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Health system review

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Health Systems in Transition

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each profile is produced by country experts in collaboration with the Observatory's research directors and staff. In order to facilitate comparisons between countries, the profiles are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

HiT profiles seek to provide relevant information to support policy-makers and analysts in the development of health systems in Europe. They are building blocks that can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems;
- to describe the institutional framework, the process, content and implementation of health care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to 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 different countries.

Compiling the profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different sources, including the World Health Organization (WHO) Regional Office for Europe European Health for All database, national statistical offices, Eurostat, the

Organisation for Economic Co-operation and Development (OECD) Health Data, the International Monetary Fund (IMF), the World Bank, and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

A standardized profile has certain disadvantages because the financing and delivery of health care differ across countries. However, it also offers advantages, because it raises similar issues and questions. The HiT profiles can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to: info@obs.euro.who.int.

HiT profiles and HiT summaries are available on the Observatory's web site at www.euro.who.int/observatory. A glossary of terms used in the profiles can be found at the following web page: www.euro.who.int/observatory/glossary/toppage.

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The current series of HiT profiles has been prepared by the research directors and staff of the European Observatory on Health Systems and Policies. The European Observatory on Health Systems and Policies is a partnership between the WHO Regional Office for Europe, the Governments of Belgium, Finland, Greece, Norway, Slovenia, Spain and Sweden, the Veneto Region of Italy, the European Investment Bank, the Open Society Institute, 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 the director, Josep Figueras, co-director, Elias Mossialos, and by Martin McKee, Richard Saltman and Reinhard Busse, heads of the research hubs. Technical coordination is led by Susanne Grosse-Tebbe.

Giovanna Ceroni managed the production and copy-editing, with help from Nicole Satterley and with the support of Shirley and Johannes Frederiksen (layout).

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This report reflects data publicly available in January 2006.

List of abbreviations

AIDS	Acquired immunodeficiency syndrome
CDC	United States Centers for Disease Control and Prevention
CEFTA	Central European Free Trade Agreement
CERANEO	Centre for Development of Non-Profit Organisations
CIA	Central Intelligence Agency
CINDI	Countrywide Integrated Noncommunicable Disease Intervention
CIT	Croatian Institute of Toxicology
CME	Continuing medical education
DRGs	Diagnosis-related groups
ENHPS	European Network of Health Promoting Schools
ESPAD	European School Survey Project on Alcohol and other Drugs
EU	European Union
EURACT	European Academy of Teachers in General Practice
EUROHIS	European Health Interview Survey
GDP	Gross domestic product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GNP	Gross national product
GP	General practitioner
GYTS	Global Youth Tobacco Survey
HAART	Highly active antiretroviral therapy
HDZ	Croatian Democratic Union
HiT	Health Systems in Transition
HRK	Croatian kuna (currency)
HZJZ	Croatian National Institute of Public Health
HZZO	Croatian Health Insurance Institute
IMF	International Monetary Fund
NATO	North Atlantic Treaty Organisation
NGOs	Nongovernmental organizations
OECD	Organisation for Economic Co-operation and Development

PfP	Partnership for Peace
PPTP	Procedures Paid by the Therapy Procedure [translation from Croatian]
PTCA	Percutaneous transluminal coronary angioplasty
PTSD	Post-traumatic stress disorder
TB	Tuberculosis
UNICEF	United Nations Children's Fund
VCT	Voluntary counselling and testing
WHO	World Health Organization
WTO	World Trade Organization

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Abstract

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of policy initiatives in progress or under development. HiTs examine different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems; describe the institutional framework, process, content and implementation of health and health care policies; and highlight challenges and areas that require more in-depth analysis.

Croatia is a European country in transition with a population of 4.4 million. The population generally enjoys good health and an increasing life expectancy of less than three years below the European Union (EU) average. Croatia's health system is based on the principles of inclusivity, continuity and accessibility. Croatia spends a relatively high share of its gross domestic product (GDP) on health. Public funds for health care originate from two main sources: contributions for mandatory health insurance (predominantly) and funds collected by general taxation. The network of health care providers is organized in a way that makes it accessible to all citizens. The Croatian health system has good health outcomes in relation to countries at comparable income levels. Provision and funding of services are largely public, although private providers and insurers also increasingly operate in the market. Since 1991, the Croatian health system has been subject to a range of organizational reforms. These have mostly relied on decreasing public and increasing private expenditure in the system. While reforms have, up to a point, managed to decrease public spending on health care, they have failed to adequately address issues such as growing arrears and productivity. Important actions involving strengthening policy, monitoring, regulation and more advanced supply-side-oriented tools remain to be prioritized and implemented.

Executive summary

Croatia is a country in central Europe, covering an area of 56 542 km² and with 5835 km of coastline. Croatia has an important geographical position, being located between central Europe and the Mediterranean. Main international land transport routes pass through the country from western Europe to the Aegean Sea and the Turkish Straits. The importance of Croatia's geographical position is further enhanced by its proximity to the Adriatic Sea, the northernmost gulf of the Mediterranean.

In 2004, the total population was 4.4 million and the population density was 78.5 inhabitants per km². The proportion of the population aged 65 and over (16.64% in 2004) is approximately equal to the European Union (EU) average. Depopulation trends started in 1991. In 2003, the population increase was negative (–2.9), the lowest since the establishment of independence in 1990.

Croatia's political system is a parliamentary democracy established by the Constitution of 22 December 1990. The first democratic multiparty elections took place in April 1990 when the Croatian Democratic Union defeated the Communist Party and was elected the party of the Government. Croatia's foreign policy priorities focus on developing closer relations with international organizations, a goal towards which rapid progress has been made. Croatia is a member of the Council of Europe and the United Nations and its specialized agencies. It joined the World Bank in 1993, and the Partnership for Peace (PfP) North Atlantic Treaty Organisation (NATO) Arrangement and the World Trade Organization (WTO) in 2000. In October 2005, Croatia started negotiations towards joining the EU. Since June 1994 the national currency is the kuna (HRK).

The five years of war from 1991 to 1996, following Croatia's declaration of independence, caused important demographic losses and left deep psychological scars. War damages, including considerable damage to the country's housing

and public services infrastructure, were estimated at €32.6 billion, two-thirds of which was direct material damage. Up to 20 000 people have been reported killed or missing, and more than 30 000 people have been disabled as a result of the war. Approximately 47.5% (27 000 km²) of the Croatian continental territory containing some 1.5 million inhabitants was affected by the war. The national economy suffered accordingly. Prior to the dissolution of Federal Yugoslavia, Croatia, after Slovenia, was the most prosperous and industrialized republic in the federation. The per-capita output was approximately one third above the Yugoslav average. During the war the economy went into recession. By 1993, gross national product (GNP) was at 68% of its pre-war level. The country also suffered heavy inflation.

