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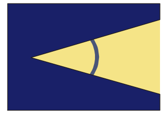

Health Care Systems in Transition

Croatia

The European Observatory on Health Care Systems is a partnership between the World Health Organization Regional Office for Europe, the Government of Norway, the Government of Spain, the European Investment Bank, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine

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Foreword

The Health Care Systems in Transition (HiT) profiles are country-based reports that provide an analytical description of each health care system and of reform initiatives in progress or under development. The HiTs are a key element that underpins the work of the European Observatory on Health Care Systems.

The Observatory is a unique undertaking that brings together WHO Regional Office for Europe, the Governments of Norway and Spain, the European Investment Bank, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine. This partnership supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of the dynamics of health care systems in Europe.

The aim of the HiT initiative is to provide relevant comparative information to support policy-makers and analysts in the development of health care systems and reforms in the countries of Europe and beyond. The HiT profiles are building blocks that can be used to:

- learn in detail about different approaches to the financing, organization and delivery of health care services;
- describe accurately the process and content of health care reform programmes and their implementation;
- highlight common challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in the different countries of the European Region.

The HiT profiles are produced by country experts in collaboration with the research directors and staff of the European Observatory on Health Care Systems. In order to maximize comparability between countries, a standard template and questionnaire have been used. These provide detailed guidelines

and specific questions, definitions and examples to assist in the process of developing a HiT. Quantitative data on health services are based on a number of different sources in particular the WHO Regional Office for Europe health for all database, Organisation for Economic Cooperation and Development (OECD) health data and the World Bank.

Compiling the HiT profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health care system and the impact of reforms. Most of the information in the HiTs is based on material submitted by individual experts in the respective countries, which is externally reviewed by experts in the field. Nonetheless, some statements and judgements may be coloured by personal interpretation. In addition, the absence of a single agreed terminology to cover the wide diversity of systems in the European Region means that variations in understanding and interpretation may occur. A set of common definitions has been developed in an attempt to overcome this, but some discrepancies may persist. These problems are inherent in any attempt to study health care systems on a comparative basis.

The HiT profiles provide a source of descriptive, up-to-date and comparative information on health care systems, which it is hoped will enable policy-makers to learn from key experiences relevant to their own national situation. They also constitute a comprehensive information source on which to base more in-depth comparative analysis of reforms. This series is an ongoing initiative. It is being extended to cover all the countries of Europe and material will be updated at regular intervals, allowing reforms to be monitored in the longer term. HiTs are also available on the Observatory's website at http://www.observatory.dk.

Acknowledgements

The HiT on Croatia was written by Spaso Vulic (Med-Ekon, Zagreb) in collaboration with Judith Healy (European Observatory on Health Care Systems).

This HiT drew upon an earlier unpublished draft written by Spaso Vulic and edited by Tom Marshall (WHO).

The European Observatory on Health Care Systems is grateful to Tom Novotny (World Bank) and Stepan Oreškovic (Andrija Štampar School of Public Health, Zagreb) for reviewing the report, and to the Croatian Ministry of Health for its support.

The current series of the Health Care Systems in Transition profiles has been prepared by the research directors and staff of the European Observatory on Health Care Systems.

The European Observatory on Health Care Systems is a partnership between the WHO Regional Office for Europe, the Government of Norway, the Government of Spain, the European Investment Bank, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

The Observatory team is led by Josep Figueras, Head of the Secretariat and the research directors Martin McKee, Elias Mossialos and Richard Saltman. Technical coordination is by Suszy Lessof. The series editors are Anna Dixon, Judith Healy, Elizabeth Kerr and Suszy Lessof.

The research director for the Croatian HiT was Martin McKee.

Administrative support, design and production of the HiTs has been undertaken by a team led by Phyllis Dahl and comprising Myriam Andersen, Sue Gammerman and Anna Maresso. Special thanks are extended to the WHO Regional Office for Europe health for all database from which data on health services were extracted; to the OECD for the data on health services in western Europe, and to the World Bank for the data on health expenditure in central and eastern European (CEE) countries. Thanks are also due to national statistical offices that have provided national data.

Introduction and historical background

Introductory overview

Croatia (Hrvatska) covers an arc of territory from the Danube River in the east to Istria in the west and down the Adriatic coast to Dubrovnik in the south. The borders of the country are with Bosnia and Herzegovina, Slovenia, Hungary and the Federal Republic of Yugoslavia (Fig. 1). The land area in 1993 was 56 500 square kilometres (about half the size of the present Federal Republic of Yugoslavia). The capital is Zagreb.

Under the Roman Empire, this land included the provinces of Pannonia and Illyricum that remained with the western Roman Empire in the division of 395. Slavic tribes migrated into the area in the seventh century. Northern Croatia united with Hungary in the twelfth century, turned to the Austrian Habsburg Empire for protection against the Turks in the sixteenth century and remained part of the Habsburg Empire until 1918. With the dissolution of this empire in the First World War, Croatia became part of the Kingdom of Serbs, Croats and Slovenes, renamed Yugoslavia in 1929. After the Second World War, Croatia became a republic within the Yugoslav Federation under Marshal Tito.

Croatia became an independent country when the Yugoslavian federation collapsed. The first democratic multi-party elections took place in April 1990 when the Croatian Democratic Union defeated the Communist Party and was elected the party of government. Franjo Tudjman was elected as President. In December 1990 the new Croatian Constitution was promulgated. The May 1991 referendum voted in favour of independence, which was announced in June. This prompted a declaration of independence from Croatia by the Serbian enclave of Krajina where fighting broke out followed by the intervention of the Yugoslav People's Army on behalf of the Serbian population. Croatia officially declared independence in October 1991. War continued with the Krajina Serbs and with the Federal Republic of Yugoslavia during 1991–1992, and in Bosnia and Herzegovina until the signing of the Dayton peace agreement

Fig. 1. Map of Croatia[1]

Source: Central Intelligence Agency, The World Factbook, 1997.

in December 1995. This agreement recognized Croatia's traditional borders and called for the return of eastern Slavonia in 1997, which was held by ethnic Serbs.

During the war which followed national independence, Croatia suffered extensive material damage particularly in the frontier areas in eastern Slavonia, along the border with Bosnia and Herzegovina and the area around Dubrovnik. Direct damage (excluding many indirect effects) was estimated by the State Commission for War Damage Inventory and Assessment to amount to US $27

[1] The maps presented in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitations of its frontiers or boundaries.

billion. For example, nearly 10% of housing stock was destroyed or damaged as well as a considerable amount of public service infrastructure. By mid-1995, over 16 000 Croatian citizens had been killed in the war and over 30 000 had been made permanent invalids. A survey in Croatia in March 1996 counted 361 774 displaced persons and refugees. The full rehabilitation and reconstruction of Croatia and its economy is expected to take many years.

The country is governed by a bicameral parliament, the Sabor, which contains the House of Representatives and the House of Counties. Representatives are directly elected for a four-year term. The head of state is the president, who is directly elected for a five-year term and may be re-elected for a further single term. The president is responsible for the timing of elections and referenda, and nominates a prime minister who in turn appoints a government, subject to approval by the House of Representatives. A constitutional court ensures that laws passed by the parliament conform to the constitution.

Regional and local government is organized at two levels: 21 counties and 404 municipalities. The county is the larger territorial unit consisting of a county assembly, a county head and county administration. Municipalities are smaller, comprising a municipal council and a municipal mayor. County and municipality representatives are elected for four-year terms. County and municipal activities are financed principally from the state budget and also from small and variable amounts of locally raised revenues.

The total population of Croatia in 1996 was estimated at 4.57 million (a drop from 4.78 million in 1991). Up-to-date information on the ethnicity and religious mix is not available since there has been large-scale population movement since the last census in 1991.

Croatia underwent a severe recession in the first half of the 1990s due to several factors: the transition from a command economy, the severing of ties with the Federal Republic of Yugoslavia, and the enormous impact of the war upon the society and economy. Annual GDP growth, which was falling by the end of the 1980s, dropped to nearly –20% in 1991 before improving to 5% in 1997 (Table 1). Annual inflation soared during the war but improved to single figures from 1995. GDP per capita in US$ fell from $5106 in 1990 to a low of $2079 in 1992 before recovering somewhat to $4267 in 1997 (purchasing power parity figures are not available). Registered unemployment rose sharply in 1991 and has remained at around 15%.

The health status of the Croatian population is better than in many central and eastern European countries despite war and economic privation. For example, life expectancy at birth in 1997 was 76.5 years for women and 68.6 years for men (Table 2), which was higher than for its neighbour Hungary.

Table 1. Macro-economic context

Indicator	1990	1991	1992	1993	1994	1995	1996	1997
GDP growth rate (% change)	-6.9	-19.8	-11.1	-0.9	0.6	1.7	4.2	5.0
Annual inflation rate (%)	610	123	666	1518	98	2.0	3.5	3.7
GDP per capita US$	5 106	3 510	2 079	2 440	3 062	3 873	4 243	4 267
GDP per capita PPP US$	–	–	–	–	3 960	3 972	–	–
Registered unemployment	9.3	14.9	15.3	14.8	14.5	14.5	15.9	–
Real wages (base year = 100)	–	–	–	–	–	100	108	–

Source: UNICEF TransMONEE database 3.0; WHO Regional Office for Europe health for all database.

Ischaemic heart disease is a major cause of death in central and eastern European countries with 106.9 deaths as an age standardized rate per 100 000 males 0–64 years. The rate in Croatia, however, was 69.19, which is closer to the European Union average of 52. In 1996, the rate for ischaemic heart disease in Croatia was 64.59, whereas in neighbouring countries, Hungary was 133.78 and Slovenia 45.78. The Croatian mortality rate for cerebrovascular disease, however, is twice the European Union average. Maternal mortality per 100 000 live births rose slightly in 1993–1995 during the war but not above the central and eastern European average, and infant mortality and mortality rates for children under five years of age did not rise significantly in those years (WHO Regional Office for Europe health for all database).

Historical background

The period from 1918 to 1945

Health insurance was introduced through three separate private organizations in 1922 in one of the more advanced schemes in Europe (*22*). The Brotherhood Treasury covered mineworkers, the Central Office for Workers Insurance covered other employees and workers, and Mercur mainly covered government officials. These health insurance organizations also had their own health care providers.

In the 1920s, public health centres for health promotion, hygiene and epidemiology were established in rural areas. The remainder of the health system was mostly private. In general, health services were oriented towards individuals who could pay for health care, while there was a public system for the control of communicable diseases and the promotion of public hygiene.

Professor Andrija Štampar of the Zagreb School of Public Health, one of the founders of the World Health Organization and of the Association of Schools

Table 2. Demographic indicators

Indicator	1990	1991	1992	1993	1994	1995	1996	1997
Total population (millions)	4.8	4.8	4.8	4.8	4.8	4.6	4.5	4.6
Crude birth rate (per 1000 population)	11.6	10.9	9.8	10.2	10.2	10.5	11.9	12.1
Crude death rate (per 1000 population)	10.9	11.5	10.8	10.6	10.4	10.6	11.3	11.4
Female life expectancy at birth (years)	76.4	76.0	76.6	76.7	77.0	77.2	76.5	76.5
Male life expectancy at birth (years)	68.7	68.6	67.1	68.5	69.2	69.3	68.7	68.6
Maternal mortality (per 100 000 live births)	1.8	7.7	4.3	10.3	10.3	12.0	–	10.8
Infant mortality (per 1000 live births)	10.7	11.1	11.6	9.9	10.2	8.9	8.1	8.2

Source: UNICEF TransMONEE database 3.0; WHO Regional Office for Europe health for all database.

of Public Health in Europe, helped introduce a range of public health services in the 1920s and 1930s. He also pioneered primary health care centres in Croatia.

The period from 1945 to 1990

Croatia ran its own health services with its own Ministry of Health as a separate state federated within the Socialist Federal Republic of Yugoslavia. In 1945 compulsory state health insurance was introduced covering most of the population, financed from income-related contributions and from the state budget. Insurance was first organized at the local level through local health and social insurance organizations. In the next phase, the federal government administered pensions and the health insurance funds which were brought together under the Institute for Social Insurance, which subsequently split into the Health Insurance Fund and the Pension and Disability Insurance Fund.

