September 1998 (Volume 39, Number 3)

**Organization of Health Care in Croatia: Needs and Priorities**

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**Aim.** Description and analysis of the present situation of health care system in Croatia, and its characteristics in the transitional process of restructuring.

**Methods.** A descriptive method was used. The data from the regular statistical publications were used for the analysis.

**Results.** Croatia is faced with problems similar to those in other countries of the Central and Eastern Europe (CEE), such as control of health expenditure, balancing the development of different segments of health care services, stabilization of effectiveness and quality of care, transition from one-party system to pluralistic democracy, introduction of a free market economy, war devastations, etc. On the other hand, the Croatian experience in the development of a decentralized and integrated primary health care, decentralized health insurance system, education of general/family practitioners, and a tradition in the implementation and development of public health measures, have facilitated and contributed positively to the whole process of transition.

**Conclusion.** In contrast to the economic difficulties, war devastations, and changing the social system, the Croatian health care system proved its stability and sustainability. The highest priority and needs are now related to coping with unhealthy behavior of the population, such as smoking, accidents, physical inactivity, and nutritional problems, which should be solved and controlled by the implementation of preventive programs, organization and management of public health services, and further focusing onto the integrated type of primary health care in the organization of services. Hospital services need more intensive and skilled management, as well as support measures for better quality of work.

**Key words:** assessment of health care needs; death rate; Croatia; health care economics and organizations; morbidity; public health; vaccination; war

The position of public services has changed over the last 15-20 years as the consequence of recession in the world economy. Most countries presently treat these services as public expenditure, the cost of which has to be reduced using measures one could not have even imagined before (1). Consequently, the conflict between the interest of an individual patient and the population is greater now than it has ever been. For instance, the acceptance or rejection of an individual for chronic hemodialysis, apparently determined by clinical indications, in fact reflects the availability of places although this reason was not acknowledged, even by the clinician who made the decision (2).

Is the healthcare system ill? Is the economy the cause or the symptom of a disease in the healthcare system? These questions will be approached by giving an example. If a patient has a headache, and a physician treats it with a pain killer, he/her may waste the time during which the brain tumor, causing the headache, can be cured, and when he/she finally realizes it, it may be too late. The headache is obviously only a symptom. In medicine, only if the cause is known, the disease can be cured, and sometimes not even then (AIDS, for instance).

What is a headache in a healthcare system? What is its cause? The present headache consists of uncontrolled costs or, according to Fuchs (3), the fact that the health sector’s share of gross national product (GNP) is larger every year because health expenditure is growing faster than GNP itself. Nevertheless, this is only a headache (the symptom).

What is the real cause? Health reforms, now under way in almost every country of Western Europe, North America, and Central and Eastern European Countries are not progressing without difficulties and their success is quite modest in terms of savings and efficiency. In fact (Fig. 1): (a) reformers know very well where they are (they have a headache); (b) they probably know (but not so well) where they want to go; (c) they do not know at all how to get there; (d) the main reason lies in not including professionals (health system experts) into the process (4).

Figure  The roots of health care reform. [view this figure]
What will be the cure? The cure suggested (cost containment and better efficiency of health care) is focused on the symptom. One of the first ideas was to introduce cost-sharing, with no intention in the beginning to collect considerable amounts of money but to make both patients and doctors aware that particular services provided costs, that someone had to pay for it (5).

The first experiences confirmed the fact that modest cost-sharing could not collect an accountable proportion of health resources. Higher amounts are expected to rationalize the consumption but they actually only discourage the users, whereas for some services, the patients should be encouraged. We would like, for instance, to spend more on antihypertensive drugs and contraceptive pills, although we would like to reduce drug consumption in general. Higher co-payment will also be the problem for unhealthy population, especially in the cases of a life-long disease or disability. It is easy to pay a certain amount of money once a year, but every week even a small amount may be a problem.

This leads to the issue of equity. Equity has always been “the big title” and it has always been “very important” but not always properly understood. If an analogy with the diet of the population is made, and if it is accepted that equal distribution of food is not a prerequisite to exclude starvation, we will realize that the lowest level is of crucial importance. If this level satisfies the basic needs, all differences above it are acceptable. However, a recent analysis has shown the importance of equity for health at all levels of wealth (6).