Nonetheless, there were concentrated efforts to implement structural and economic reforms. The monetary reform in 1993, which has been described as "one of the most successful exchange rate-based stabilization programmes in the region", led to moderate inflation rates and a stabilization of the national economy. Economic reforms have focused on fully establishing market economy structures, including deregulation and the introduction of the necessary privatization trends in the public sector, liberalization of international trade, etc.

In 2004, Croatia had an average life expectancy at birth of 75.66 years for both sexes; 71.13 years for males and 79.08 years for females. However, this figure is still lower than in western Europe and 2.8 years below the EU average of 78.49 years in 2004. Infant mortality has gradually declined from 8.1 infant deaths per 1000 live births in 1996 to 6.08 per 1000 live births in 2004 but is still higher than the EU average of 4.75. Croatia shares the disease prevalence pattern of other European countries: cardiovascular diseases, cancer, mental health problems, injuries and violence, and respiratory diseases represent the most prominent causes of morbidity and mortality.

The Croatian health system has fared relatively well among the countries in the region: the system has a well-trained health workforce, a well-established system of public health programmes and health delivery system, and good health outcomes in relation to countries at comparable income levels. However, these results have been achieved at a high cost and the Health Insurance Fund has faced growing deficits in recent years. The generous benefits and exemptions have been politically difficult to roll back, while the ageing population and rising costs of health care have contributed to a rapid increase in public spending on health.

Croatia operates a social health insurance system. However, public funds for health care originate from two main sources: contributions for mandatory health insurance and funds collected by general taxation. Both form part of the State's

annual budgetary contribution towards health care, which is annually determined by the Ministry of Health and Social Welfare and the Ministry of Finance, and ratified by the Parliament. Thus, as elsewhere in social health insurance countries, the funding of Croatia's compulsory health insurance system does not depend solely on salary contributions and displays characteristics of both Bismarck and Beveridge systems. Additionally, contributions at a uniform rate of 0.5% of gross income are levied on salaries for occupational safety. Those funds are hypothecated for treatment, rehabilitation and sick leave compensations caused by injuries and diseases sustained in the workplace, according to the Health Insurance Act. As part of the general decentralization policy, a small but increasing share of public spending on health is being picked up by local government. In 2002, county governments spent just 3% of their revenues on health care. Reliable data on private spending are currently not available, government estimates place private spending somewhere around 2% of gross domestic product (GDP), or approximately one fifth of total health expenditure.

Provision and funding of services are largely public, although private providers and insurers also operate in the market. The health care system is dominated by a single public health insurance fund: the Croatian Institute for Health Insurance (HZZO). To ensure equality of access to all citizens, HZZO-contracted health care providers operate within the framework of the national health care network. The network determines allocation of public financial resources between the 20 counties according to morbidity, mortality, demographic characteristics, etc. The central government continues to play a dual role as the purchaser and provider of health care through its influence on the HZZO funding, on the one hand, and as the largest owner of hospitals and public health institutions, on the other.

Since 1991, the health system has been subject to a range of organizational reforms. Ownership of secondary and tertiary health care facilities (buildings) was distributed among the State, counties and cities. Tertiary health care facilities, comprising clinical hospitals, clinical hospital centres and national institutes of health, remained state-owned. Secondary health care facilities (general and special hospitals) and county institutes of public health became county-owned. The majority of primary health care general practitioner (GP) offices located in health centres were privatized, while the remaining were left in county ownership.

Croatia spends a relatively high share of its GDP on health. There was a period of rapid cost escalation in the late 1990s, which peaked in 2000. From 2000 to 2002, it appears that public spending was contained. According to the Croatian Ministry of Health, in 2003 total spending on health was estimated at

8.9% of GDP, in 2004 at 9.7% of GDP and in 2005 at 8.7% of GDP. The rise of expenditure in 2004 is attributed to the settlement of HZZO and hospital arrears from 2000, 2002 and 2003, which amounted to more than HRK 3 billion (more than US$ 532 million).

Since independence, Croatia has embarked on a number of reform initiatives in the field of health care. Recent reforms appear to have succeeded in containing the increased expenditure and even bringing about a reversal in the level of public spending on health. Nevertheless, despite the reductions, the health system is still heavily burdened by arrears. According to the Croatian Ministry of Health, in December 2004 clinical hospitals owed HRK 1.3 billion (US$ 216 million), general hospitals owed HRK 890 million (US$ 148 million) and special hospitals owed HRK 180 million (US$ 30 million) to various suppliers. By the end of 2003, HZZO's debts grew to HRK 3.686 billion (US$ 613 million), of which HRK 980 million (US$ 163 million) was for pharmaceuticals. Solutions advocated by policy-makers in Croatia heavily revolved around increasing the inflow of private funds into the system. Reforms have included enlarging the "participation scheme", reducing the number of individuals exempt from participation, the introduction of administrative fees, and the planned exclusion of drugs expenditure from complementary insurance benefits. Developing regulation and the implementation of more supply-side-oriented tools may hold an underused window of opportunity that deserves more consideration. The pressure on public resources to spend more on health will intensify in the coming years, and will have to be met with prudent allocation of resources and continuous efforts to improve productivity wherever possible.

1 Introduction and historical background

1.1 Introductory overview

1.1.1 Geography and sociodemography

Croatia *(Hrvatska)* is an Adriatic and a central European country. It stretches in an arc from the Danube in the north-east to Istria in the west and Prevlaka in the south-east. It covers an area of 56 542 km² with a coastline length of 5835 km. Croatia is bordered by Bosnia and Herzegovina (932 km), Hungary (329 km), Serbia and Montenegro (north, 241 km), Serbia and Montenegro (south, 25 km) and Slovenia (670 km) (see Fig. 1.1). Zagreb is the capital and the largest city in Croatia with approximately 800 000 inhabitants in 2001 (Central Bureau of Statistics, 2004).

Croatia has an important geographical position between central Europe and the Mediterranean. Main international land transport routes pass through the country from western Europe to the Aegean Sea and the Turkish Straits. The importance of Croatia's geographical position is further enhanced by its proximity to the Adriatic Sea, the northernmost gulf of the Mediterranean.

The country is divided into three major geographical parts: the Pannonian region, the Coastal region and the Mountain region. In the north and north-east, the Pannonian and para-Pannonian lowlands and hills are commonly used for farming. The north of the country, where Zagreb can be found, is the most industrially developed.