The third phase, from 1974, introduced community management. The Constitution of 1974 set up local associations, which were to plan, collect and distribute financial resources, and also organize health services. Legislation was enacted to consolidate the large units, known as medical centres, which administered primary care, first-level secondary care hospitals and public hygiene services in their area. The result was that resources were used inefficiently, hospitals secured most of the funds, and community management was not compatible with large medical organizations. In practice, decisions were made by political or government bodies. Also, despite a long tradition of private health care, private medical (but not dental) practices were reduced to very few in number.

The three insurance schemes continued as before for employees, farmers and artisans, and the self-employed alongside the Health Insurance Fund.

Ideas from the rest of Europe entered the country through visits by international experts and through influential people such as Professor Andrija Štampar. His successors introduced one of the first European postgraduate training programmes in general practice.

The Croatian health care system by the end of the 1980s was a unique blend of health insurance funds, a network (although neglected) of primary health care, quasi-autonomous health organizations and community management. The result was an extremely liberal system, verging on anarchy, which satisfied nobody. Croatia entered the 1990s with a dysfunctional, poorly organized and expensive health system, which needed to be completely restructured.

After 1990

The new constitution adopted in December 1990, in its first article defined the Republic of Croatia as a "democratic and social" state. The constitution also set out a number of social rights including the right to a healthy life, a healthy environment and health care.

The 1993 Health Care Act included commitments to universal coverage, universal accessibility, acceptability, affordability; continuity of care, free choice of physician and health care team; and provision through a mixed (public and private) system. The legislation also emphasized the importance of health promotion and disease prevention. Health care was to be developed through a planned approach to health care delivery at three levels (primary, secondary and tertiary). The principle of subsidiarity was invoked in that the state should not offer services better delivered at county level, and the county should not offer services better delivered at municipal level. Health care was regarded as primarily the responsibility of government but citizens were also urged to look after their own health. Article 3 of the Health Care Act states: "The duty of all citizens is to take care of their health".

The developing system will undergo further reforms. The guiding principle is that these changes should result in an improvement in the health status of the population. The health system should also develop in such a way as to ensure its stability and not endanger national development.

Organizational structure and management

Organizational structure of the health care system

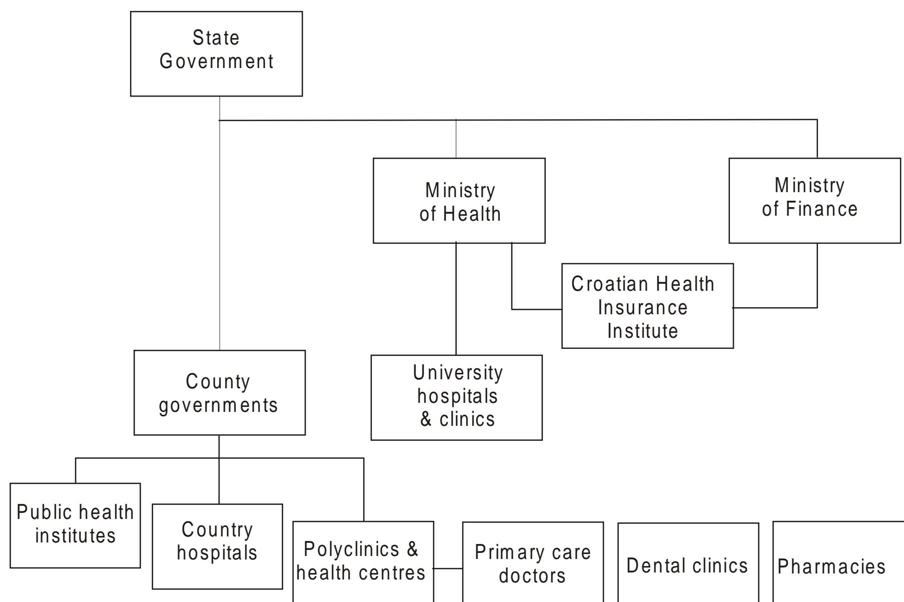
The organization of health care is changing in Croatia (Fig. 2). The "social ownership" of health facilities has been replaced with state ownership, county ownership and private ownership. The state owns large tertiary care teaching hospitals and specialist institutes. Counties own health centres and the majority of general and specialist hospitals. Physicians increasingly provide primary care under contract with the insurance fund.

The financial organization of health care through a major third party payer (the Croatian Health Insurance Institute) is new and this body now plays a key role in the health system. The rapid growth of private ownership has stimulated improvements in the quality of health care. Primary health care is still organized on a multi-specialty basis, but is gradually moving towards a family doctor system similar to many western European countries.

Main bodies in the health care system

Ministry of Health
The Ministry of Health owns a number of tertiary care facilities: the teaching (university) hospitals, hospital centres and state health institutions. It nominates the chairs of their governing councils and appoints the majority of members. The Minister of Health draws up legislation for consideration by Parliament, produces the annual national health plan for the country, monitors health status and health care needs, sets and regulates standards in health facilities, and supervises professional activities such as training. It also administers public health activities including sanitary inspections, supervises food and drug quality, and engages in health education of the population. This Ministry is responsible for capital investment in its own facilities and also in new health institutions.

Fig. 2. Organizational chart of health care system



A National Health Council, set up under the Health Act, consisting of nine members nominated for their expertise, advises the Minister of Health on health policy and planning issues.

Ministry of Finance

The Ministry of Finance has no direct input into the health service but is involved in deciding the level of insurance contributions to the Croatian Health Insurance Institute. It also has an auditing role in all health insurance institutions.

Counties (and the city of Zagreb)

General hospitals and hospitals for chronic diseases, polyclinics and health centres, sanitoria, home care institutions, emergency care units and public health institutes are all owned by county authorities. The counties nominate the chairs of the governing councils of these institutions and appoint the majority of council members. The counties are responsible for the maintenance of these facilities from their county incomes. These incomes are derived from local taxes (road tax, capital gains tax), rental income and also from state revenue sharing.

Croatian Health Insurance Institute

The Croatian Health Insurance Institute established in 1993 (in place of more limited schemes) is a statutory quasi government body which determines the available resources for health care by setting and collecting insurance

contributions. It also lays down normative standards for health care provision and influences health care institutions through its contracts. It is overseen by a governing council, which consists of representatives of the insured population, the Ministry of Health, health institutions, and private practices (independent general practitioners).

Chambers

Croatia has statutory professional chambers for physicians, dentists, pharmacists and biochemists established by the relevant faculties and professional associations. All university-educated health professionals are members of a chamber and the chambers in turn are responsible for professional registration and maintenance of professional standards. The chambers also represent professional opinion on a variety of issues and advise on licensing private practice and on opening or closing health institutions.

Health care organizations

Each health institution has a professional council, consisting of heads of departments, which must meet at least every 30 days. A council acts as an advisory body to the director, proposing technical solutions and commenting on professional issues. It is also involved in planning health services and in monitoring standards. It may undertake other activities entrusted to it by the statute of the health institution. In addition, each institution has a governing board consisting of representatives of the owners and the employees.

Planning, regulation and management

Planning

The Ministry of Health produces an annual national health plan containing clearly defined objectives following suggestions from the Croatian Health Insurance Institute and from the National Health Council. This plan must then be approved by parliament. The national health plan is implemented at all levels supervised by the Ministry of Health. In relation to health promotion, the current plan gives priority to the health of mothers and the primary health care of pre-school and school children.

The Croatian Institute of Public Health (under the Ministry of Health) plays an important role in public health planning, monitoring and evaluation. The institute undertakes epidemiological analysis and carries out health promotion and illness prevention programmes. The prevention and control of communicable and noncommunicable diseases, the delivery of immunization

programmes, environmental protection measures, and the monitoring of drinking water and other health risks are undertaken through the compulsory notification system and through inspection. At the county (and the city of Zagreb) level, the Public Health Institutes collect statistics and participate in the formulation and implementation of health programmes for their areas.

The Croatian Health Insurance Institute implements the plans for direct health services through its contracts with health care providers. Under the national health plan, approved annually by Parliament, the Croatian Health Insurance Institute passes regulations on health insurance entitlements, which aim to balance the supply of resources with the demand for services.

Regulation

The regulation of standards in health care institutions is the responsibility of the Ministry of Health. Standards are set out in the 1993 Health Care Act, and the 1993 Health Insurance Act, which was amended in 1994, and again in 1997. Teams of health inspectors visit health institutions if there are organizational or professional failures. The licensing of professionals is the responsibility of the professional chambers.

Management

Hospitals and other health centres are managed by a director and a deputy director, one of whom must be medically qualified with at least five years clinical experience. Its governing council whose members and chair are appointed by the owner of the facility (state or county) appoints the director of a hospital or a health centre. These boards are composed of representatives from the following groups: employees, county or state government (depending on who is the owner of the institution) and the Croatian Health Insurance Institute. The role of the director is defined in the health legislation. The director and the board are responsible for managing the budget of their enterprise and for deciding upon any large capital investments. A professional council, consisting of the medical heads of departments, sits in an advisory role to the director.

The Croatian Health Insurance Institute is managed by its board and is accountable to the Croatian government. It operates a single account and applies business principles to its operations: all insurees have to make their payments on time, while the contracted health institutions and practitioners must be reimbursed regularly and on time.

Decentralization of the health care system

Health care services in the former Federal Republic of Yugoslavia were highly decentralized. This system – self-managed socialism – was characterized by undefined ownership and the absence of management accountability. Facilities were regarded as everybody's and nobody's. In practice, political bodies made all management decisions, and there was no supervision or inspection. Health care services suffered from poor organization, lack of management, and considerable inefficiency. Croatia embarked on health sector reform, unlike other central and eastern European countries, believing that decentralization was part of the problem rather than part of the solution. The reforms therefore have been accompanied by some increase in central and county-level control. Nevertheless, responsibilities for health care remain decentralized through *devolution* to county government, through *delegation* to the semi-government insurance fund and to semi-autonomous provider institutions, and through *privatization* mainly of primary care physicians, dentists and pharmacists.

Responsibilities in health care are divided between the state authorities and counties (municipalities play little part in the health services). Central government sets the framework within which a county draws up its health policy. Planning, administrative and supervisory roles are devolved to county authorities. Responsibility for management has been delegated to semi-autonomous health provider institutions such as health centres and hospitals run by their governing boards.

The reforms were accompanied by extensive privatization of primary care, which allows primary care practitioners to lease public facilities from the county (at low cost). Alongside this, some home care services (such as district nursing) and most pharmacies and dental clinics have been privatized.

Health care finance and expenditure

Main system of finance and coverage

The inherited system of finance was in complete chaos with little information about revenue or expenditure. The first overall budget in 1990 of the new government of Croatia incurred a 10% budget deficit.

Health care has a mixed system of financing (as shown in Table 3). Most revenue comes from public sources. These official statistics, however, underestimate the level of total health care finance and expenditure since private out-of-pocket payments are not necessarily included in the national accounts. The first source of finance is compulsory population health insurance that covers the direct costs of service provision. Statutory insurance has increased since the establishment of the Croatian Health Insurance Fund in 1993 and now amounts to 95% of health revenue. The second source is government revenue, which amounts to 5% of health revenue with about 4% from the state budget and less than 1% from county budgets. This money pays for new capital works.

Table 3. Percentage of main sources of health care finance

Source of finance	1980	1990	1991	1992	1993	1994	1995	1996	1997
Public									
State budget	–	13%	28%	28%	9%	7%	10%	7%	5%
Statutory insurance	74%	74%	70%	70%	91%	93%	90%	93%	95%
Private									
Out-of-pocket	2%	1%	2%	2%	2%	2%	2%	2%	2%
Private insurance	–	–	–	–	–	–	–	–	–
Other									
External sources	7%	12%	–	–	3%	3%	3%	1%	1%

Source: (*21*) Table 4; Croatian Health Insurance Institute.

The state pays insurance contributions for several groups: those unable to pay and those whose average health expenditures are high (such as the elderly and children up to the age of 15). It also funds extra services such as antenatal and maternity care, school health services and care of elderly people. The state pays for public health and environmental protection, health education, and income substitution during maternity leave and for part-time workers raising children (up to the age of three). The state also pays for health care for war veterans and the military, and the additional costs of health care in remote regions (where costs exceed insurance payments).

County budgetary contributions also fund some public health and environmental protection activities.

