ethical teacher. But peace as a factor of security includes the question of self-defense. The need for self-defense suggests insecurity, which results in aggression. Therefore, peace as a factor of security is impossible to preserve. From a contractual peace, it has to develop into a lifestyle or a permanent attitude of man.

MAKE PEACE A TREND

The production of peace means: to understand what peace is (or we can say non-violence); how to define it for different social groups, how to "pack" it and thus follow the needs of potential consumers and make it a trend — this should not be a problem since this civilization has developed marketing to very high levels.

Social justice, likewise, cannot be established through legislation since it gives way to similar weaknesses like peace maintenance and also because it has not been implanted in an

individual as his elementary value in life. The question of social justice is a question of the culture of non-violence, tolerance, and peace.

The civilization of violence in which we live offers no space for elementary values. If we give ourselves a task to talk about war and then about peace, we shall soon conclude that we can talk endlessly about war (about hatred, blood, crimes, sufferings, and so forth) about which we have a lot of written evidence and references. However, talking about peace, after our initial declaration, will be extremely difficult and we will soon be speechless. Why? Because we know and think so little about peace.

Therefore, it is very important to stimulate civil initiatives which overcome political and national classification. It is necessary also to stimulate all activities which aim to take care of things of general interest, such as environmental protection, thereby establishing the security mechanisms in man.

Ethics, for example, regulated by religious and legislative systems, acts at the level of so-called motivated awareness rather than spontaneous reaction which at its basis is completely unharmful. Motivated awareness may and may not have a long-term positive impact because, in the moment it ceases to exist, our ethical ideals crumble.

BALANCE SECURITY MECHANISMS

Since this "sublime" goal (spontaneous positiveness) is difficult to attain, that is, it is difficult to reach this ideal state of awareness, one has to create and balance all recognizable security mechanisms — civil, legislative, religious, and scientific rather than favor one or the other. Man's right to salary, family, and also survival and peace cannot be left to the will of a single politician but must be arranged according to the mechanisms of the community, which do not deprive man of human dignity. Therefore, some basic problems have to be mentioned which, so far, have not been fulfilled satisfactorily:

1. The right to health insurance — It must be available not only as a service but also as an education; not only in the struggle against disease, but also against the conditions which are the cause of disease.

2. The right to education — It is not enough to enable/educate a man for carrying out different tasks/jobs but we also must provide permanent education on how to live.

3. The right to work (employment, choice of vocation) — The goal is not to develop man's dependence on his employer but to enable him to be self-sufficient and to produce all of the conditions for himself and his family's life through his own initiative. One has to receive education and become competent to perform different jobs rather than to specialize in only one (this is primarily important for the handicapped).

Working conditions and work itself have to be arranged in a way to support the integrity of the worker's physical and psychic potential and not to drain out his energy. Further, the worker has to be the goal of investment rather than being used as an investment himself or herself.

4. The right to a retirement allowance — The ex-socialist/communist countries had the system of a retirement allowance only formally arranged. The possibility to invest in one's future and to influence the quantity of funds with which one might dispose in retirement was extremely limited. Namely, the amount of allowance was estimated according to an imaginary average while the individual input in common resources of the community had not been supervised. It is difficult to believe that this has been respected in the countries of the capitalist system either.

5. The right to family — The elementary right to biological reproduction has become a project of state importance. In that way, the responsibility of all the entities within a family is not taken as a serious and important factor but is left to the general interests. One's personal interest for family is crumbled at the very beginning due to the interest of the state and the community.

Therefore, a community with an already established system of family support should not carry out this right through the principle of the lowest common denominator but rather recognize family as the strongest social institution with perhaps the longest tradition in the history of mankind.

The concept of family is something that cannot be dealt with on a formal governmental level. Family has to perform as a guarantor of society. The state must find an interest to invest in family.

6. The right to freedom of thinking — If we start with the hypothesis that within a social model certain changes are inevitable and that these changes will consequently influence the change of the model itself, it is absurd to limit freedom of thinking because a dictatorship has never stopped a process which has come out as a result of the collective thinking of an entire community.

Repression, which is the product of certain legislative systems, can only in one moment perform as protection, but in the next, control disappears and it becomes counterproductive and overthrows the system that created it.

What man should do is to go back to the elementary ethics which would ensure the security of the whole community and enable pluralism of ideas and thinking. However, the process is gradual and a system of regulations should be used to loosen restrictions while simultaneously creating and educating an individual to become a positive entity of a community.