The hilly and mountainous area separates Pannonian Croatia from the coast. The future of this region depends on the development of transit, the wood and timber industry, the production of healthy food and tourism.

The narrow coastal belt of the Adriatic area is predominantly karstic, with very dry summers. A few streams follow narrow gorges to break through to the sea. Croatia is among the countries with the most islands in the world. The Croatian Adriatic coast is made up of 1185 islands and islets with a total coastline of 4058 km. The total length of the mainland coast is 1777 km. The biggest island is Krk; other large islands include Cres, Brac, Hvar, Pag and Korcula. The largest peninsulas are Istria and Peljesac and the largest bay is Kvarner Bay.

The climate in Croatia is continental in the north, mountainous in the centre and Mediterranean along the Adriatic coast (Government of the Republic of Croatia, 2006).

In 2004, the total population of Croatia was estimated at 4.4 million (see Table 1.1) and the density of the population was 78.5 inhabitants per km² (Central Bureau of Statistics, 2005).

The proportion of young people in Croatia (0–14 years old) is slightly lower than the European Union (EU) average (see Table 1.2). The percentage has

Fig. 1.1 Map of Croatia

Source: United Nations Cartographic Section, 2006.

Table 1.1 Population and gender distribution, population estimates, 1995–2004

Year	Total population	Gender distribution	
	in 1000s	Males in 1000s	Females in 1000s
1995	4 776	2 313	2 463
1996	4 494	2 160	2 334
1997	4 572	2 197	2 375
1998	4 501	2 163	2 338
1999	4 553	2 188	2 365
2000	4 381	2 106	2 276
2001	4 437	2 136	2 302
2002	4 443	2 139	2 305
2003	4 427	2 129	2 298
2004	4 439	2 137	2 302

Source: Central Bureau of Statistics, 2005.

declined from 19.89% in 1996 to 16.14% in 2004 (see Table 1.3). Much like the rest of Europe, Croatia is facing the challenges brought about by a gradually ageing population.

Table 1.2 Percentage of the population by age group in Croatia and the EU, 2003 or latest available year (in parentheses)

Country	0–14 years, % of total population	15–64 years, % of total population	65 and over, % of total population
Austria	16.43	68.09	15.48
Belgium (1997)	17.81	65.94	16.25
Croatia	16.42	67.19	16.39
Denmark (2001)	18.66	66.52	14.82
Finland	17.72	66.82	15.46
France (2002)	18.67	65.09	16.24
Germany	14.89	67.36	17.75
Greece	14.56	67.75	17.69
Ireland	20.95	67.92	11.13
Italy (2001)	14.22	67.1	18.68
Luxembourg	18.81	67.13	14.06
Netherlands	18.57	67.65	13.78
Portugal	15.74	67.44	16.82
Spain	14.52	68.59	16.89
Sweden (2002)	18.11	64.71	17.18
United Kingdom	18.34	65.69	15.97
EU	**16.49**	**67.21**	**16.30**

Source: WHO Regional Office for Europe, 2006.

Table 1.3 Population distribution, demographic dependency ratio, and population growth rate (thousands), 1995–2004

Year	Population distribution by age (%)			Demographic dependency ratio[a]
	0–14 years	15–64 years	65+ years	
1995	19.29	68.37	12.34	0.463
1996	19.89	67.79	12.32	0.475
1997	19.89	67.79	12.32	0.475
1998	19.89	67.79	12.32	0.475
1999	19.77	67.87	12.36	0.473
2000	19.81	67.68	12.51	0.476
2001	17.01	67.36	15.63	0.485
2002	16.72	67.18	16.10	0.489
2003	16.42	67.19	16.39	0.488
2004	16.14	67.22	16.64	0.488

Source: Central Bureau of Statistics, 2005.

Note: [a] Demographic dependency ratio is the total number of persons under 15 years old plus the elderly population aged 65 years and over, over the population of age 15–64 years.

Although the proportion of the population aged 65 and over is approximately equal to the EU average, this percentage has been increasing alarmingly over the past few years, from 12.34% in 1995 to 16.64% in 2004. This represents a 35% increase; just under double the rate of decline of young people over the same period. Depopulation trends in Croatia started in 1991. In 2003, the population increase was negative (–2.9), the lowest since the establishment of independence (see Table 1.4).

Table 1.4 Live births, deaths and natural increase (rate per 1000 population), 1995–2004

Year	Live births	Deaths	Natural increase
1995	11.2	11.3	-0.1
1996	12.0	11.3	0.7
1997	12.1	11.4	0.8
1998	10.5	11.6	-1.2
1999	9.9	11.4	-1.5
2000	10.0	11.5	-1.5
2001	9.2	11.2	-1.9
2002	9.0	11.4	-2.4
2003	8.9	11.8	-2.9
2004	9.1	11.2	-2.1

Source: Central Bureau of Statistics, 2005.

The total number of marriages has been slowly decreasing from 1995 to 2003 while, in the same period, the total number of divorces increased (see Table 1.5).

Table 1.5 Marriages and divorces, 1995–2003

Year	Total marriages	Crude marriage rate[a]	Total divorces	Crude divorce rate[b]
1995	24 385	5.1	4 236	173.7
1996	24 596	5.5	3 612	146.9
1997	24 517	5.4	3 899	159.0
1998	24 243	5.4	3 962	163.4
1999	23 778	5.2	3 721	156.5
2000	22 017	5.0	4 419	200.7
2001	22 076	5.0	4 670	211.5
2002	22 806	5.1	4 496	197.1
2003	22 076	5.0	4 934	220.9

Source: Central Bureau of Statistics, 2005.

Notes: [a] Crude marriage rate: number of marriages per 1000 inhabitants; [b] Crude divorce rate: number of divorces per 1000 marriages.

Over a period of 10 years, the total number of people per household has decreased from 3.10 in 1991 to 2.99 in 2001 (see Table 1.6).

The official language is Croatian. The main national minorities are Serbs (4.5%) and others 5.9% (including Bosniak, Hungarian, Slovene, Czech and Roma). The most prevalent religion is Roman Catholicism (87.8%) (CIA, 2005).

Table 1.6 Population and households by census, selected years

Census year	Number of inhabitants	Number of households	Average number of people per household
1953	3 936 022	1 031 910	3.81
1961	4 159 696	1 167 586	3.56
1971	4 426 221	1 289 325	3.43
1981	4 601 469	1 423 862	3.23
1991	4 784 265	1 544 250	3.10
2001	4 437 460	1 477 377	2.99

Source: Central Bureau of Statistics, 2003.