Private sources in the shape of direct charges to the public (including user fees in public hospitals), as well as other out-of-pocket payments, are estimates only since the full extent is not known.

Sources of funds of compulsory health insurance

The 1993 Health Insurance Act introduced a compulsory health insurance fund. Insurance contributions are in effect a payroll tax, which now amounts to 16% of gross salary (increased from 14%), with contributions divided equally between employer and employee. Contributions from employers, employees and the self-employed made up 63% of the Croatian Health Insurance Institute funds in 1995. Contributions from farmers accounted for 3.2% of its income, cost-sharing by users for 1.6% and additional contributions for the use of health services abroad for 4.2%. Those receiving pensions or benefits pay 18% of their gross benefits which accounts for 23% of the revenue of the Croatian Health Insurance Institute, plus about 5% of income comes from the state for groups unable to pay.

In 1994, the Croatian Health Insurance Institute paid out HRK 583.52 million more through its contracts (another 8.7%) than the revenue received from insurance contributions. From 1996, however, the Institute has been able to balance its budget.

Health care benefits and rationing

There is a legislative commitment to accessible and affordable health care including health promotion, preventive care, primary care and hospital care. An insurance contribution covers family members (including children up to the age of 15 if they are in full-time education) and also other dependants. The

county authority pays health insurance contributions for the unemployed and for those below a minimum income. A detailed list of health entitlements and exclusions has not so far been drawn up.

Complementary sources of finance

Out-of-pocket payments

Patients make co-payments for each primary care consultation, for a home visit, and for transport by ambulance. There are also charges for specialist consultations and for 'hotel charges' for inpatient care in hospitals and sanatoria. Patients also pay for dental prostheses, orthopaedic appliances and for some prescription medicines. Co-payments now account for nearly 10% of direct service costs.

Some categories of people are exempt from these charges and co-payments, principally those on low incomes, the unemployed, war veterans and children up to the age of fifteen years. Certain illnesses are also exempt including occupational illnesses and injuries, communicable diseases, mental illnesses and pregnancy-related health care. Patients must pay the full cost of health care if they are not covered by health insurance, if they do not have a referral letter, or if they require medications that are excluded from health insurance.

Gratuities or under-the-table payments, unlike many other central and eastern European countries, are said not to be widespread since the introduction of supplementary health insurance.

Voluntary health insurance

The 1993 Health Insurance Act allows for voluntary health insurance funds on either a private, semi-public, or public basis; for supplementary insurance; and for private commercial insurance. A small number of voluntary health insurance schemes offer extra entitlements; for example, to pay for better inpatient accommodation, expensive diagnostic procedures, and to bypass waiting times. Companies on behalf of their employees usually pay these contributions but there are no data available on the number of people privately insured.

There is no comprehensive private health insurance fund. This would require the approval of the Ministry of Health. Any company offering such insurance would have to meet a number of conditions such as stability of income, ownership of capital assets, and access to reserve funds.

External sources of funding

Donations from domestic or foreign sources have helped in the purchase of capital equipment for health services. Usually these funds are earmarked for specific purposes. Funds have also been borrowed from the World Bank to reconstruct health facilities in remote areas, to develop emergency services, and to build and equip certain tertiary care facilities. These funds amounted to 3% of revenue in 1995 and 1% in 1997.

In addition, several international organizations were working under UN supervision in eastern Slavonia (prior to its reintegration into Croatia) on schemes such as a poliomyelitis vaccination campaign, the reconstruction of the Vukovar Hospital and the construction of primary health care centres.

Health care expenditure

Croatia spent a higher proportion of its GDP on health (9.1% in 1994 and 7.2% in 1997) compared to the central and eastern European average of 5.2% of GDP and the European Union average of 8.3% (Fig. 3). Table 4 shows that health expenditure dropped in real terms (given rampant inflation) between 1992 and 1994 but has recovered to its 1992 level by 1997. Total health expenditure is underestimated in the official statistics, as private payments (such as out-of-pocket payments) are not included. The calculation of current expen-

Table 4. Trends in health care expenditure, 1990–1997

Total expenditure on health care	1990	1991*	1992	1993	1994	1995	1996	1997
Value in current prices (kuna) (million)	26 696	44 427	260	3 905	7 215	7 828	7 910	8 637
Value in deflated currency (1990 value)	26 696	21 778	16.5	15.4	14.7	14.8	14.9	16.2
Share of GDP (%)	10.5	10.6	8.5	7.4	9.1	7.9	7.3	7.2
Health expenditure in PPP US$	–	–	–	–	–	–	–	–
Health expenditure % total government expenditure	–	25.57	18.52	25.58	18.97	–	–	–
Public share of total expenditure on health care (%)	100	100	100	100	100	100	100	–

Source: (*21*); WHO Regional Office for Europe health for all database; Croatian Institute of Public Health.

* Note: HRD was redenominated as kuna in 1992.

ditures will have to be revised to take account of the introduction of the new health insurance fund in 1993, and the rapid growth of private practice. The public share of total expenditure (in Table 4) therefore excludes consumer payments.

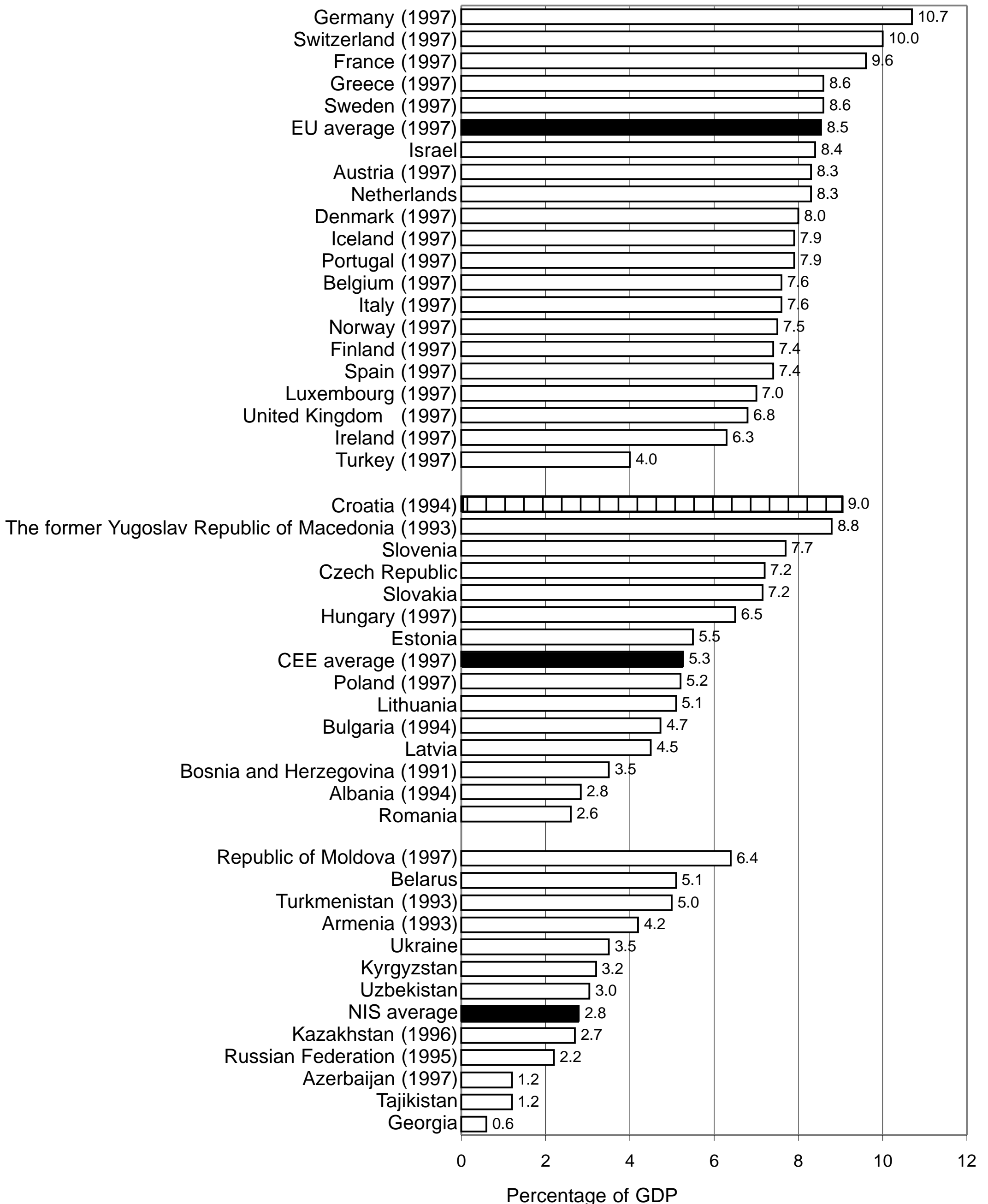
Table 5 shows that the structure of health care spending by the public sector changed somewhat during the 1990s. In 1990, before the start of the reform process, about 15% of health care expenditure went on primary care and 36% to hospital care. The proportion of spending in 1997 included 18% on primary care, 12% on other ambulatory secondary care, and inpatient care was about 30%. An increasing proportion went on drugs, rising from 7% in 1990 to 22% in 1993 before dropping to 16% in 1997.

Table 5. Health care expenditure by category, (%) of total public expenditure on health care, 1990–1997

Share of total public expenditure on health care	1990	1991	1992	1993	1994	1995	1996	1997
Primary health care	14.9	17.2	13.0	14.4	15.4	14.6	16.12	18.63
Prescription drugs	7.0	11.6	16.6	21.7	19.0	16.9	16.95	15.54
Polyclinics	13.7	12.5	10.5	12.4	10.9	10.3	11.23	11.52
Hospitals	35.5	31.5	27.8	30.7	33.2	33.6	32.28	29.82
Other health care	3.9	3.9	7.3	8.7	6.6	6.6	5.98	5.32
Health care total	75.0	76.7	75.2	87.9	85.1	82.0	82.56	80.83
Benefits and assistance	12.6	16.1	4.6	6.0	11.6	14.2	12.19	13.55
Other expenditures	10.4	7.2	20.2	6.1	3.3	3.8	5.25	5.6
Total expenditures	100	100	100	100	100	100	100	100

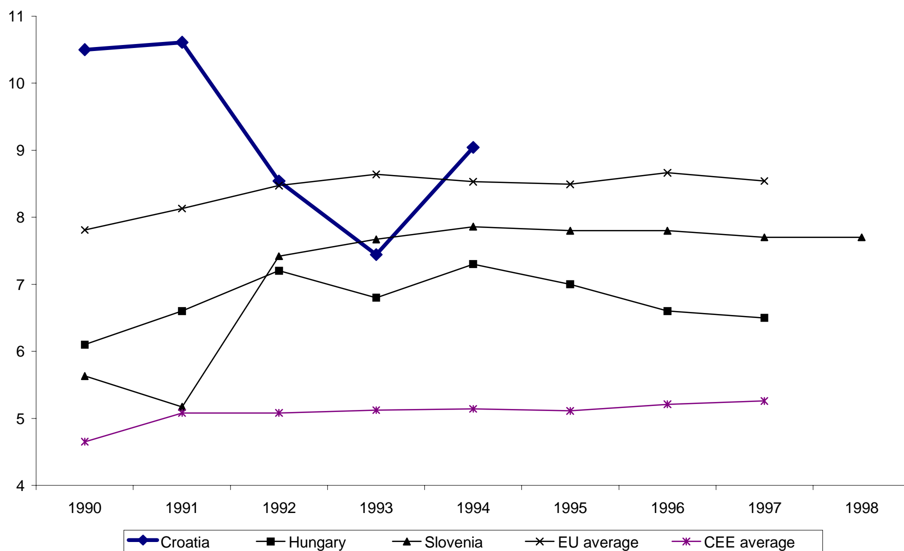
Source: Croatian Institute of Public Health.