7. The right to a healthy environment — This right can be observed through two categories: man as a victim, man as a criminal. The result of this inevitable division is, unfortu-

nately, a reflection of the weakness to overcome this almost schizophrenic situation and to find a productive and constructive solution to the problem.

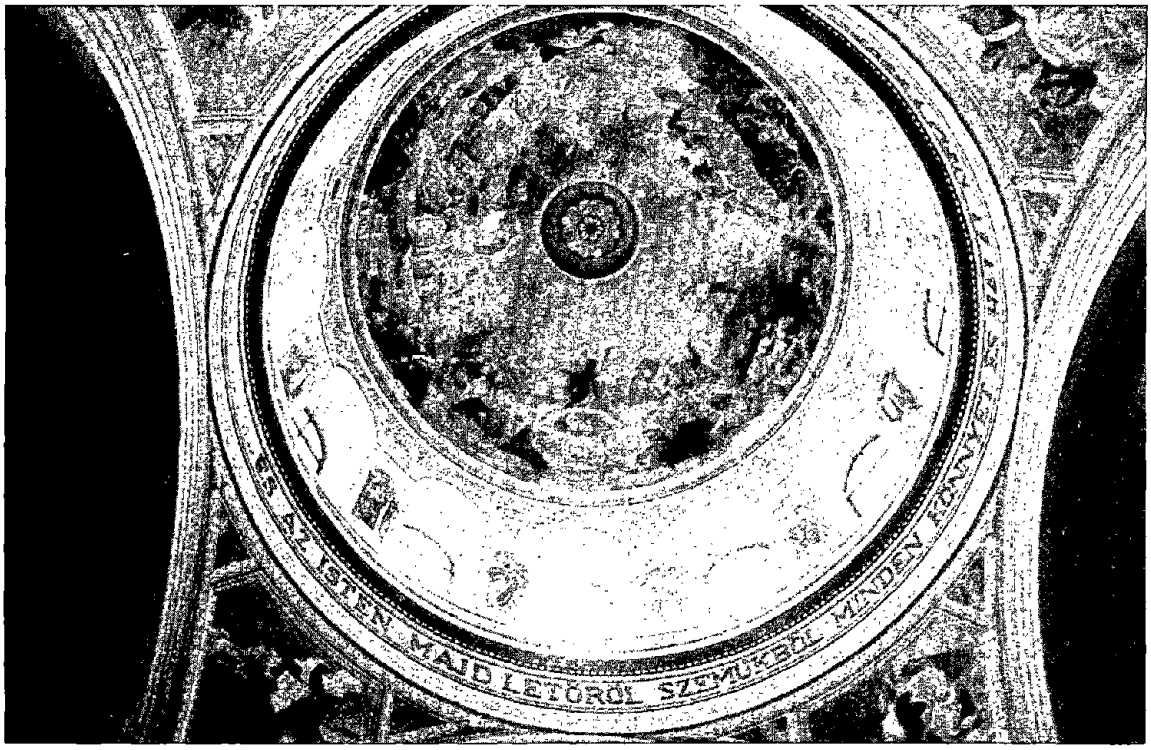
THE QUESTION OF SURVIVAL

The question of a healthy environment also raises the question of survival. It is one of global importance and we can see that changes occur regarding man's relation to this biotopos. Just recently, one thought of oneself as an inhabitant of one's street, then one's village, one's town, country, continent, and now finally realizes that one is an inhabitant of planet Earth.

Whether such change of consciousness is something positive or negative we shall realize only after we have solved the problem. Until that moment, we have to engage all our positive efforts. So far, the only visible solution is through legislation.

What is most important, first of all, is the education and protection of human rights, including the right to a healthy biotopos.

Therefore, the imposition of peace as a condition of survival can be counterproductive since it can create animosity in those whose consciousness is still not at that level, and that would again violate peace. Non-violence as a lifestyle has to be given a priority position and we must create such circumstances as will allow the production of peace as a permanent attitude of man.



Painting adorns church dome in Eger.

A Vision for the Future

CHARLES LEVENSTEIN

Over the last four years in which we have been holding our meetings, I have learned much about the problems that Central and Eastern Europe have been facing. I am hesitant to talk about a "vision" of the future when I feel that the best that we can do and, in fact, are doing, is to engage with one another in a discussion of our experiences in the West, and in Central and Eastern Europe, to see if we face similar problems, even if we have different histories. Can we share the development of common approaches to resolving our problems with modern technology?