1.1.2 Political and economic background

Croatia's political system is a Parliamentary Democracy established by the Constitution of 22 December 1990. The first democratic multiparty elections took place in April 1990 when the Croatian Democratic Union (HDZ) defeated the Communist Party and was elected the party of the Government. Franjo Tudjman was elected as President. In the May 1991 referendum the population voted in favour of independence from the Federal Republic of Yugoslavia. Croatia officially declared independence in October 1991. This prompted a declaration of independence from Croatia by the Serbian enclave of Krajina, where fighting broke out followed by an intervention of the Yugoslav People's Army on behalf of the Serbian population. War continued with the Krajina Serbs and with the Federal Republic of Yugoslavia from 1991 to 1995, and in Bosnia and Herzegovina until the signing of the Dayton Peace Agreement in December 1995. This agreement recognized Croatia's traditional borders and called for the return of occupied eastern Slavonia in 1997.

The Head of State is the President, who is elected by direct universal suffrage for a five-year term and may be re-elected for a further single term. In addition to being the leader of the country, the President appoints the Prime Minster and Cabinet members, with the consent of the Parliament. Following the death of President Tudjman in December 1999, the powers of the presidency were curtailed and greater responsibility was vested in Parliament.

The Parliament (*Sabor*), contains the House of Representatives. The House of Representatives has 151 seats and members are directly elected by popular vote to serve four-year terms.

The Government of the Republic of Croatia exercises executive powers in conformity with the Constitution and national legislation. Its internal organization, operational procedures and decision-making processes are defined by the Law on Government of the Republic of Croatia and the Rules of Procedure of the Government. The Government passes decrees, introduces legislation, proposes the state budget and enforces laws and other regulations enacted by the Croatian Parliament. The Government consists of the Prime Minister, two Vice Prime Ministers and 13 ministries.

In January 2005, Stjepan Mesic won a second five-year term as President. Prime Minister Ivo Sanader, leader of the HDZ, formed a government following the parliamentary elections in November 2003.

The Constitutional Court ensures that laws passed by the Parliament conform to the Constitution. Judges are appointed for eight-year terms by the Judicial Council of the Republic of Croatia. This Council is elected by the House of Representatives.

Regional and local government is organized on two levels: 20 counties plus the city of Zagreb, and 426 municipalities. Counties are regional territorial units, each governed by 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 by regional elections for four-year terms.

Croatia's foreign policy priorities focus on developing closer relations with international organizations; a goal towards which rapid progress has been made. Croatia is a member of the Council of Europe and the United Nations and its specialized agencies. It joined the World Bank in 1993 and the Partnership for Peace (PfP) North Atlantic Treaty Organisation (NATO) Arrangement and the World Trade Organization (WTO) in 2000. As of June 2004, Croatia has been a candidate country for accession to the EU.

The five years of war from 1991 to 1996, following Croatia's declaration of independence, caused important demographic losses and left deep psychological scars. War damages, including considerable damage to the country's housing and public services infrastructure, were estimated at €32.6 billion, two thirds of which was direct material damage (Stevenson and Stubbs, 2003). Up to 20 000 people have been reported killed or missing, and more than 30 000 people have been disabled as a result of the war (Government of the Republic of Croatia, 1999). Approximately 47.5% (27 000 km²) of the Croatian continental territory containing approximately 1.5 million inhabitants was affected by the war. At the end of 1991, up to 11.5% of the population lived in partly or fully occupied areas. Displaced persons and refugees from neighbouring Bosnia and Herzegovina flooded the country. During the period between 1992 and 1998 the number of refugees and displaced persons was between 430 000 and 700 000 (Babic-Banaszak et al., 2002).

The national economy suffered accordingly. Prior to the dissolution of Federal Yugoslavia, Croatia, after Slovenia, was the most prosperous and industrialized republic in the federation. The per-capita output was approximately one-third above the Yugoslav average (CIA, 2005). During the war the economy went into recession. By 1993, gross national product (GNP) was at 68% of its pre-war level (WHO Regional Office for Europe, 2000). The country also suffered heavy inflation. Nonetheless, there were concentrated efforts to implement structural and economic reforms. The monetary reform in 1993, which has been described as "one of the most successful exchange rate-based stabilization programmes in the region", led to moderate inflation rates and a stabilization of the national economy (World Bank, 2000). As a result, Croatia was awarded investment credit ratings (World Bank, 2001).

Progress has also been made in implementing structural reforms – nearly two thirds of the economy has been privatized, more than three quarters of bank assets have been channelled into private institutions and the banking system has regained strength. Private consumption and a recovery in exports pulled the economy out of recession in 2000. Increased tourism revenues have also helped to reduce the current account deficit to its lowest level over the years. Although reconstruction of infrastructure, homes, schools and factories is progressing and displaced persons are returning, the economy suffered a negative current account balance of US$ 617 million and a total outstanding and disbursed debt of approximately US$ 13.4 million, as estimated by the World Bank in 2003 (World Bank, 2003).

Gross domestic product (GDP) has been continually rising since 1996 (see Table 1.7). In 2004, the service sector contributed to an impressive 61.6% of GDP, followed by the industry sector (30.1%) and the agriculture sector (8.2%). The service sector has been the fastest growing sector of the Croatian economy with a 4.8% annual growth rate in 2001 followed by the industry sector (4.3%) and the agriculture sector (0.7%) (World Bank, 2005).

Table 1.7 Macroeconomic context, 1996–2004

Indicator year	1996	1997	1998	1999	2000	2001	2002	2003	2004
Unemployment rate	10.0	9.9	11.4	13.6	16.1	14.8	14.3	14.3	13.8
Annual rate of inflation (%)	3.5	3.6	5.7	4.0	4.6	3.8	1.7	1.8	2.1
GDP per capita (€)	3 531	3 891	4 284	4 102	4 560	4 998	5 451	5 747	6 224

Source: Croatian National Bank, 2005.

Structural unemployment remains a key challenge for Croatia's economy. In 2004, of the 1.72 million inhabitants in the active population, 18% were unemployed (Central Bureau of Statistics, 2005). Most employment is concentrated in the service sector followed by the industry and agriculture sectors (see Table 1.8).

Total exports in 2004 amounted to approximately US$ 8 billion with a major share (approximately US$ 3.8 billion) accounted for by manufactures. Total imports in the same year amounted to approximately US$ 16.5 billion, of which capital goods accounted for approximately US$ 5.7 billion (see Table 1.9) (World Bank, 2005). Major export partners include: Germany (16.1% of total exports), Italy (14.5%), Slovenia (6.9%), Austria (6.3%), France (5.6%) and Russia (3.3%) (CIA, 2005).

Croatia has a universal primary education system with all children participating. Primary schools were attended by 393 744 pupils in 2004/2005.