Fig. 3. Total expenditure on health as a % of GDP in the WHO European region, 1998 or latest available year



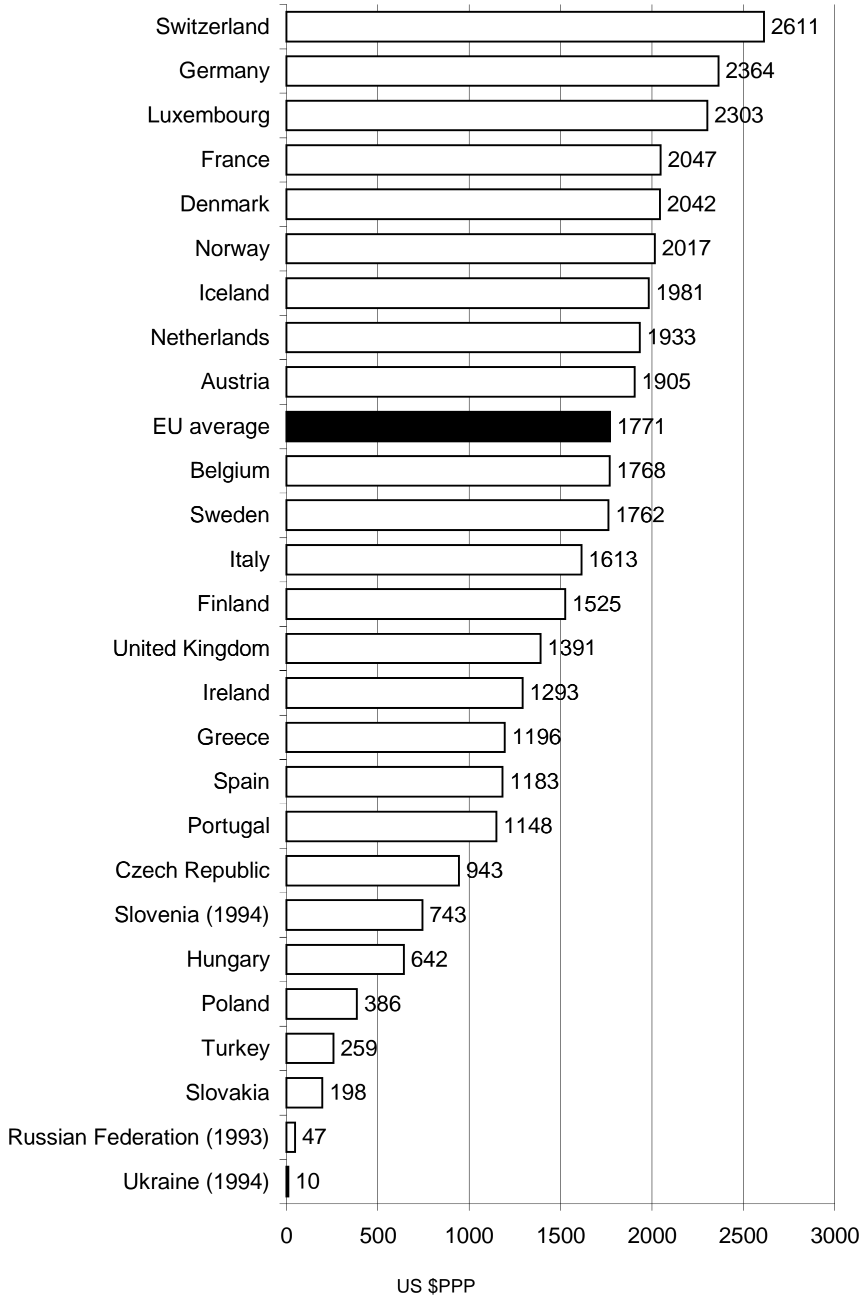
Source: WHO Regional Office for Europe health for all database.

Fig. 4. Trends in health care expenditure as a share of GDP (%) in Croatia and selected countries, 1990–1998



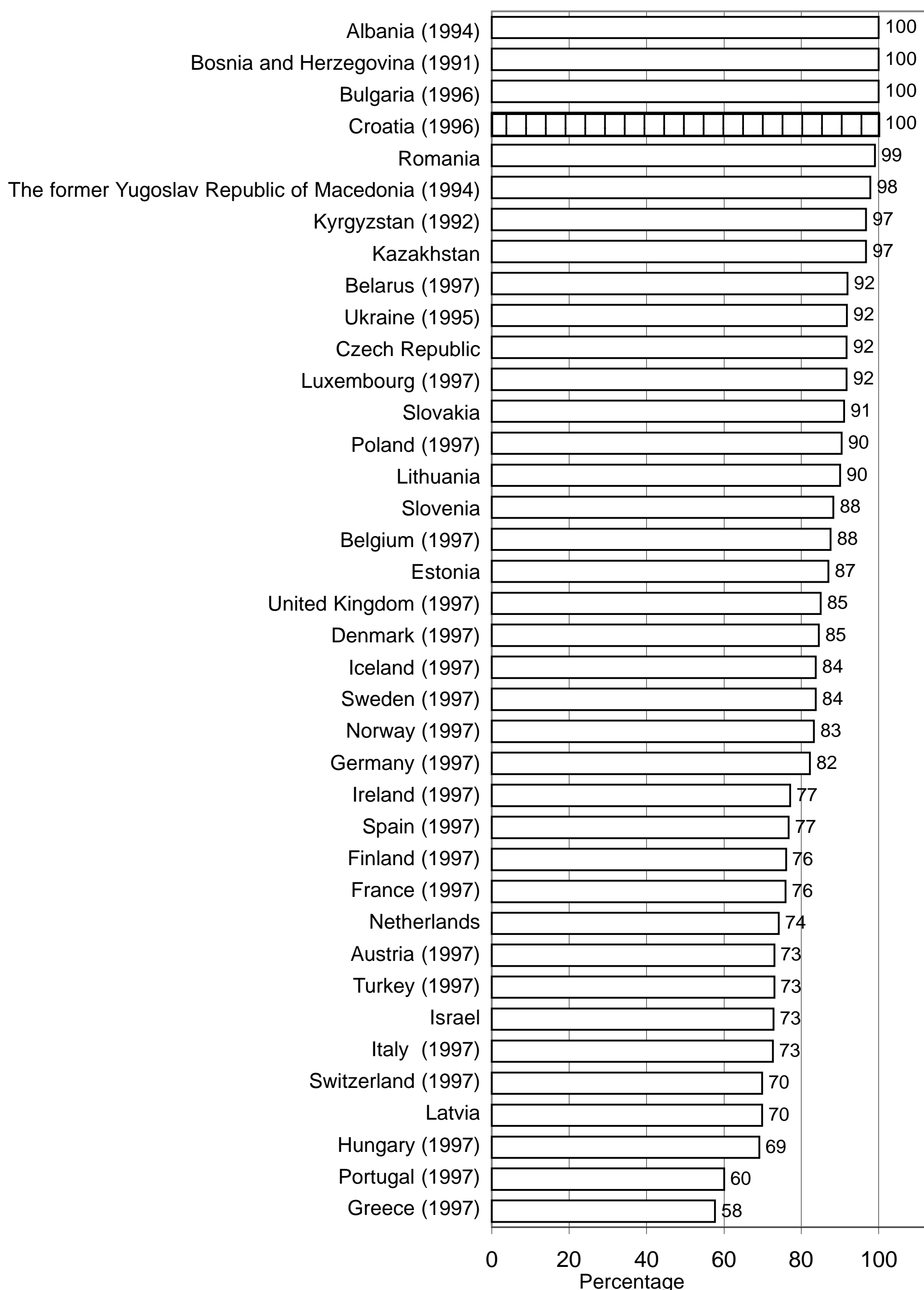
Source: WHO Regional Office for Europe health for all database.

Fig. 5. Health care expenditure in US $PPP per capita in the WHO European Region, 1997 or latest available year



Source: WHO Regional Office for Europe health for all database.

Fig. 6. Health expenditure from public sources as % of total health expenditure in the WHO European Region, 1998 or latest available year



Source: WHO Regional Office for Europe health for all database.

Health care delivery system

Primary health care and public health services

Primary care facilities

Primary health care is delivered through health centres, emergency care centres, home care centres (with visiting nurses), and pharmacies. Each municipality has one health centre with a network of primary health care units, dentistry and pharmacy services. Health centres provide general medical consultations, primary care gynaecology, care of pre-school children, school medicine and dental care. They are also responsible for ensuring that emergency medical care, diagnostic services (laboratory and radiological) and public health (hygiene and epidemiology) services are available within their catchment area. Some isolated rural health centres provide specialist outpatient services under the supervision of a hospital, and a very few also provide maternity care and temporary inpatient facilities. In addition, there are a growing number of private services such as general practitioners, visiting nurses, pharmacies and diagnostic services.

Primary care personnel and services

Primary health care is still organized around several medical specialties but is gradually moving towards a family doctor system. About one third of primary care doctors are specialists in general medicine, and a smaller proportion in family medicine. Primary care medicine also is regarded as including paediatricians for pre-school children, paediatricians for school-age children, occupational physicians, gynaecologists and emergency medicine specialists. Alongside these are pharmacists, nurses, physiotherapists, sanitary engineers and other middle-level health care staff. Doctors act as primary health care team leaders and about seven out of ten patient contacts are with doctors.

General practice is well established in Croatia and has its own specialist training and continuing education. In 1996, there were 0.68 primary care practitioners per 1000 population – a higher proportion than in the neighbouring countries of Hungary and Slovenia (WHO Regional Office for Europe health for all database). The aim is to increase the number of primary care doctors as part of the process of strengthening primary care. Further, the aim is that primary health care doctors rather than specialists will deal with the great majority of health problems.

Contracts with primary care doctors also include health promotion, preventive care such as immunization and screening, as well as diagnosis, treatment and rehabilitation. Primary care doctors and nurses also undertake home visits. Where there is no emergency medical service, a 24-hour on-call service is provided.

There were 6.1 physician contacts per person in Croatia (in 1997), which was in the low range of European countries (Fig. 7).

Problems and developments in primary care

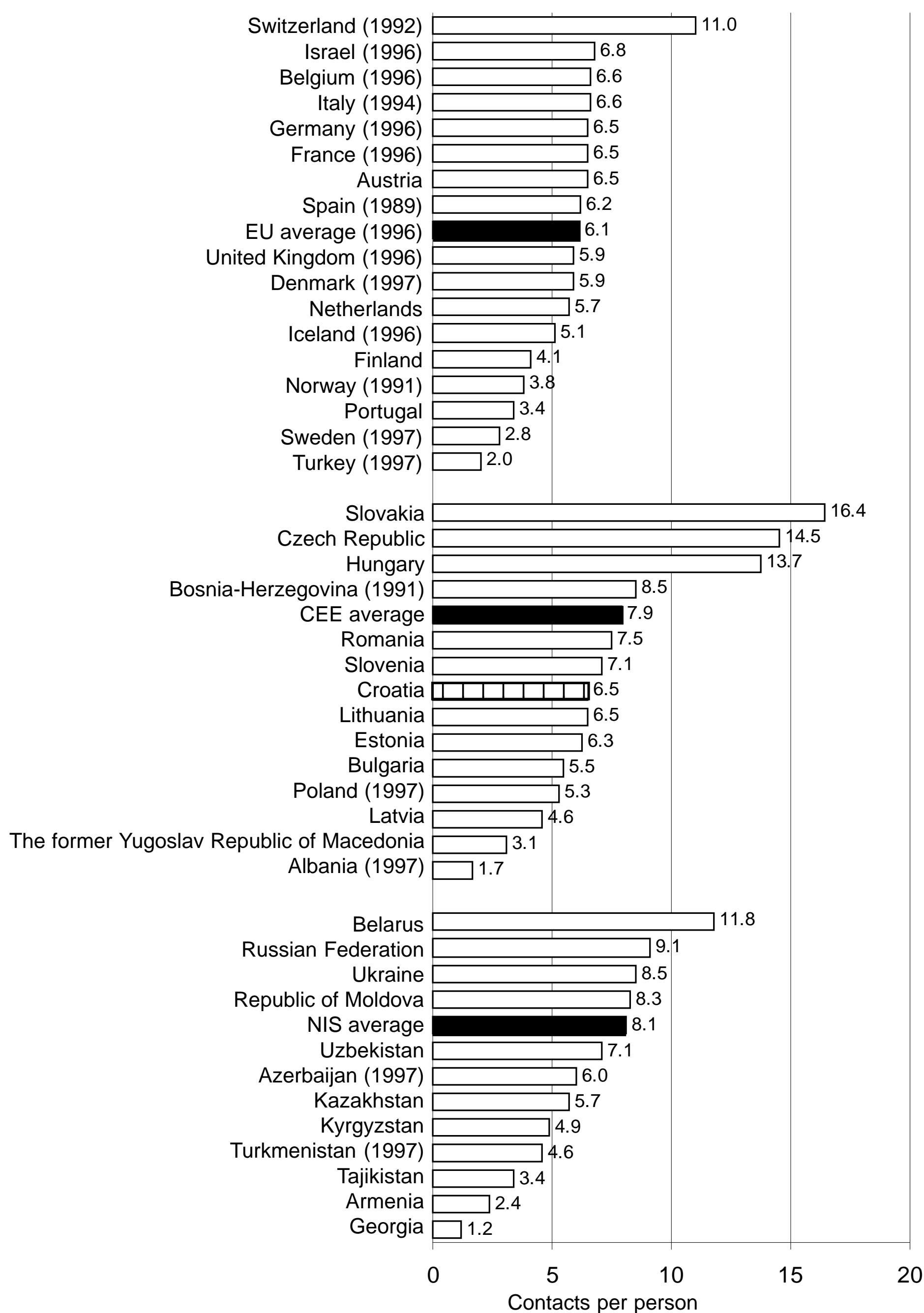
General practitioner-led primary health care is central to the newly organized health care system. Patients have a free choice of primary care doctor or dentist, but must obtain a referral for any specialist service. The primary care doctor acts as a gatekeeper to secondary care by a specialist, a polyclinic or a hospital. There are no formal restrictions on the referring doctor's choice of a secondary care service but, in practice, these services are relatively few.