**Tradition of Health Care in Europe**

As a part of Europe, Croatia has been faced with many problems, similar to those in other countries, like control of health expenditure, balancing the development of different segments of health care services, and increasing effectiveness and quality of care. However, Croatia has also been faced with the problems of transition: from one party-system to pluralistic democracy, from controlled to freemarket economy, from “social” to private and state ownership of health care facilities, lower income of citizens, etc. On the other hand, the Croatian experience in the development of a decentralized and integrated primary health care, decentralized health insurance system, education of general/family practitioners, a tradition of public health (from A. Štampar’s time), participation of the Croatian health experts in the international health through World Health Organization and other agencies, have all facilitated and contributed positively to the whole process of transition.

Health insurance and the employer’s responsibility for health are a part of the tradition and behavior. Sickness fund for miners and their family members was introduced in 1854 in Slavonia and Croatia, administratively governed by Hungary at that time (7). In Dalmatia, the Croatian region under the Austrian administration at the time, there had been a mandatory health insurance since 1888. It covered industrial workers, craftsmen and salesmen, as well as sailors later on. After the World War I, Croatia, as a part of Yugoslavia, continued with the insurance system since 1917. The new law in 1922 was considered one of the best in the world at that time (7). It was based on the principles of solidarity and universal coverage as mandatory health insurance. After the World War II, this tradition continued with laws from 1946 (Social Insurance Act), 1950, 1970, and 1980 (Health Care and Health Insurance Acts) (7). After the independence in 1990, health insurance was reorganized in 1991 and 1993, but the basic principles of universal coverage and solidarity were preserved. The new legislation introduced two additional possibilities: additional voluntary insurance for risks not covered by mandatory insurance and complete voluntary insurance for those citizens whose income exceeds a certain limit declared by the Ministry of Health (8).

Health services developed parallelly with the development of different insurance schemes. Although some cities and municipalities had medical services paid by the municipality or city government providing them free of charge for the citizens, most of the medical services during the last century and even until the World War II were of a private type. During the twenties and thirties, Andrija Štampar introduced public medical and hygienic services with the aim to control the most frequent and the most important health and social hazards for the national health, such as infant deaths, alcoholism, tuberculosis, trachoma, malaria, poverty, etc. Medical doctors, nurses, and other staff were paid by the government and their work was free of charge for citizens and patients. After the World War II, most of the services were nationalized, becoming national public health services. However, a small number of physicians and other medical personnel remained to work as private services with a direct payment from private patients. In the public health services on the primary level of health care, the type of integrated health institution was established, named “Dom zdravlja” (literally meaning “Home of Health”, i.e., Health Center), with the general practitioners (GP) as the key persons. The health visitor was the member of the GP team. As a rule, a Health Center corresponded to one
administrative unit (municipality). At the secondary level of care, there were hospitals of different types with specialist outpatient units, also as a part of public health services. During the sixties, an integrated type of health organization in the middle sized municipalities and cities named “medicinski centar” (Medical Center) was established. A medical center integrated health centers, hospital and sanitary hygienic services in a respective administrative unit (municipality or city). That type of institutions was preserved until the nineties, when the three types of services were disintegrated again.

In the present process of privatization, the role of health center has been gradually decreasing. Primary health care (meaning family physicians, outpatient pediatricians, dentists, etc.) will in the nearest future be in a position of an individual private enterprise, and renting facilities will be the only connection with a health center. Secondary care, majority of which is still a part of public health services, undergoes slightly different process. The number of individual private specialists, the only type of private medical practice in the former socialist medicine, is increasing, but some new forms of privatization of secondary care are appearing and increasing. Specialist polyclinics, formerly possible only as a part of hospital, are now attracting more and more of the best specialists and university teachers, who are allowed to work both in public institutions and as private practitioners, which rises many problems, some of them being deep ethical issues. On the other hand, public health services are under the permanent pressure of scarce resources, inefficient structure, and waiting lists.