Table 1.8 Employment by sector, 2004

Sector	% of total employment
Agriculture	6.3
Agriculture, hunting and forestry	6.0
Industry	31.2
Manufacturing	20.5
Services	62.3
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	16.9
Public administration and defence, compulsory social security	7.6
Transport, storage and communication	6.9
Other	0.2

Source: Central Bureau of Statistics, 2005.

Table 1.9 Trade and balance of payments (US$ millions)

	2003	2004
Total exports (fob)	**6 007**	**8 208**
Raw materials, excluding fuels	329	449
Mineral fuels and lubricants	560	909
Manufactures	2 953	3 824
Total imports (cif)	**13 469**	**16 555**
Food	930	1 190
Fuel and energy	1 500	1 987
Capital goods	4 500	5 739
Balance of payments		
Exports of goods and services	14 324	17 828
Imports of goods and services	16 212	20 180
Resource balance	-1 888	-2 353

Source: World Bank, 2005.

Notes: fob: free on board; cif: cost, insurance and freight.

Regular and special secondary schools had 192 076 pupils in the same year. University courses were attended by 101 688 students (Central Bureau of Statistics, 2005). In 2003, total adult literacy rate was 98.1%; 99.3% among men and 97.1% among women (WHO Regional Office for Europe, 2006).

1.1.3 Health status

Responsibility for the processing of health care and public health information lies with the Central Bureau of Statistics and the Croatian Institute for Public Health. For all deaths occurring in Croatia, causes are coded centrally by the Croatian National Institute of Public Health (HZJZ), thereby ensuring a high

quality of classification. County-specific mortality data are published annually in the Croatian Health Services Yearbook, edited by the HZJZ.

Overall, chronic diseases are more prevalent than communicable diseases. The crude death rate per 1000 people was 11.2 in 2004. In 2004, the main causes of death were due to circulatory system diseases (50%), malignant neoplasms (25%), external injury and poisoning (6%), diseases of the respiratory system (6%) and diseases of the digestive system (5%) (Central Bureau of Statistics, 2005).

In 2004, Croatia had a life expectancy at birth of 75.66 for both sexes (71.13 for male and 79.08 for female), while life expectancy at 65 was 13.98 for males and 17.65 for females (See Fig. 1.2 and Fig. 1.3).

Infant mortality has gradually declined from 8.1 infant deaths per 1000 live births in 1996 to 6.08 per 1000 in 2004 but is still higher than the EU average of 4.75 per 1000. Neonatal deaths per 1000 live births have decreased from 5.78 per 1000 live births in 1999 to 4.56 per 1000 in 2004, compared to the EU average of 3.24 per 1000 in 2004 (WHO Regional Office for Europe, 2006; Central Bureau of Statistics, 2005).

1.2 Historical background

The period from 1918 to 1945

Health Insurance was introduced through three separate private organizations in 1922, as one of the more advanced schemes in Europe. The Brotherhood Treasury covered mine workers, the Central Office for Workers Insurance covered other employees and workers, and Merkur 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 privately run. 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 promotion of public hygiene.

Professor Andrija Stampar of the Zagreb School of Public Health, one of the founders of the World Health Organization (WHO) and of the Association of Public Health in Europe, helped in introducing a range of public health services in the 1920s and 1930s. He also pioneered primary health care centres in Croatia.

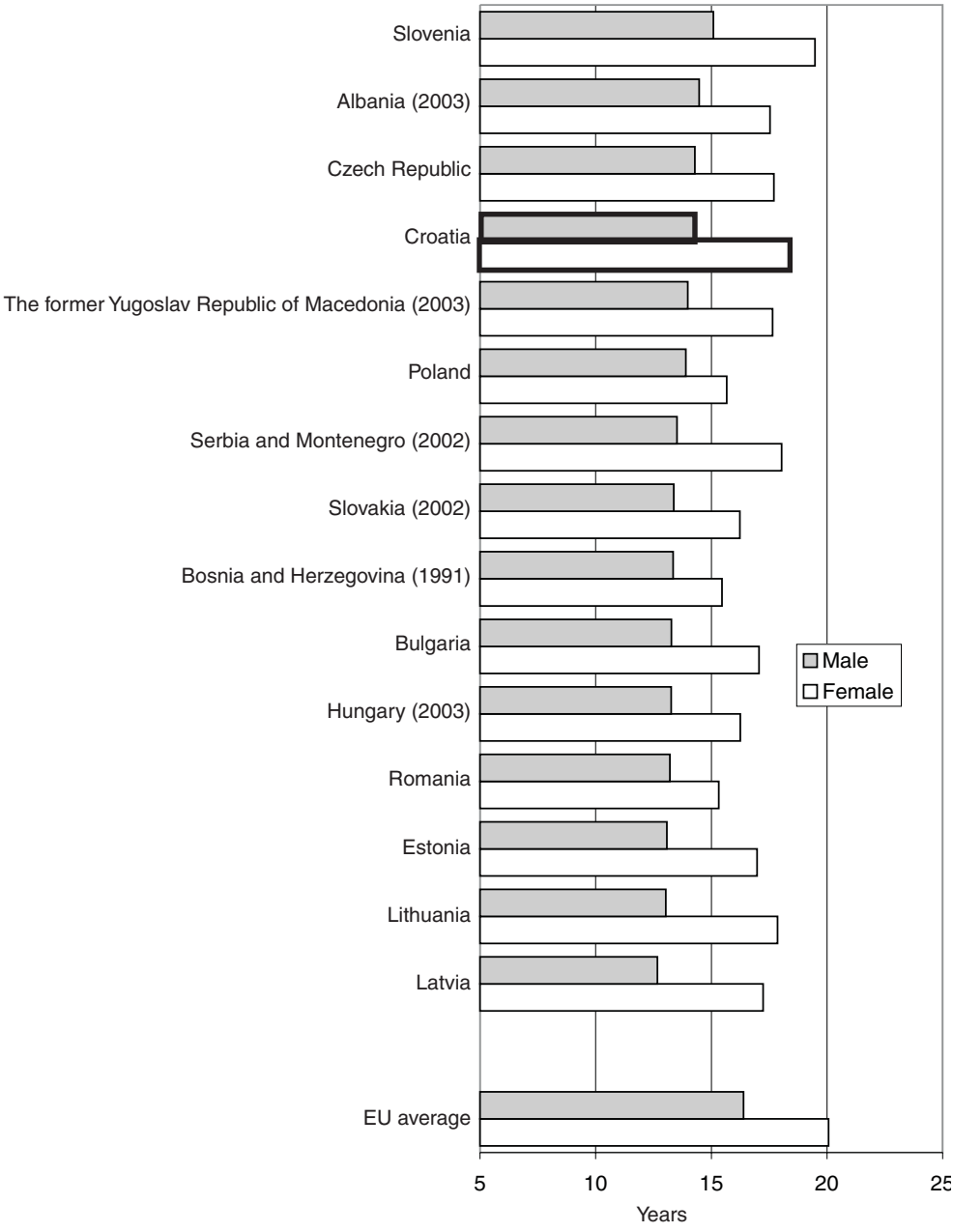
Fig. 1.2 Life expectancy at birth, 2004 (or latest available year)

Source: WHO Regional Office for Europe, 2006.