Despite a legislative commitment to the principle of equal access to health services, there are still significant geographic inequities that reflect urban/rural divisions, differential economic development and population density. The new health legislation has addressed these problems by reducing the required population for a primary health care team and by offering the free lease of equipment and premises to private practitioners. There are attempts to repopulate and redevelop areas that were devastated or whose populations were displaced as a result of the war.

Legislative-regulatory basis

The 1993 Health Act and the 1993 Health Insurance Act state that primary health care services should maintain ongoing and direct contact with the entire population. Health standards have been enacted which define the type, form and quality of health care to which citizens are entitled. Further normative standards have been enacted – some on an annual basis, to ensure universal access to health care across the country.

Fig. 7. Outpatient contacts per person in the WHO European Region, 1998 or latest available year



Source: WHO Regional Office for Europe health for all database.

Planning standards specify the size of population to be covered by a primary health care team. There should be a family doctor, physician specialist and nurse for a population of 1700; a paediatrician and nurse for each 1000 children; a visiting nurse for each population of 5100; an emergency medical service should cover a population of 40 000. Detailed standards cover dentistry services, hygiene–epidemiology services, pharmacy services and laboratory services in addition to medical care. If a county wishes to improve upon these standards, they must finance the extra services from their own funds.

The first Croatian health project

The first Croatian health project, which started in August 1994, is funded by the World Bank and Croatian Health Insurance Institute, and undertakes various activities intended to improve health care. Under the sub-project "Expansion of Primary Health Care Services", the main emphases are on achieving better coverage of the country by primary health care units, on training personnel (particularly in diagnostic procedures) and providing better equipment for primary health care units.

Another sub-project "Emergency Medical Care" trains staff in emergency medical care, purchases modern vehicles and equips ambulances for the emergency medical service. Additional funds will be dedicated to improving telecommunications capacity. A "Health Promotion" sub-project is training primary health care practitioners as the main providers of health education to the general population. It has also funded a modest mass media campaign.

Privatization of primary health care

The privatization of primary health care (except for emergency services and public health services) is under way following regulations issued by the Minister of Health in January 1996. Doctors are moving towards the status of independent contractors, either in sole or in group practices. Primary care doctors, dental practitioners, pharmacists and dental technicians can rent facilities from health centres for their practices and enter into contracts with the Croatian Health Insurance Institute. The contract covers the basic cost of providing a direct health care service to patients and associated maintenance costs. To obtain a Ministry of Health authorization for private practice, a health professional must meet certain requirements (including a minimum number of registered patients) and must offer a minimum range of health services.

Private and public providers of primary health care (general practitioners, district nursing agencies, pharmacies and diagnostic services) can contract with the Croatian Health Insurance Fund, and also with private insurance funds and

employers. By the end of 1993, there were over 400 private medical practices and over 600 by 1995. The number of private dentists has increased (to almost 1000 by 1995), as has the number of pharmacists and dental technicians. The number of primary care professionals in private practice has doubled annually since 1991. This increase has been accompanied by a decline in the number employed in public institutions. Precise figures are not available but the Ministry of Health estimates that 30% of doctors were in private practice in 1997.

Leasing of primary health care facilities

The leasing of health centre facilities has avoided the sale of capital and equipment, which remain the property of the county authorities. Leasing also avoids burdening newly independent practitioners with the costs of purchasing facilities. Premises and equipment are leased under very favourable conditions with a maximum monthly rent determined each year by the Minister of Health. The lease includes equipment, premises and reimbursement of dispensed drugs. In some locations, county authorities and health centres lease at a very low rent, or no rent at all, as an incentive to practice in less attractive areas.

Public health components of the health centres remain the responsibility of the public sector. These include school health services, occupational health, social health such as sexually transmitted diseases, medical education, emergency care, community nursing and maternity care. Also some secondary care such as dialysis facilities, inpatient beds and operating rooms remain public sector functions.

The intention is to lease all general medical, specialist medical, dental and pharmacy units within health centres, as well as dental prosthetic laboratories and diagnostic facilities. The main exceptions are units that employ staff close to retirement age, and where staff do not want to enter a contract arrangement.

This approach to privatization aims to motivate primary health care doctors to improve the quality of their services, to maintain public ownership of the health services infrastructure and to keep public health functions within the health centres.

Public health services

Public health services in Croatia have a long-standing and capable tradition. Public health is the responsibility of the Croatian Public Health Institute and the county public health institutes which each have legally defined functions. The county public health institutes are financed directly from the Ministry of Health, from their respective county budgets, through contracts with the Croatian Health Insurance Institute and from fees for specific services.

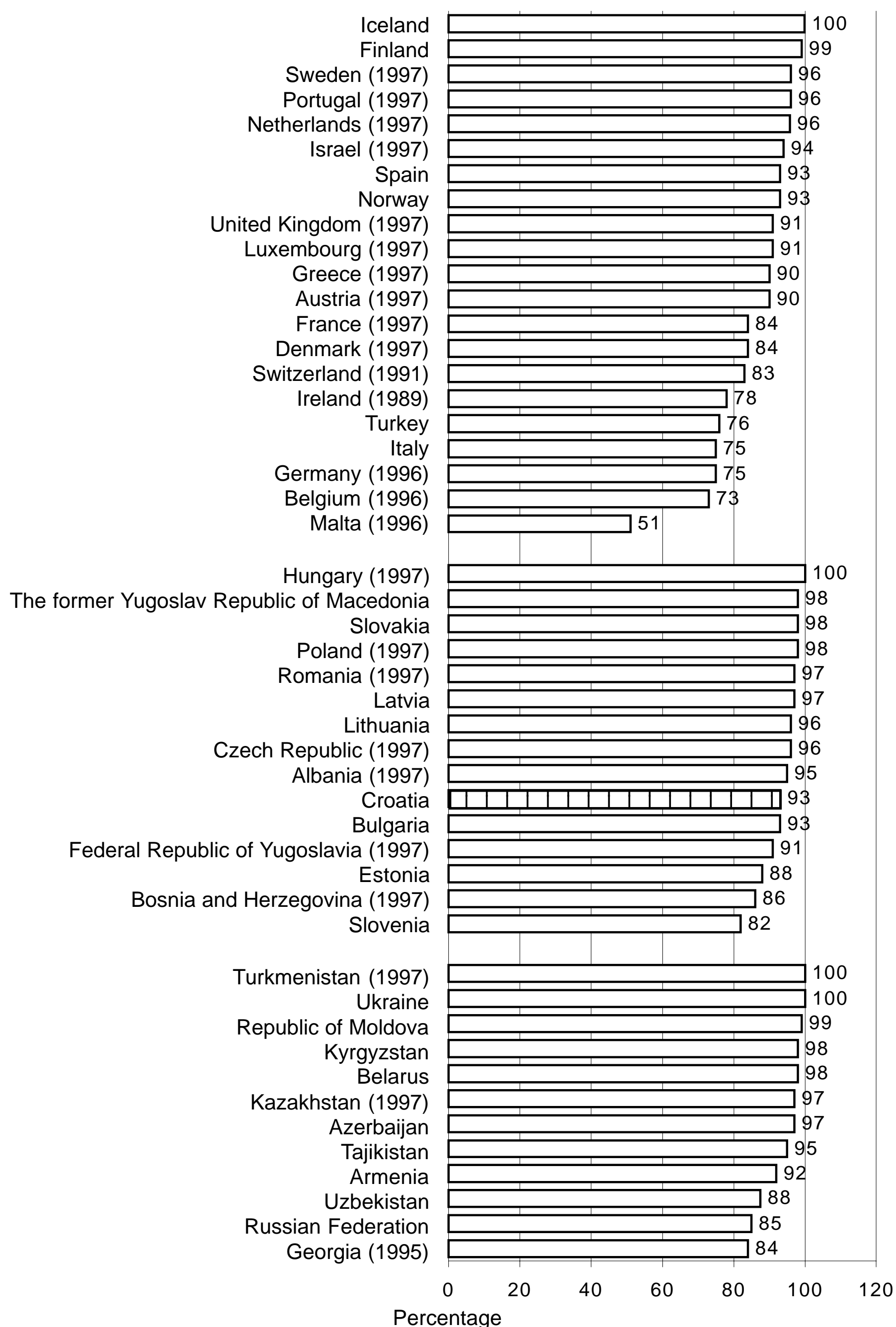
At a national level, the Croatian Public Health Institute is responsible for the analysis of statistics and epidemiological data, for health promotion and health education. It also maintains a number of public health registers on cancer, schizophrenia, acute myocardial infarction, diabetes, AIDS and intravenous drug abuse. The Institute proposes national anti-epidemic measures, supervises compulsory immunizations, supervises pest control, monitors environmental pollution and wastewater, and sets standards and tests food safety and drinking water. It participates in research, in the education of health personnel, and advises on health legislation. Two other national bodies with significant public health roles are the Croatian Institute for Radiation Protection and the Croatian Institute of Toxicology. The Croatian Public Health Institute coordinates and supervises all public health institutes. A similar relationship exists between the central and local bodies that are responsible for blood transfusions and for occupational health.

The 21 county public health institutes and Zagreb Public Health Institute collect data, deal with hygiene and disease control and have an expanding public health promotion role. Planning guidelines call for one epidemiologist for a population of 50 000. A fully-staffed local health department has the following: an epidemiologist, social medicine specialist (perinatal mortality, elderly, STD/HIV), health ecology staff (sanitarians, toxicologist, food safety, water safety), microbiology facilities (laboratories and specimen collection), school health services (including health promotion), health statistics, administration and management. In addition, the capacity of local health departments in screening programmes and health promotion has been improved.

Croatia has maintained a good system of basic public health services. For example, the reasonably high levels of immunization, as for measles (Fig. 8), have continued although there is room for improvement. New approaches to public health are now required, however, such as more emphasis upon health promotion.

The First Croatian Health Project has a sub-project aimed at health promotion, which is intended to include more modern approaches to health education and to encourage healthier lifestyles. It is hoped to control major risk factors, such as tobacco smoking and alcohol misuse, and to encourage better nutrition and more physical activity. The Healthy Cities project has been active since 1986, the Countrywide integrated noncommunicable disease intervention (CINDI) project since 1992, and Health Promoting Schools since 1993. Other recent developments in the area of public health include the Country Health Development Programme and the National Health Action Plan. A baseline survey of the health of the Croatian population has been completed and the results are being analysed.

Fig. 8. Levels of immunization for measles in the WHO European Region, 1998 or latest available year



Source: WHO Regional Office for Europe health for all database.