" ... after our discussions of science and policy, we have returned to ethics and to a concern with basic principles: the right to protection, the right to peace, the right to social justice. The right to very simple things that turn out to be enormously complex. The right to a clean environment. The right to creative work. These are such basic ideas and everyone of us in this room believes in them. And everyone of us knows how complex it is to achieve these goals in our societies."

I want to tell you how grateful the conference participants from the United States and Western Europe are to have your participation, to have your attention, to have your willingness to expose your differences and your weaknesses.

THE BASIS FOR NEW SOLUTIONS

We appreciate the courage that you have demonstrated, including your willingness to show us your fights and your seamy sides. Your courage and professional openness have revealed to us the problems of greatest concern: this is the basis on which we can seek new solutions.

I know that many people in Central and Eastern Europe are sick of visions of the future and sick of social experiments and sick of great ideas that turn out in existence, in reality, to be shabby or to be unrealizeable except in poetry, but not in real experience.

In the world, there are many competing visions that include utopian ends. This conference started out with a useful antidote to that kind of thinking. It started out with a discussion of public health ethics, and a discussion on economy. In this last session of our meetings, after our discussions of science and policy, we have returned to ethics and to a concern with basic principles: the right to protection, the right to peace, the right to social justice. The right to very simple things that turn out to be enormously complex. The right to a clean environment. The right to creative work. These are such basic ideas and everyone of us in this room believes in

"We see in Central and Eastern Europe the great disillusionment that humans could assert control, that with the dream of utopian solutions they could make the world the way they wanted it to be. We have had an enormous disappointment and it is making us cynical. How do we approach the recreation of a civil society and a decent world with a humane environment?"

them. And everyone of us knows how complex it is to achieve these goals in our societies.

We must deal with real political structures, the real bureaucracies, the real constraints of economy and the real desires and craziness of consumer society. How difficult it is to actually seek "solutions."

PRINCIPLES AND CONSTRAINTS

The principles that drive us are universal principles. But we face a world of constraints, a world of politics, a world of economics, and a world of cruelty. In Central and Eastern Europe, you are engaged in the construction of a civil society which implies social angst. This notion of a civil society is not simply a new kind of politics but a reconstruction of a deeply moral problem. The problem of mistrust — the fundamental mistrust which came up the first night of our own meetings.

We asked, who does the citizen and the worker trust any more? They don't trust the scientist. They don't trust the government. They don't trust the parties. They don't trust the trade unions. They don't trust each other. All of the fragmentation, atomization, all of the solitariness of modern, technological society is what we confront. We see in Central and Eastern Europe the great disillusionment that humans could assert control, that with the dream of utopian solutions they could make the world the way they wanted it to be. We have had an enormous disappointment and it is making us cynical.

How do we approach the recreation of a civil society and a decent world with a humane environment?

CIVIL AND MORAL SOCIETY

We have to reconstruct not merely a civil society, but a moral one. And there's only one way to discover it and that is by conversation. We discover it through our interactions with one

another, our efforts to solve problems together, our talking with one another, our fighting with one another.

Our vision may simply be a set of principles which we take with us as we go from situation to situation and say, look, people want simple things. People want community, they want income, they have to eat, they have to work, they want to shape their world. They want to feel as though they are valuable. These are the things that inform our conversation and our struggle as we go from day to day. We have to question the use of bureaucracy and the state or mass organizations. But we don't have to kill each other in that process.

We can engage one another but we must do it with mercy. I am not saying that there are no sharp political differences. That's good. But we must dispute politics with tolerance and with the notion that we are creating a new future.

What we found out in 1990 at our first conference was that there were a variety of organizations and institutions already committed to environmental and occupational health. But we were most impressed with the lack of connection among these institutions, and the lack of communication among them. Information did not flow through a network of scientific, public health, labor, and citizen organizations.

SOCIAL SYSTEM UNDERDEVELOPED

This is a fundamental problem because our modern world includes incredibly complex technologies, getting more and more complex, frequently getting more and more hazardous. Next to this stands an underdeveloped social system, one that cannot handle that kind of complexity.

So what we do here is very important. Your willingess to talk with one another becomes an experiment of a new sort. It is actually creating by **doing**: Creating new social and technical networks. Now, that's not a vision. But it does bring together scientists, governmental institutions and the NGOs, the citizens, the workers, to begin to talk to each other in concrete ways about concrete problems. The solutions that emerge will reflect the universal principles that we all adhere to, as well as our knowledge of a harsh world of technology and economy. That's a real accomplishment.

VI. Appendix: List of Participants

Most of the participants in the Eger conference.

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A pregnant worker performs quality control in a glass factory.