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

Fig. 1.3 Life expectancy at age 65, 2004 (or latest available year)



Source: WHO Regional Office for Europe, 2006.

population. This was financed from income-related contributions and from the state budget. Insurance was first organized at local level through local health and social insurance organizations. In the second phase, the federal Government administered pensions and health insurance funds that were brought together under the Institute for Social Insurance, which subsequently split into the Health Insurance Fund and the Pension and Disability Fund.

The third phase introduced community management. The Constitution of 1974 set up local associations, which were to plan, collect and distribute financial resources, and organize health services. Legislation was enacted to consolidate 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 seized most of the funds, and community management was not compatible with large medical organizations. In practice, decisions were made by political or governmental bodies. Also, despite a long tradition of private health care, private medical (but not dental) practices were reduced to a very small number. The three insurance schemes continued as before for employees, farmers and artisans, and the self-employed alongside the Health Insurance Fund.

By the end of the 1980s, the Croatian health care system became a unique blend of health insurance funds, neglected primary health care networks, quasi-autonomous health organizations and "self-managing" authorities. The result was a liberal, disorganized and expensive system which, according to Letica (1989), suffered from a prolonged professional and financial crisis.

Since 1990

In the decade following independence, Croatian health care went through a series of health reforms that have helped to transform the once fragmented and highly decentralized health system, inherited from former Yugoslavia and battered by five years of war, into a health care system that maintains the principles of universality and solidarity.

The Health Care Law of 1993 consolidated finances under a single public entity, the Croatian Health Insurance Institute (*Hrvatski zavod za zdravstveno osiguranje*, HZZO). The HZZO established the foundation for a revenue base that has provided universal coverage for the population and has since been the main source of health financing in Croatia. Croatia's social health insurance programme is based on the principles of solidarity and reciprocity in which citizens are expected to contribute according to their ability to pay, and receive basic health services according to need. The 1993 Law allowed opting-out of the public insurance system and acquiring substitutive insurance with private insurers. This was abolished in 2002.

The 1993 Law introduced the principles of patient choice and patient rights. The system recognized the participation of private insurance and the role of private provision of health care services. Although the majority of health care providers remained under public ownership, private providers have grown in number, notably in primary care, dental services, specialized clinics and dispensaries. A small but growing private insurance market has also developed, which offers additional (supplementary) insurance coverage for services not covered under the statutory insurance plan.

The central Government continues to play a dual role as the purchaser and provider of health care through its influence on the HZZO funding on the one hand, and its role as the largest owner of hospitals and public health institutions, on the other. The majority of primary care units, however, have been privatized.

In July 2001, the Ministry of Health issued a comprehensive policy statement in a paper entitled "The Strategy and Plan for the Reform of the Health Care System and Health Insurance of the Republic of Croatia". The Ministry's paper acknowledged that despite significant achievements in improving financing and delivery of health care in the 1990s, the health system continued to face a variety of financial and structural problems.

Since 2000, the Government's round of health sector reform measures were aimed at achieving a broad set of objectives:

- containing the rate of increase in expenditure from public sources and reducing the payroll contribution rate by limiting benefits and increasing revenue through increased cost sharing;
- improving efficiency and productivity of services through the reorganization and rationalization of the delivery system, especially at tertiary and secondary levels;
- enhancing the contractual relationship between the HZZO and health care providers to achieve better alignment of incentives for efficiency and quality with payments;
- devolving greater responsibilities to the local authorities (counties and city of Zagreb) to manage the delivery system at primary and secondary levels, and to improve the continuity of services at these levels;
- expanding the scope of public health programmes focused on prevention and health promotion.

The Croatian health system has fared relatively well among the countries in the region: the system has a well-trained health workforce, a well-established system of public health programmes and health delivery system, and good health outcomes in relation to countries at comparable income levels. However, these

results have been achieved at a high cost and the Health Insurance Fund has faced growing deficits in recent years. The generous benefits and exemptions established during the early growth years have been politically difficult to roll back, while the ageing population and changing epidemiological profiles have contributed to a rapid increase in public spending on health care. The efforts to contain costs in the 1990s and early 2000s were not effective, as the HZZO's expenditure continues to outstrip revenues and arrears have built up. The attempts to cap costs administratively have led to growing waiting lists and dissatisfaction among the patients and providers. This has prompted the Government to initiate a new round of reforms aimed at containing costs, reducing the tax burden on labour, and increasing revenue through cost sharing.

Croatia's challenge is to channel its already substantial public spending towards greater efficiency without jeopardizing its other competing objectives of universality, fairness and equity, quality, patient choice and satisfaction.