Secondary and tertiary care

Secondary care facilities include hospitals, sanatoria and polyclinics. Hospitals (84 in 1997) are divided into general hospitals and specialist hospitals. General hospitals have facilities for obstetrics and gynaecology, internal medicine, surgery and inpatient paediatric care. Specialist hospitals are organized around specific diseases, chronic illnesses or population groups. In addition to inpatient facilities, hospitals also have outpatient departments providing ambulatory services. Croatia also has a number of sanatoria (spas) which make use of natural elements such as water, mud, sand or sea in combination with physiotherapy and massage, in order to provide preventive health care and rehabilitation.

Tertiary care is provided in university clinics, clinical hospitals and clinical hospital centres that also engage in medical education and research. University clinics carry out the most complex activities in a specific branch of medicine. These centres of excellence within their field have an obligation to develop their expertise and to provide support to other health care institutions. A new tertiary care hospital is being built on the outskirts of Zagreb.

Clinical hospitals are general hospitals with at least two specialties at teaching hospital level. Clinical hospital centres are general hospitals in which more than half of the units are at teaching hospital level, and which carry out university education in over half of the teaching programme through faculties of medicine, dentistry, pharmacy and biology.

The hospital network covers the entire country with general hospitals in all but two of the 21 counties. However, some islands and some areas recaptured during the war are still without maternity or inpatient facilities.

Contracts with the Croatian Health Insurance Institute finance 90% of hospital activities. Most hospitals are public sector institutions including some voluntary sector (not-for-profit hospitals). Currently, there is no policy intention to privatize existing hospitals but private capital could be used to set up new private hospitals.

The Minister of Health determines which institutions are classified as clinics, clinical hospitals and clinical hospital centres. The National Health Council accredits hospitals that meet certain normative standards set by the medical associations.

Polyclinics (about 78 in 1997) provide ambulatory specialist consultation, diagnostic and rehabilitation services. State polyclinics are linked to general and clinical hospitals. Private polyclinics and privatized specialist practice in some health centres are being developed.

Changes in the provision of secondary care

The population ratio of hospital beds in Croatia is closer to the western European than the central and eastern European average, as shown in Figs. 9 and 10. There were 7.4 hospital beds per 1000 population in 1990, which dropped to 5.9 in 1994 (31 000 beds), rose slightly to 6.2 beds in 1996 and fell again in 1997 (Table 6). The decline in hospital beds was partly a result of policy and partly a result of the war. During the conflict, 29 hospitals and 3 rehabilitation centres – a total of over 3000 beds – were destroyed and a great deal of equipment was damaged. With World Bank assistance, much of this medical technology and capital is now being repaired. In addition, the vast majority of diagnostic, radiological, laboratory and intensive care equipment is obsolete, and the plan is to renew or replace this by the year 2000.

Table 6. Inpatient utilization and performance, 1980–1997

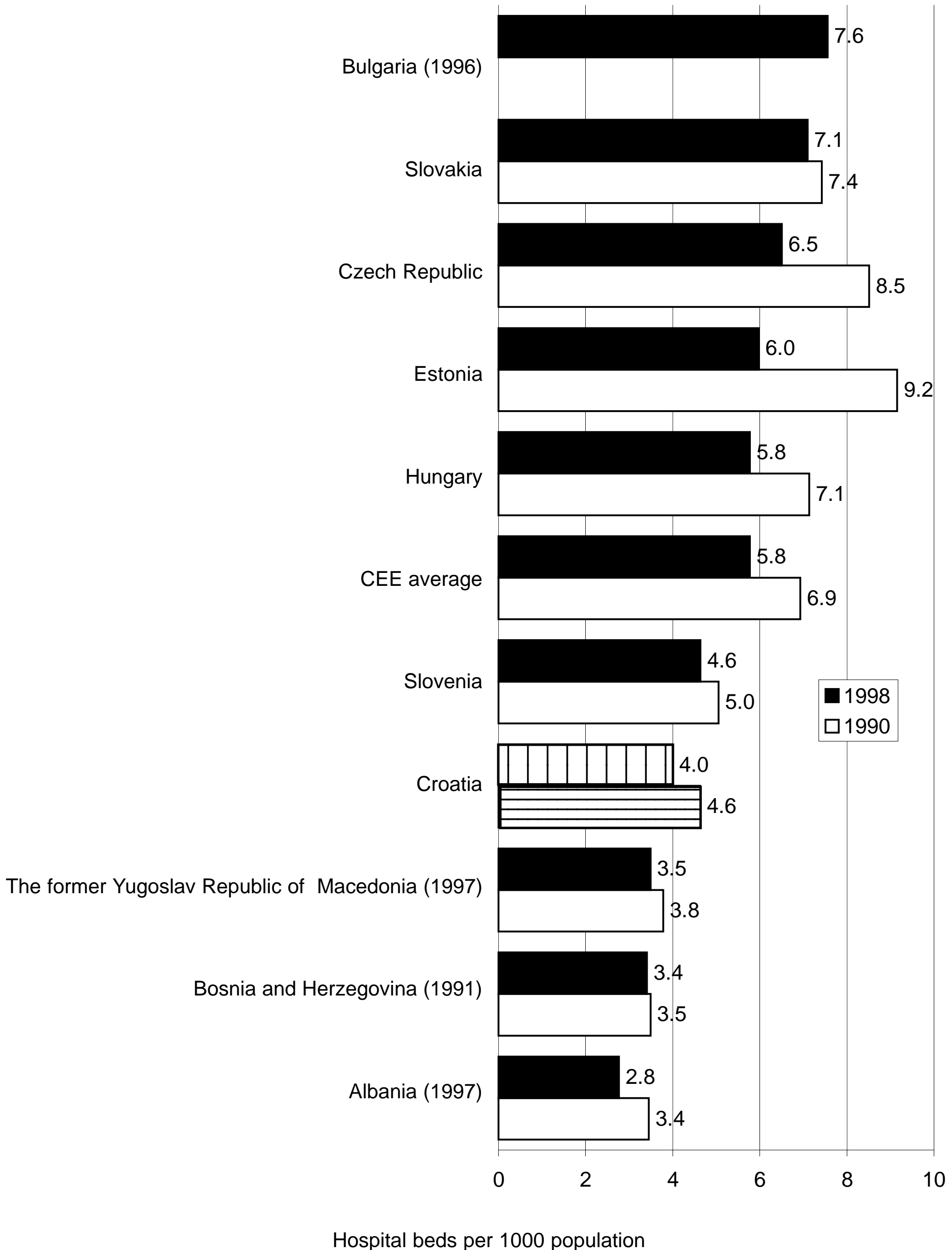
Inpatient	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997
Hospital beds per 1000 population	7.23	7.45	7.38	6.52	6.21	6.07	5.91	5.75	6.19	5.4
Admissions per 100 population	13.89	15.03	15.35	12.64	11.73	11.85	12.78	13.44	14.83	13.32
Average length of stay in days	–	–	15.4	14. 5	15.2	14.5	13. 8	13.2	13.4	12.9
Average length of stay – acute care	–	–	11.9	10.9	10.9	10.4	10.3	10.2	10.3	9.8
Bed occupancy rate – acute care	89.9	89.6	87.7	78.0	77.5	75.3	81.1	87.4	89.6	89.3

Source: WHO Regional Office for Europe health for all database; Ministry of Health.

The number of hospital beds was reduced further from 6.2 per 1000 population in 1996 to 5.4 in 1997, including a reduction in acute hospital beds. The Croatian Health Insurance Institute has laid down standards for the average length of stay in hospital. This has been reduced from 14.5 days in 1993 to 12.9 days in 1997, while the bed occupancy rate has risen, which suggests that productivity has improved. The length of stay is still somewhat longer than in some western European countries (as shown in Table 7).

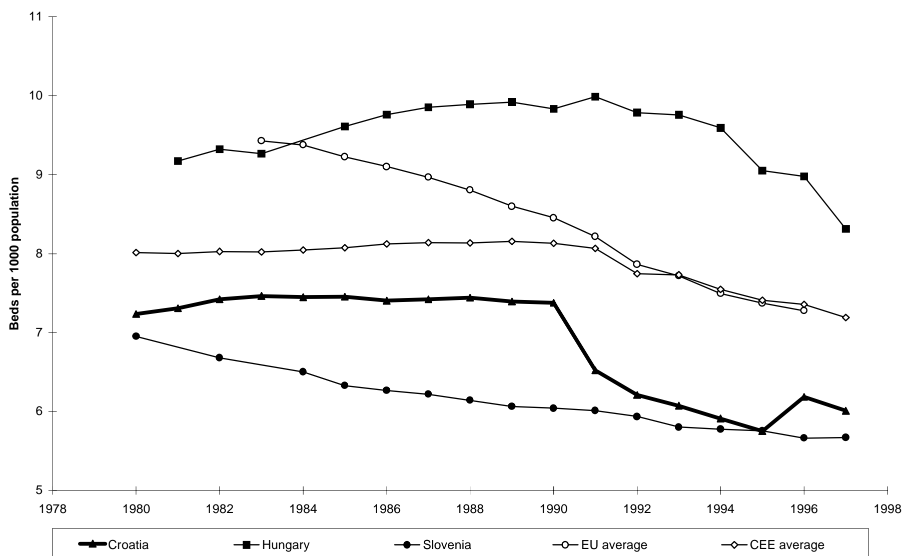
Standards have also been laid down for ambulatory specialist consultations. During the period from 1990 to 1994, polyclinic consultations decreased, possibly as a result of improvements in primary care services. During the same period, part of the specialist ambulatory care network was privatized. Some specialists leased facilities for their private practices from county health centres, others opened practices in private facilities. Some ambulatory specialists have contracted with the Croatian Health Insurance Institute, while others derive their income entirely from private sources.

Fig. 9. Hospital beds in acute hospitals per 1000 population in central and eastern Europe, 1990 and 1998 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Fig. 10. Hospital beds per 1000 population in Croatia and selected countries, 1980–1997



Source: WHO Regional Office for Europe health for all database.

War time health services

The Ministry of Health created a medical corps during the years of conflict (principally during 1991–1992) to care for persons injured during the war. During those years, 9941 people were killed and 28 734 were wounded, many requiring amputations (*22*). Together with military volunteer groups, volunteer health professionals formed military sanitary groups. Hospitals located near the front line were designated military hospitals by the Ministry of Health. Their priority was to care for wounded combatants and civilians. Hospitals further from the battlefield admitted the war-wounded for further care. The Croatian military had no prior experience of running a military health service and a crisis headquarters for health oversaw a rapid reorganization of the civilian health care services in order to deal with both civilian and military casualties. Other health services undertook care of displaced persons, refugees and other civilian populations.

Table 7. Inpatient utilization and performance in acute hospitals in the WHO European Region, 1998 or latest available year

Country	Hospital beds per 1000 population	Admissions per 100 population	Average length of stay in days	Occupancy rate (%)
Western Europe				
Austria	6.4[a]	24.7[a]	7.1[a]	74.0[a]
Belgium	5.2[b]	18.0[b]	7.5[b]	80.6[c]
Denmark	3.6[b]	18.8[b]	5.6[b]	81.0[b]
Finland	2.4	20.5	4.7	74.0[c]
France	4.3[a]	20.3[c]	6.0[b]	75.7[a]
Germany	7.1[a]	19.6[a]	11.0[a]	76.6[a]
Greece	3.9[f]	–	–	–
Iceland	3.8[c]	18.1[c]	6.8[c]	–
Ireland	3.4[a]	14.9[b]	6.7[b]	82.3[b]
Israel	2.3	18.4	4.2	94.0
Italy	4.6[a]	16.5[a]	7.0[a]	76.0[a]
Luxembourg	5.6[a]	18.4[d]	9.8[b]	74.3[d]
Malta	3.9[a]	–	4.5	72.2[a]
Netherlands	3.4	9.2	8.3	61.3
Norway	3.3	14.7[b]	6.5[b]	81.1[b]
Portugal	3.1	11.9	7.3	75.5
Spain	3.1[c]	10.7[c]	8.5[b]	76.4[c]
Sweden	2.7[a]	16.0[b]	5.1[b]	77.5[b]
Switzerland	5.2[b]	14.2[e]	11.0[a]	84.0[a]
Turkey	1.8	7.1	5.5	57.3
United Kingdom	2.0[b]	21.4[b]	4.8[b]	–
CCEE				
Albania	2.8[a]	–	–	–
Bosnia and Herzegovina	3.4[g]	7.4[g]	9.7[g]	70.9[g]
Bulgaria	7.6[b]	14.8[b]	10.7[b]	64.1[b]
Croatia	4.0	13.4	9.6	88.2
Czech Republic	6.5	18.4	8.8	70.8
Estonia	6.0	17.9	8.8	74.6
Hungary	5.8	21.7	8.5	75.8
Latvia	–	–	–	–
Lithuania	–	–	–	–
Poland	–	–	–	–
Romania	–	–	–	–
Slovakia	7.1	19.3	10.3	77.9
Slovenia	4.6	15.9	7.9	75.4
The former Yugoslav Republic of Macedonia	3.5[a]	8.1	8.9	66.5
NIS				
Armenia	6.0	6.0	10.7	30.2
Azerbaijan	8.0	5.6	–	–
Belarus	–	–	–	88.7[d]
Georgia	4.6[b]	4.8[b]	8.3[b]	26.8[d]
Kazakhstan	6.6	14.9	13.0	91.2
Kyrgyzstan	6.7	15.8	12.9	81.7
Republic of Moldova	9.1	16.9	15.4	77.6
Russian Federation	9.0	19.9	14.0	82.5
Tajikistan	6.2	9.7	13.0	59.9[b]
Turkmenistan	6.0[a]	12.4[a]	11.1[a]	72.1[a]
Ukraine	7.4	17.9	13.4	88.1
Uzbekistan	–	–	–	–

Source: WHO Regional Office for Europe health for all database.
Note: [a] 1997, [b] 1996, [c] 1995, [d] 1994, [e] 1993, [f] 1992, [g] 1991, [h] 1990.