People of Croatia and its Health Needs
According to the 1991 census, Croatia had 4,784,265 inhabitants with the population density of 84.1/km². According to the WHO estimations, the population will decrease to 4,234,000 in 2025. The population aged 65 and over reached 13.1% in 1991 and a further increase is expected. Birth rate in 1995 was 11.2 per 1,000 population, and death rate was 11.3. In 1996, birth rate exceeded again the death rate (12.0 and 11.3, respectively). Infant mortality rate was 8.9 deaths per 1,000 live births in 1995, and 8.0 in 1996.

Data from the general mortality statistics in Croatia in 1996 (Table 1) show that people die from causes similar to those in other European countries. Diseases of circulatory system, with over 50% out of 50,636 deaths, were in the very first place in 1996. Neoplasms and injuries were in the second and fourth place, respectively. For about 7% of data, only symptoms were recorded (in the third place).

During 1996, there were 467,356 patients treated in hospitals (Table 2). The most frequent groups of diseases were neoplasms (14.4%), followed by the diseases of the circulatory (14.0%), digestive (11.8%), and respiratory (10.6%) systems. The length of the stay in general hospitals for 1996 (8,593 beds) was 9.6 days with the bed utilization of 89.5%. The average stay in the university hospitals (9,793 beds) was 10.8 days with the bed utilization of 90.7%. At the same time, there were 9,408 beds in hospitals for chronic diseases with 36.5 days of stay per patient and 83.8% of utilization rate.

Table 1. Mortality in Croatia by disease groups for 1996. [view this table]
Table 2. Hospital morbidity by disease group in Croatia in 1996. [view this table]

During and after the 1991/92 war in Croatia and in Bosnia and Herzegovina, the population migration considerably increased: at some point, Croatia had about 1 million refugees from the neighboring Bosnia and Herzegovina and displaced persons from the occupied parts of the country. In 1997, there were still around 300,000 refugees and displaced persons registered in Croatia.

The country is presently divided into 21 counties. There are 69 towns and cities, and 419 municipalities in the rural areas. Zagreb, the capital city, holds the position of a city and a county. The size of the counties varies between 86,728 inhabitants in the county of Senj and Lika and 776,399 in the city of Zagreb. Municipalities are much smaller, from 2 to 15 thousand inhabitants. Cities within the counties are bigger, 15 thousand to 200 thousand inhabitants (Split, Rijeka, Osijek).