2 Organizational structure and management

2.1 Organizational structure of the health care system

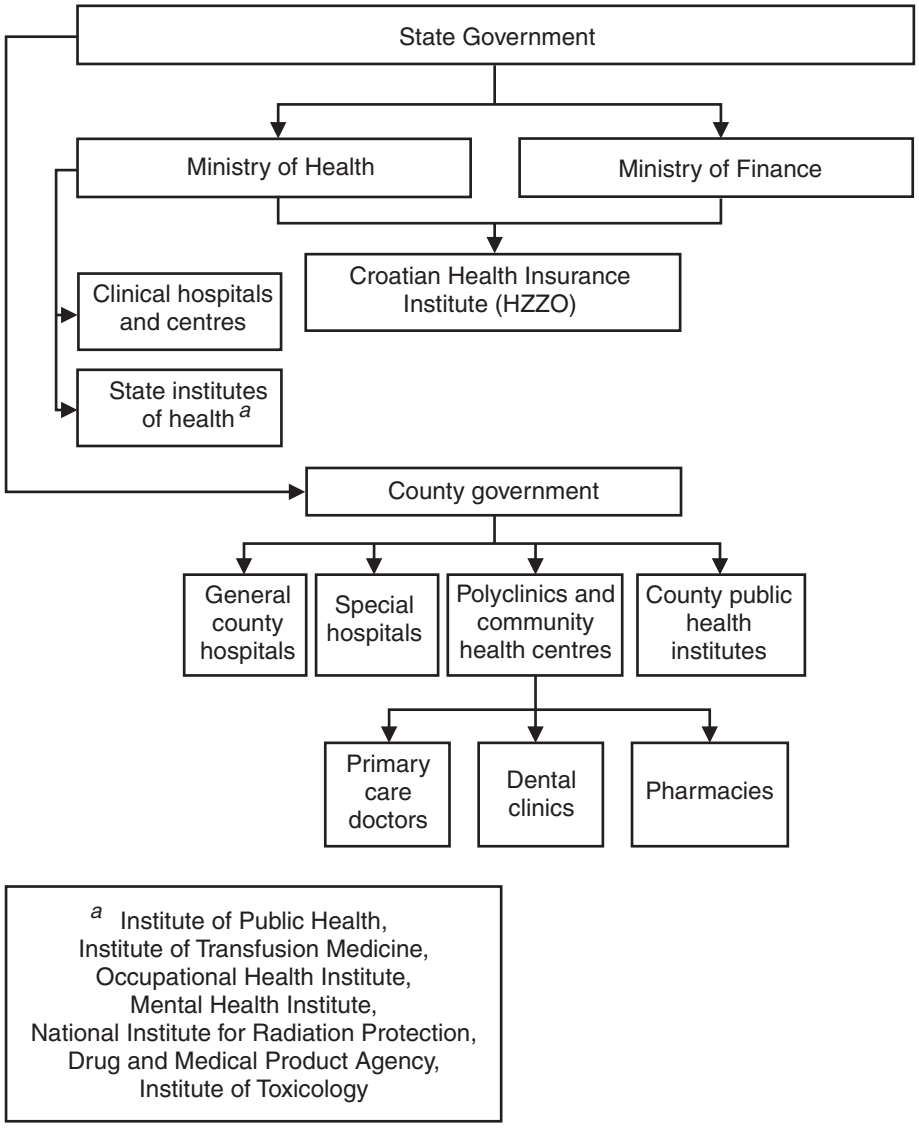
Croatia's health care system is based on the principles of social health insurance. Provision and funding of services are largely public, although private providers and insurers also operate in the market. The health care system is dominated by a single public health insurance fund: the Croatian Institute for Health Insurance, the HZZO.

Since 1991, the health care system has been subject to a range of organizational reforms. Ownership of secondary and tertiary health care facilities (buildings) was distributed among the State, counties and cities. Tertiary health care facilities remained state-owned, comprising clinical hospitals, clinical hospital centres and national institutes of health. Secondary health care facilities (general and special hospitals) and county institutes of public health became county-owned. The majority of primary health care general practitioner (GP) offices located in health centres were privatized, and the remaining ones were left under county ownership. Since 1991, Croatia has also witnessed a rapid growth of private secondary health care facilities: mostly special hospitals and polyclinics (outpatient facilities). Fig. 2.1 depicts in a simplified way the organization of the social protection system.

Ministry of Health

At central level, the Ministry of Health is responsible for: (i) health policy, planning and evaluation, including the drafting of legislation, regulation of standards for health services and training; (ii) public health programmes,

Fig. 2.1 Organizational chart of the social protection system



including monitoring and surveillance of health status, health promotion, food and drug safety, and environmental sanitation; and (iii) regulation of capital investments in health care providers in public ownership.

In particular, the Ministry of Health draws up legislation for consideration by the 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. The Ministry of Health manages public health activities including sanitary inspections, supervises food and drug quality and engages in the health education of the population. The Ministry also nominates the chairs of the governing councils and appoints the majority of the board members in state-owned health care facilities. A National Health Council, which was set up under the Health Act and consists of nine members nominated for their expertise, advises the Minister of Health on health policy and planning issues.

Ministry of Finance and the State Treasury

The Ministry of Finance is responsible for the planning and managing of the government budget, which includes the approval of the central budget transfers to the HZZO as well as the Ministry of Health. Therefore, the Ministry of Finance plays a key role in determining the overall level of public spending on health care.

Since 2001, the State Treasury has been responsible for all state finances, including collecting and allocating social health insurance contributions. It was thought that the collection of all state revenues through a single account would alleviate the challenges with analyses and comparisons and would stimulate greater fiscal discipline in the economy (World Bank, 2000).

Croatian Health Insurance Institute (HZZO)

Established in 1993, the HZZO is a public body responsible for managing the Health Insurance Fund and contracting health care services. As the main purchaser of health services, the HZZO also plays a key role in the definition of basic health services covered under statutory insurance, the establishment of performance standards and price setting for services covered by the HZZO. The HZZO is also responsible for the distribution of sick leave compensation, maternity benefits and other allowances as regulated by the Croatian Health Insurance Act.

The main office of the HZZO is located in the capital city (Zagreb) and 21 branch offices are located in county centres. The Zagreb office is responsible for devising the means of implementing compulsory health insurance, and branch offices are in charge of implementation. The HZZO is overseen by a governing council, which consists of representatives of the insured population, the Ministry of Health, the Ministry of Finance, health institutions and private practices (independent GPs).

Counties and the city of Zagreb

Local governments own and operate most of the public primary and secondary health care facilities, including general hospitals, polyclinics, public health institutes and community health organizations (home care and emergency care units). While these facilities receive operating expenditure through their contracts with the HZZO, the local authority is responsible for the maintenance of the infrastructure, and increasingly for capital investments. Revenue is derived from decentralized state funds, local taxes and rental income. Under the Government's decentralization policy, local governments are expected to play an increasing role in the coordination and management of health services at county and municipal levels.

Professional chambers

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

2.2 Planning, regulation and management

2.2.1 Planning

The Ministry of Health produces an annual national health plan that contains clearly defined objectives following suggestions from the Croatian National Institute of Public Health (HZJZ). This plan must then be approved by Government. The national health plan is implemented at all levels and supervised by the Ministry of Health. Also, based on the suggestions of the HZJZ, the Minister of Health enacts the Health Care Measure Plan and Programme, upon receiving the opinions of the competent chambers.

The HZJZ plays an important role in public health planning, monitoring and evaluation. The institute prepares epidemiological analyses and supports health promotion and illness prevention programmes. Control of quarantine; and the

prevention and control of communicable diseases, 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 county (and the city of Zagreb) level, county public health institutes collect statistics and participate in the formulation and implementation of health programmes for their areas.

The HZZO implements the plans for direct health services through its contracts with health care providers. Under the national health plan, the HZZO passes regulations on health insurance entitlements, which aim to balance the supply of resources with the demand for services.