Staff were rapidly retrained and the service was organized with considerable success. For example, there were no recorded epidemics of infectious diseases during the entire period of war. At the end of the war, most health resources were returned to the civilian health care system.

The fact that the health care system survived the war is, in large measure, due to the enormous efforts and sacrifices of health professionals themselves. This was coupled with a high level of commitment, and good organization and management at all levels, from the Ministry of Health down to individual health institutions. There were also considerable international donations of drugs and sanitary material. The hope is that the commitment and enterprise demonstrated by health professionals during wartime will carry over to the peacetime re-organization of health care services.

Social care

The system of social care in Croatia is not adequate at present. There is only limited provision for the dependent elderly on low incomes, and for those with special needs such as the mentally or physically handicapped. As a result, people who need social care fill beds in long-term care hospitals. It is planned to reduce the number of long-term care beds, to provide better medical care within social care facilities such as residential homes, and to provide better domiciliary care to support people in their own homes.

The care of people suffering from serious long-term illness, or from severe disabilities, is covered by health insurance through contracts with inpatient facilities for long-term care (such as psychiatric and geriatric hospital departments). Health care for persons in social care institutions is provided separately through contracts with health teams in these institutions or through contracts with local health centres.

Home care is provided mostly by visiting nurses based in health centres. In 1994 and 1995 a number of private home care agencies were created. These are usually owned by a nurse or physiotherapist and employ one or two physicians, registered nurses, medical technicians, some social workers and from ten to thirty auxiliary nurses. By the end of 1995 there were fourteen home care agencies employing over 600 nurses under contract with the Croatian Health Insurance Institute and about 132 private nurses. This form of provision is expected to increase.

Human resources and training

Undergraduate medical education takes place at three medical schools in Zagreb, and one each in the regional centres of Osijek, Rijeka and Split. Since 1989 the undergraduate medical degree has taken six years and there is greater emphasis on practical work and independent problem solving. Following graduation, physicians must undertake a two-year internship and pass a state examination before they can practice. Further specialization takes place after the internship. Since 1961 it has been possible to specialize in general practice, which takes three years, with training now moving towards the family medicine model.

The professional chambers for medicine, pharmacy, dentistry and medical biochemistry are responsible for promoting professionalism among their members. The chambers are responsible for accrediting professionals, who must also be reaccredited every seven years.

Croatia has a national nursing association and a system of registration for nurse certificates (but not for accreditation). Croatia also has a chief nurse post in the Ministry of Health. The training of nurses has recently been upgraded. The minimum age of entry is now 18 and nursing education takes three years at college level. Practical and theoretical education runs in parallel. A BSc Nursing degree has recently been introduced, in addition to a Masters degree. Recent reforms have also introduced postgraduate specialization for nurses, in midwifery, paediatric nursing and mental health nursing.

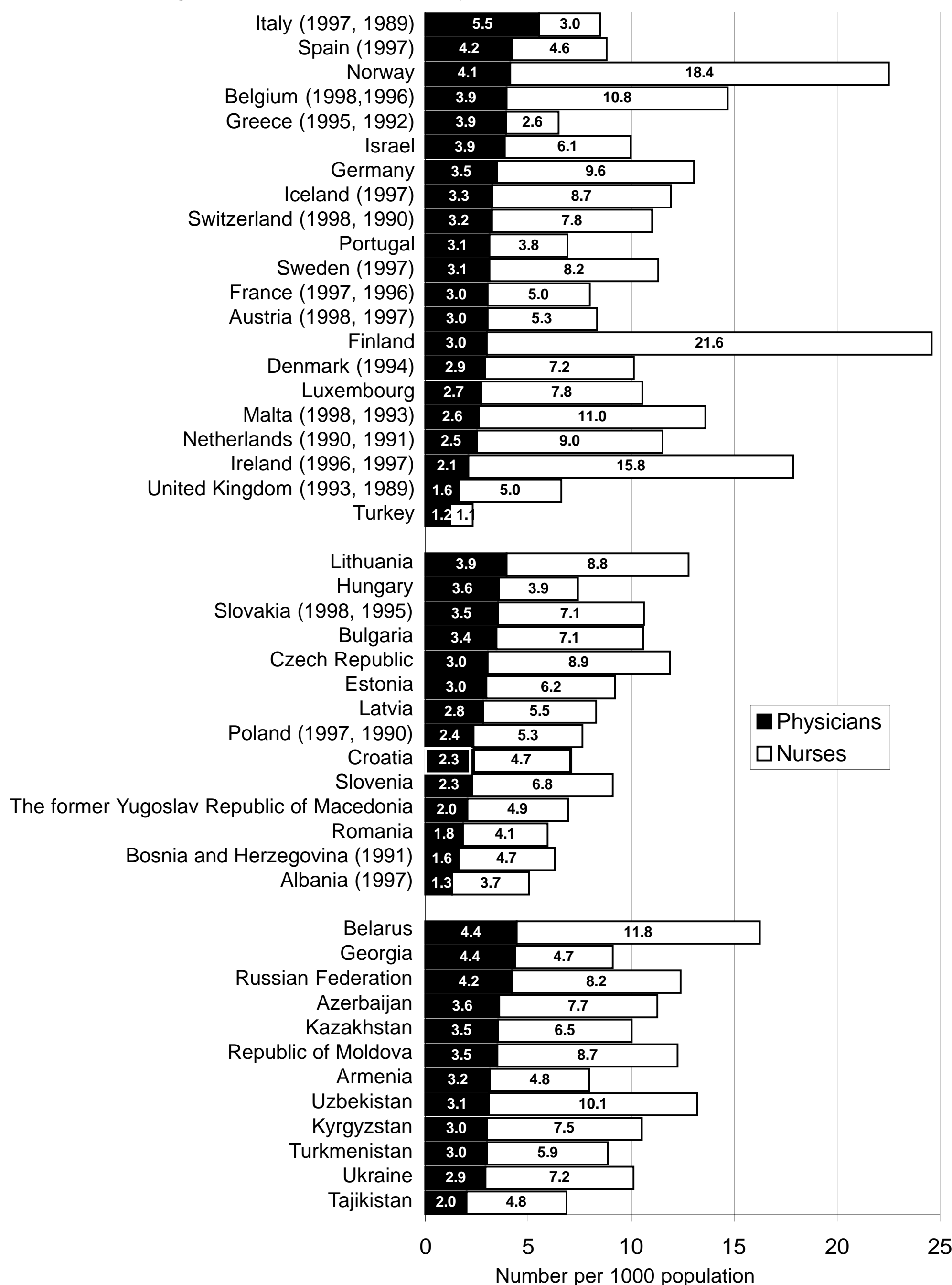
There is greater emphasis on continuing professional education for health professionals and for health service managers. Loans from the World Bank for health sector reforms included funds for continuing professional education and for education in health management and health promotion.

Croatia had 2.3 doctors per 1000 population in 1997 (Table 8) which is well below the EU average and below the average for central and eastern European countries, as shown in Figs. 11 and 12. The population ratio of doctors has risen slightly between 1989 and 1997. There were 4.6 nurses per 1000 population in 1997, which was low compared to both the EU and the CEE average. The recruitment and retention of nurses therefore requires attention.

Since 1985, the main method of controlling numbers of health professionals has been to adjust the enrolment quotas in medical and health education facilities. The population ratio of medical graduates remained fairly constant between 1989 and 1997 (Table 8).

Between 1990 and 1995 the number of health care employees in public service institutions declined by about one fifth. These were mainly dentists and lesser-qualified staff and smaller numbers of physicians, pharmacists and health professionals with a university level education. Over the same time

Fig. 11. Number of physicians and nurses per 1000 population in the WHO European Region, 1998 or latest available year



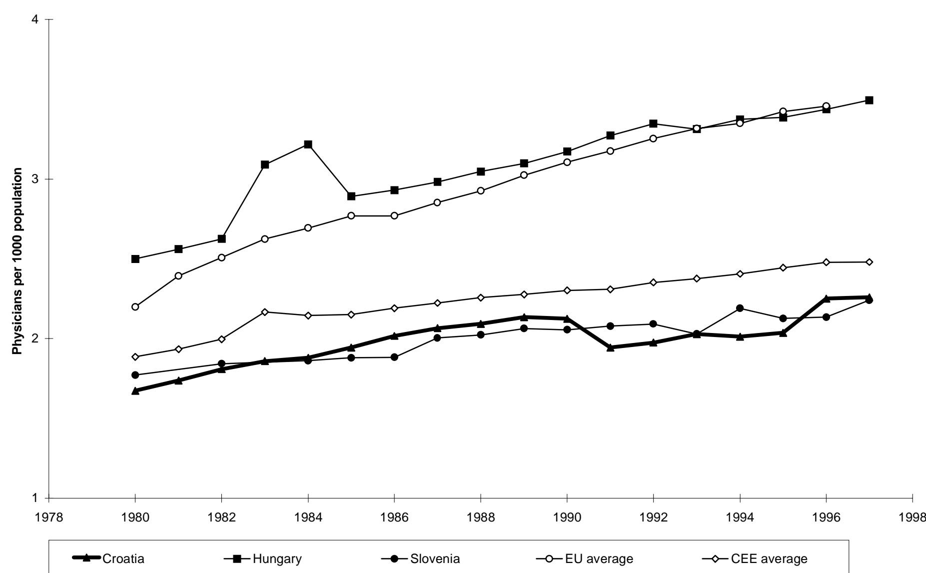
Source: WHO Regional Office for Europe health for all database.

Table 8. Health care personnel, Croatia, 1989–1997

Per 1000 population	1989	1990	1991	1992	1993	1994	1995	1996	1997
Physicians	2.13	2.12	1.94	1.98	2.02	2.01	2.03	2.24	2.26
Dentists	0.48	0.47	0.43	0.43	0.56	0.54	0.56	0.62	0.62
Qualified Nurses	4.99	5.06	4.54	4.45	4.24	4.12	4.04	4.42	4.56
Midwives	0.39	0.36	0.33	0.32	0.32	0.31	0.29	0.31	0.32
Pharmacists	0.40	0.39	0.36	0.37	0.38	0.36	0.37	0.41	0.43
Physicians Graduating	0.12	0.08	0.06	0.11	0.08	0.09	0.09	0.14	0.10
Nurses Graduating	–	–	–	–	–	–	–	–	–

Source: WHO Regional Office for Europe health for all database.

Fig. 12. Physicians per 1000 population in Croatia and selected countries, 1980–1997



Source: WHO Regional Office for Europe health for all database.

period, the number of administrative personnel also declined by just under one fifth, but as a proportion remained at about one third of health service employees.