Organization and Financing of Health Care System
An analysis of the health care system in Croatia should take into account that its present organization and, even more, its future one will be determined and influenced by the four main factors.
1. A relatively extensive development of health care infrastructure before the 1991/92 war with respectable tradition in prevention and primary health care (9).
2. The 1991/92 war and its devastating consequences for the economy, health facilities, loss in human lives, war victims in need of rehabilitation, and other types of support, have increased the
number of persons requiring psychosocial treatment and support, assistance with broken human
relations, etc. (10-12).
3. Privatization in the health sector with its specific “Croatian model” of primary health care and
market economy has been carefully and slowly introduced into the other parts of the system.
4. General and health policy that are traditionally open to the implementation of new technologies,
both by health care users and health care providers. Croatia has a long tradition of health
professionals who have been a part of the world medical arena in different fields, especially in public
health (Andrija Štampar was one of the founders of the World Health Organization and the Chairman
of its first General Assembly; Zagreb School of Public Health was the founder of the Association of
Schools of Public Health in Europe – ASPHER; in Zagreb, Ante Vuletiæ designed and introduced a 3-
year training course for general practitioners for the first time in the world).
Before the 1991/92 war, Croatia was a moderately developed European country with a sufficient
number of physicians (2.1 per 1,000 population) and a tradition in preventive medicine (9). Health
system operated at three levels. The primary level was partly integrated but, at the same time, the
population had direct access to certain specialized services, gynecology, dermatology, tuberculosis
services, etc. Although the general practice constituted a major part of those integrated services, the
primary level also included a pediatrician for 0-6 year-olds, school health physician for 7-18 year-olds,
and occupational medicine for specific measures related to work hazards and for general care in
larger companies. The objectives of the health policy were to develop primary health concept oriented
towards the community, but primary health care services were supported in their greater part only
declaratively. Financial power was given more to the secondary care and curative medicine. For more
than 25 years, Croatia had specific, integrated type of health services in a municipality – the so-called
medical center, in which primary level services were integrated with the first level hospitals into one
organization. More investments and better employment opportunities were given to hospital than to
outpatient sections of medical centers (13).
The 1991/92 war and aggression against Croatia resulted in 9,941 killed, and 28,734 wounded
persons (more than 7,000 persons with amputations). On the whole, there were 60,000-65,000 war
victims in need of rehabilitation (14). It is estimated that total war damage amounted to US$20 billion.
During and after the war, the health care system faced not only war consequences but also the
shortage of resources. From US$2.3 billion spent on health care in 1990, the budget was reduced to
0.8 billion in 1994. The recovery is slow, and the approximation for 1998 budget is US$1.8 billion.
The main health policy was to find stable sources of income, and to reduce all the unnecessary
expenditure. Hospital care was reduced from 7.3 to 6.1 hospital beds per 1,000 population. At the
primary level, the policy was to have a public/private mix: health centers as public health institutions
owned by county authorities, and two types of private practices. Patients have a free choice of their
primary level physicians. At that level, there are private practitioners working in the premises of health
centers and private practitioners working in their own premises. Both types of practitioners have
contracts with the Croatian Institute for Health Insurance for free health care of the insured. Such a
care includes health promotion and prevention, cure of common diseases, and emergency treatment.
Health visitors (nurses) are also a part of the public health care. Private practice, organized as out-of-
pocket, fee-for-service payment, is also allowed at primary and secondary levels, but is still not the
dominating service. The statistics has shown that about 15% out of 10,000 physicians work as private
practitioners of any type.
Hospitals operate as public services owned either by a county or the state, with the exception of spas
and rehabilitation institutions which are allowed to undergo privatization.
General practice dominates at the primary level and the policy is to develop an integrated type of
family practice. The power of the referral system is given to primary health care doctors acting as
gatekeepers. They are also responsible for sick-leave payments.
Health care is financed by different sources, mainly by a mandatory health insurance, administered
through a single agency – the Croatian Institute for Health Insurance. Other sources of income for
health are subsidized by the state budget (for prevention, control of environment, special educational
programs, health statistics, and sanitary control), county budget (for special programs and health care
of elderly peasants). The co-payment system has also been introduced, accounting for nearly 10% of
direct service’s cost. Health users are paying in part for drugs, visits to primary level physicians,
specialists, diagnostic procedures, hospital treatment, orthopedic appliances, and some other
services. Children, the elderly, social cases, preventive services, and war veterans are excluded from
that type of contribution.
Total health care expenditure in 1995 was 7.6% of the GNP (about US$1 billion).
Health services are funded by the insurance in different ways: in primary health care, the capitation
fee system was introduced in 1993. Since 1998, it has been adjusted for payment by age. Health
insurance reimburses the cost of rent in a fixed amount (US$120) to primary health care practitioners. A county can deduct the rent, which is the usual case in the least developed areas. In that case, the sum is the incentive for a particular physician.

Secondary care specialists are usually paid on the fee-for-service basis. For that purpose, there is a list of procedures and services with their descriptions and the value of points determined each year by the health insurance board.

Hospitals are financed by a combination of fee-for-service, cost of drugs, hospital "hotel cost", staff salaries, and diagnostics, but only for the contracted number of beds.

In spite of many difficulties in the last 7-8 years, health situation is not worse than before. Mortality rates from ischemic heart diseases and female breast cancer are at the European average. Mortality rate from cerebrovascular diseases is twice as high as in Europe (Table 3). A very favorable situation is found in the incidence of AIDS (total number of cases was 108 by 1996). For 1995, there were 5 HIV-positive blood donors out of 174,194 tested, 4 drug addicts (out of 353 tested), and 21 hospital patients (out of 3,895 tested). In 1996, the situation was even better: no HIV positive persons among blood donors and drug addicts but 17 among hospital patients were found (Table 4, ref. 15). National anti-HIV prevention program (started in 1987 and lasted for a few years) has been intensified, with the objective to stabilize the incidence of that infection.

<table>
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<tr>
<th>Table</th>
<th>Standardized death rates of persons 0-64 years of age par 100,000 inhabitants from different disease categories in Croatia and selected countries for 1990 and 1995. Source: Croatian Health Service Yearbook, 1997 (15). [view this table]</th>
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<td>3:</td>
<td>Table Selected morbidity and mortality data for Croatia for 1990 and 1996. [view this table]</td>
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<td>4:</td>
<td>Table Vaccination coverage in Croatia from 1990 to 1996. [view this table]</td>
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<td>5:</td>
<td>Vaccination coverage in Croatia (Table 5) is still not satisfactory and there is room for improvement. Behavioral problems, such as smoking, alcohol consumption, nutritional deficiency, bad habits (e.g., having a single but a heavy meal daily), and violence are still frequent or on the increase. A recent increase in the number of drug addicts asks for new initiatives and measures.</td>
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**Discussion**

Due to an extensive health infrastructure in previous times, economic reconstruction, and war, there are some problems on how to adjust the existing infrastructure to the present economic situation without destroying the system and thus preventing social dissatisfaction. As a consequence of insolvency in the economy, there is a delay in payment of bills and reimbursement to health institutions and private practitioners. Several years after the 1991/92 war, there were no investments in new equipment or premises. Emergency situation required a more centralized type of health management and decision-making, which caused a decrease in the local initiatives, participation, and community involvement. This situation has recently been identified as an important obstacle to the future health development, and there is an initiative from the Ministry of Health to change it. A more informal care from the family, voluntary sector, and charities is expected.

In the future, more attention should be given to the vaccination coverage because there will be more actors implementing vaccination. There will be private general practitioners and pediatricians who will not be under the administration of public health centers, and we can expect that all of them will not pay enough attention to the problem of vaccination. There is presently quite a large migration of people, and it is expected to continue, which will cause the problem in the registration of vaccinated children.

The national preventive programs against smoking, alcohol, and drug addiction started in an organized way but there is a danger that this attention could decrease in due time. This fact is reflected in the program against smoking: it was initiated very intensively a couple of years ago and is today at a much lower level. To prevent this, health policy should pay more attention to sustainability measures. Monitoring and evaluation of program results should be very clear, with adequate research and follow-up of the results.

Free choice of a physician with capitation-fee type of service payment at the primary level contributes to a new quality of services and patient’s satisfaction. In the organization of the primary level of care, health policy is oriented toward an integrated care with a family physician (earlier known as general practitioner) in the focus. The average number of persons on the family physician’s list is calculated to be 1,700 with the maximum of 2,500. At the first level of health care, apart from the family physician there is also a health visitor, a highly trained nurse who covers all citizens in the defined area with
preventive and public health measures. The average number of citizens covered by a nurse is 5,000. It is expected that age-adjusted capitation-fee type of payment of medical staff in the primary care will result in more autonomy in the process of health care and will contribute to the better motivation and new initiatives taken by professionals, and greater satisfaction of patients. We hope that the improvement in the quality of care can be achieved through the implementation of the system of continuous training and relicensing, as well as through the system of health inspection.

Hospital services seem to be the weakest point of the health care system. A great number of physicians employed in that part of the system, shortage of money, fixed salaries, expensive equipment and investments, and expensive treatments (drugs, materials, food) led to a decrease in the quality of work, demotivation of professionals, dissatisfaction of staff, long waiting times for certain procedures, corruption, and draining of the best professionals out of the hospitals and even out of the country. Hospitals are under the responsibility of the county authorities, apart from university hospitals, which are under the state government authority. For hospital management, there is not enough room for economizing and incentives.

The institutes of public health are responsible for the implementation of preventive programs, control of infectious diseases, control of environment, collection, analysis and presentation of statistical data, and other public measures. The system operates at two levels: national and county levels. The county institutes operate as central offices and dislocated units in health centers. Some institutes, established many years ago (Split, Zagreb, Rijeka, Pula, Osijek), have reputation, good equipment, and staff. Some new institutes are very often poorly equipped, with shortage of premises and staff, and require support.

We have to be aware that the Bismarck model of social insurance was in the beginning introduced in Prussia not as a benefit for the people but for very selfish reasons, to keep the system running. It is thus evident from the past that health cannot be seen as the commodity but rather as A. Štampar said: “Health of the population is of higher economic than humanitarian importance” (16).

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Received: March 23, 1998Accepted: June 8, 1998

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