Salaries have risen since the war ended but remain relatively low. This is a major issue for health sector reform since low salaries may lead to the loss of professionals from the health sector and to a growing shift from the public to the private sector. Gross salaries of health personnel represented 40–50% of public sector health expenditures in 1990, but had increased to about 60% of health care spending by 1996. Physician and dentist salaries are about 50% higher than nurse salaries.

The need for additional health personnel to staff facilities in areas recaptured following the war is a current problem. There were about 2000 doctors in these areas in 1990. It is also current policy to encourage health personnel to work in sparsely populated areas such as the islands along the Croatian coast.

Pharmaceuticals and health care technology assessment

The Ministry of Health carries out the registration of drugs upon application from the manufacturers or importers. The Croatian Health Insurance Institute then decides whether to include the drug on its list of reimbursed drugs upon advice from an internal committee which includes representatives of the medical profession. The price of these drugs is set after an international public bidding procedure.

The pharmaceutical industry, which was badly affected by the war, has largely been privatized and is seeking to increase exports to the European Union. Expenditure on drugs increased in Croatia, from 7% of total health expenditure in 1990 to 16% in 1997, partly due to the increasing cost and volume of foreign imports (see Table 5).

Pharmacies have largely been privatized mostly by renting existing pharmacy premises to private pharmacists. New private pharmacies have also opened in their own premises. Privatization has largely been successful in improving the supply of and access to drugs, but the undesirable consequence has been that pharmaceutical expenditure has increased.

The Unit for Professional Supervision in the Ministry of Health regulates the introduction of new diagnostic and therapeutic procedures. There is as yet no formal system of health technology assessment in Croatia.

Financial resource allocation

Third party budget setting and resource allocation

There are three main avenues for resource allocation: insurance funds, the state budget and county revenues (Fig. 13).

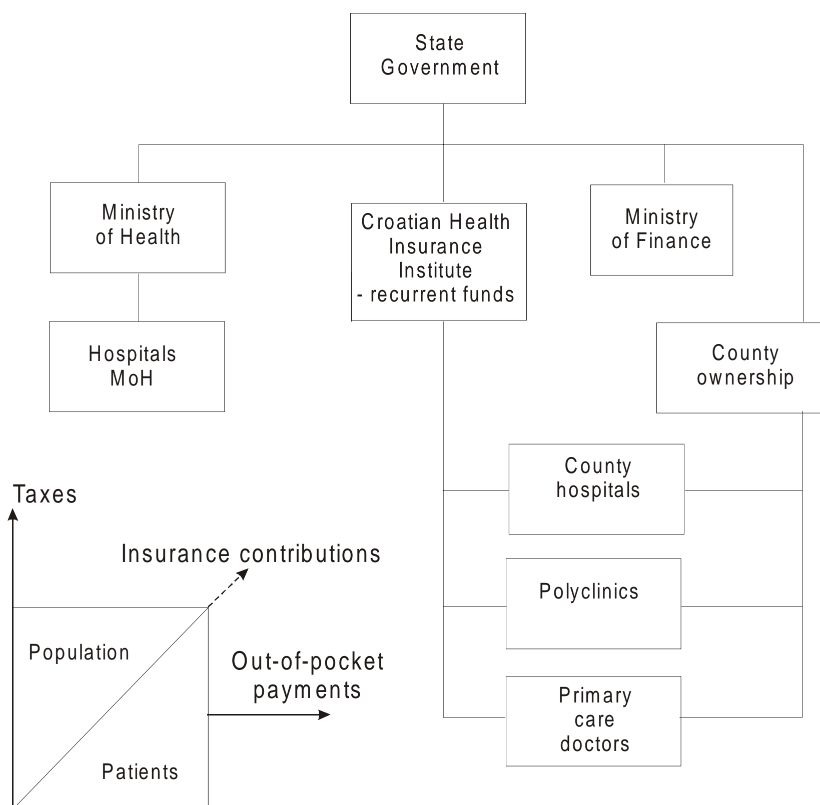
Health insurance contribution rates are negotiated annually between the Ministry of Health, the Ministry of Finance and the Croatian Health Insurance Institute. These rates must be ratified by parliament. The state must take responsibility for any deficit incurred by the health insurance fund. If insurance contributions are delayed, the Croatian Health Insurance Institute may withdraw health care coverage from an individual.

The Croatian Health Insurance Institute distributes resources according to the agreed contracts with health care providers such as a hospital. These contracts set out the specified services, their scope, quality and schedules, subject to the guidelines set out in the government's national health plan, and also set out requirements for cost accounting and payment.

The Ministry of Health and the Ministry of Finance decide the state's annual budgetary contribution towards health care, which is then ratified by parliament. State funds amount to 5% of total public sector health care expenditure and are mainly tied to tertiary health care, public health activities and capital investment. The counties also contribute from their own revenue towards the capital costs of the facilities that they own.

One problem that remains to be addressed is the unequal geographic distribution of and, in some cases, unequal access to health services. In practice, insurance funds flow to areas that have more facilities. A second problem is the restricted funding sources for capital investment.

Fig. 13. Financing flow chart



Payment of hospitals

Hospitals are no longer allocated a budget from the state on the basis of their facilities and staff, but are paid by the Croatian Health Insurance Institute according to the services provided. This is also the case for polyclinics, health centres and private practices with contracts with the institute. Payments are expected to cover recurrent costs such as salaries, drugs and consumables. Capital expenditure remains the responsibility of the owner of the hospital: the Ministry of Health in the case of clinical hospitals, and the counties in the case of general hospitals, special hospitals, polyclinics and health centres.

The contract takes into account several elements: the contracted number of beds, 'hotel' costs such as food, staff salaries, the cost of drugs and a fee-for-service element. The latter is based upon a points system according to the skill mix of health professionals and time needed for each procedure. There is an

exhaustive list (over 90 000) of procedures and their point values. To calculate the point value of a bed-day, hospitals are classified into three groups (general hospitals, regional centres and university hospitals); also different points are allocated to different specialities. The value of a point is adjusted in relation to the income of the Croatian Health Insurance Institute, so that in a period of low income the value of a point is lower than in a period of high income.

Payment of physicians

Physician salaries in public sector institutions are determined by a national pay scale. Income depends on professional qualification which determines the coefficient by which the "basic salary" (the salary of a cleaner) should be multiplied.

Payment of contracted physicians in primary care is based on a mixed capitation and fee for service system. Since 1998, the capitation element has taken patient age into account. For services not covered by insurance, providers may charge the fee indicated by the Croatian Health Insurance Institute price list. Payment of contracted physicians in secondary care is also based upon a fee for service.

Health care reforms

Health care reforms in Croatia have been influenced by a number of specific circumstances. Croatia is a newly independent country, is in a state of economic and political transition, and has been engaged in a war. Reform of the Croatian health care system began in 1990 following multi-party elections, while other reform proposals evolved out of the Croatian health for all strategy prepared by the Ministry of Health in 1991.

Plans were drawn up to reorganize the health sector, in consultation with WHO advisors and drawing on the experience of health reforms in other countries. Closer collaboration with other countries was planned and the quality of health care was to be improved in accordance with WHO and EU recommendations. The early priorities were to create a legislative framework for reform and to establish a financially viable health insurance system. (The previous system had accumulated large debts.) This process was interrupted by the outbreak of war.

The financial stability of the Croatian health care system was put under pressure in 1992 when only 25% of the 1990 level funds were available, and this level of funding (abut 7% of GDP) has continued throughout the 1990s. Despite predictions of collapse, health care facilities managed to survive without mass redundancies or closures although there were real wage reductions.

Aims and objectives

The main intentions of reform were to improve the health status of the population, replace the fragmented health insurance system, privatize some primary health care personnel and facilities, reinforce primary health care and health promotion, and address the considerable variation in access to health care. In addition, the intention was to bring health care more in line with that in western Europe while remaining sensitive to national circumstances.

A health insurance fund was created in order to reduce reliance on a single source of finances. State and country institutions took over ownership of health facilities that previously had suffered under a chaotic form of self-management.

The reforms have moved towards the kind of systems seen in western Europe, with guarantees of equity but using competitive principles to improve efficiency. The promotion of efficiency was particularly important given the acute economic crisis that the country was facing.

Reform implementation

Reforms were implemented in phases. First, the Croatian Health Insurance Institute, set up in 1993, took over the existing fragmented insurance funds.

Second, the large medical centres which had nominally administered all health services in their areas were broken up in order to free the separate enterprises: the general hospitals, polyclinics and health centres.

Third, the ownership of health facilities was given to specific public sector bodies. Legislation was enacted which established the state as the owner of teaching hospitals and teaching hospital centres, and the counties as owners of general hospitals and health centres. Hospitals and health centres were to be run by a management board whose members consisted of employees and appointees of the owner (state or county).

The Croatian health reforms have been marked by a distinctive approach to privatization of primary care and some secondary care. The decision was to lease health care facilities at subsidized rates rather than sell them in order to provide stability in difficult economic times. The privatization process has accelerated since 1994 with the enactment of statutes on the privatization of primary health care facilities. Leases for primary health care facilities run until the end of 1999. At the same time, specialist ambulatory services have been privatized and many private polyclinics have opened in private premises.

There have been some improvements in a number of key health indicators. While death rates from ischaemic heart disease have risen, some health status indicators that are sensitive to health services (such as infant mortality rates) have continued to improve throughout the reforms.

Two major pieces of legislation (the Health Act and the Health Insurance Act) have been passed along with additional regulations. The debts of the previous system have been eliminated and in 1995 a surplus was accumulated to pay for new capital equipment. The funding available to health care has risen under the state insurance fund, and county budgets also make some

contribution to capital investment. Much primary care has moved to a system of independent contracting.

Conclusions

The health care system in Croatia has undergone profound structural changes in recent years in its financing, organization and ownership. The most immediate conclusion is that these changes have been implemented successfully, despite the additional problems posed by economic turmoil and armed conflict. This combination of factors makes it difficult to evaluate the effects of the reforms, but the fact that the health care system did not break down and even managed to achieve fiscal stability is evidence of a basically sustainable system.

Universal access has been maintained in principle although geographic inequities still affect rural areas and areas which have been devastated by the war. The current system also allows those who can afford private health insurance to obtain easier access to specialist health care. In terms of equity of finance, the basic arrangement of the previous system remains in that health care is funded mainly through individual insurance contributions.

The successes of the previous system – a good public health and hygiene system – have been maintained. In the medium to long term, real improvements in health will depend on the country's economic and social progress and the success of the first Croatian health project in reducing the risk factors for chronic diseases.

Compared to the previous chaotic system, the efficiency of the Croatian health care services has improved. The most significant achievement of the reforms is that Croatia has a system that is a broadly sustainable in the medium term. Unlike most other countries in the central and eastern European Region, Croatia has sought reform through restoring some central control as well as strengthening the accountability of health care service providers.

As the country recovers, cost pressures will undoubtedly arise. For example, expenditure on pharmaceuticals remains high with no measures in place to control this cost; controls on the introduction of new medical technology are

not well developed which leaves the system vulnerable to provider-driven cost escalation, and staff in the public sector on low salaries are pushing for higher pay.

Choice in the present health care system is limited to a choice of primary care doctor. This may be inevitable given the country's economic circumstances and does not represent a significant change from the previous system.

Structural reforms have taken precedence over changes in the education and training of health professionals. The country needs to train more family doctors and to retrain the present primary care doctors. The nursing profession will benefit from increased autonomy, an increased number of qualified nurses, and improved training. Primary care doctors and nurses are the first point of contact for patients with the health care system, and so affect their perception of the quality of care. There is also an urgent need for trained health managers to run the health care system. The next challenges are to train a new generation of staff to work in and manage health care services, to attract primary care personnel into less well-served regions, and to anticipate cost escalation in order to ensure the sustainability of the Croatian health care system.

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Appendix 1

April 1990	Croatian Democratic Union defeated the Communist Party and was elected the party of government
December 1990	Constitution of the Republic of Croatia
May 1991	Referendum voted in favour of independence
May 1991	Outbreak of war.
October 1991	Declaration of independence
1991	Health for all strategy prepared by the Ministry of Health
1993	Health Care Act
1993	Health Insurance Act
1994	Health Insurance Act amendments
December 1995	Dayton Peace Agreement
January 1996	Minister of Health regulations on privatization
1997	Health Insurance Act amendments