2.2.2 Regulation

The regulation of standards in health care institutions is the responsibility of the Ministry of Health. Standards are set out in health care-related legislation. Teams of health inspectors visit health institutions if there are organizational or professional failures. Licensing of professionals is the responsibility of the professional chambers.

2.2.3 Management

Currently, managerial responsibilities in health care are divided according to ownership – between the state authorities and counties (municipalities have a minor role in managing health services). The central Government sets the framework within which a county draws up its health policy. Some planning, administrative and supervisory roles are devolved to county authorities. In practice, management has been delegated to health care-providing institutions such as health centres and hospitals that are run by governing boards.

All hospitals, health centres and other health care facilities are managed by a director and a deputy director, one of whom is required to be a medical doctor with at least five years of clinical experience. Each health care-providing institution has a governing board composed of representatives of owners and employees. Professional councils comprising department heads provide help on professional issues and technical solutions related to the providers' operations. Professional councils participate in the planning of health care provision and supervise the implementation of clinical standards. Furthermore, all health care facilities have committees for ethical issues as advisory bodies to the principal.

2.3 Decentralization of the health care system

During the 1980s, the Croatian health care system was notable for its decentralization in terms of its range and the way in which it was introduced. It was characterized by a high level of autonomy of local authorities and by the fact that both health workers and users participated in decision-making. The model was designed to ensure workers, who were considered the central power of the socialist society, actively participated in public services. In practice, political bodies made the majority of management decisions, and there was little, if any, supervision or inspection. Health care services suffered from poor organization, lack of management and considerable inefficiency.

Political reforms related to the onset of transition in Croatia in 1990 and the struggle for independence (gained in 1991) led to radical reforms of the entire system of public services, including health care. One of the measures introduced was the centralization of funding in health care, justified by a lack of cooperation and control and by severe financial difficulties. The newly founded State was eager to control not only public services in general, but also all units of individual systems such as health care. The 1990 centralization of health finances marked the outline of the 1993 health reform that, although introducing several elements of decentralization (e.g. health institutions owned by local authorities, privatization in primary care), kept very tight central control over health care through funding and regulation (Dzakula et al. 2005).

In 2002, a management capacity-building programme entitled "Healthy Counties" was developed by the Andrija Stampar School of Public Health and the Ministry of Health. The programme draws on a number of training resources and other concepts from the United States' Centers for Disease Control and Prevention's (CDC) Sustainable Management Development Programme and its Management for International Public Health Course. The main aim of the programme is to empower local professionals and authorities for managing and planning in public health, health care and health policy. Up to the end of 2004, 15 counties (out of 20) and the city of Zagreb were involved in the programme.

3 Health care financing and expenditure

3.1 Main system of financing and coverage

Health care in Croatia has a mixed system of financing. The Croatian public health care system is financed by funds from social health insurance contributions, co-payments, voluntary complementary health insurance, privately provided supplementary health insurance, the state budget and local self-administration county units' budgets. In terms of medical services provided, the majority of the Croatian health system is financed according to the social health insurance model with one insurance institution or sickness fund, the HZZO.

Health insurance terminology in Croatia varies somewhat from that used in the European Union (EU). This report uses EU terminology for ease of comparison between countries. A short legend of terms can be found in Table 3.1.

Funds for social health insurance are collected mainly from payroll taxes paid by employees, the self-employed and farmers' contributions. Social health insurance for certain vulnerable categories of the population is partly cross-subsidized from payroll contributions and additionally funded by transfers from the central government budget and from county budgets. These categories include the unemployed, disabled, elderly, people under 18, students, war veterans and the military.

Patients are required to pay for access to certain publicly provided health services through co-payments or to buy complementary health insurance. Certain groups are exempt from paying co-payments. These include the unemployed, disabled, people under 18, students, the military, war invalids, and multiple voluntary blood donors.

Table 3.1 Definitions of health insurance terminology in the EU and Croatia

European Union context	Croatian context
Social health insurance – mandatory Main insurance scheme Coverage is provided by the State or national health care system.	**Basic health insurance – mandatory** Main insurance scheme Opting out is not allowed.
Complementary insurance Coverage for services only partially covered by social health insurance or the State (e.g. co-payments imposed by the statutory health insurance) – voluntary.	**"Supplemental insurance"** Insurance coverage for co-payments required by the Basic Health Insurance – voluntary.
Supplementary insurance Coverage for services not covered by statutory health insurance, e.g. to provide faster access to selected services, offering greater consumer choice, and for nonmedical amenities – voluntary.	**Private insurance** This is covered by "private insurance" for all services *not* covered under the Basic Health Insurance – voluntary. Since 2004, it can also be used to cover co-payments charged by public providers.

Supplementary insurance is optional. It is provided by private insurers and covers the costs of hotel amenities or a higher standard of care in public hospitals (e.g. choice of doctor, single rooms with television, air conditioning, etc.). It can also be used for preventive check-ups and treatment in privately owned practices contracted by the respective insurance company. Additionally, since 2004 it can be used to cover co-payments charged by public providers.

Privately owned facilities can enter into contracts with the HZZO and become a part of the publicly funded system. Alternatively, they can choose to operate on their own and charge private fees or enter into contracts with private insurers and charge for services provided under supplementary insurance. Since 2002, the Croatian system does not allow for opting out of social health insurance.

Social health insurance contributions are collected through the Government and accumulated in the State Treasury. Budgetary funds for social health insurance are determined annually and allocated to the HZZO. The HZZO collects premiums for complementary insurance on its own. In 2003, state budget funds for social health insurance accounted for 96.5% of total HZZO revenue (including funds for the vulnerable categories paid from the state budget), while funds collected from complementary health insurance accounted for 3.5% (HZZO, 2004). Table 3.2 provides the sources of revenue reported by health care providers.

The State also funds extra services such as antenatal and maternity care, school health services and care for the elderly and subsidizes costs of health care in remote regions. The State pays for public health and environmental protection, and health education, and provides income substitution during maternity leave. Capital investments are also funded from the state budget. On an annual basis,

each county receives "decentralized funds" from the state Government, which are to be used (after approval by the Ministry of Health) for investments in buildings, technical equipment, etc. County budgetary contributions also fund some public health and environmental protection activities and can additionally be used for further capital investments in county-owned hospitals. The HZZO, aside from paying for medical services, also participates (to a small extent) in funding procurement of medical equipment for publicly owned providers.

Table 3.2 Sources of revenue reported by health care providers in 2001

	Primary care	Hospitals	Specialist clinics and polyclinics	Pharmacies
HZZO (%)	73.5	90.8	41.3	60.9
Other insurance companies (%)	13.0	3.9	55.0	29.5
Co-payments (%)	0.7	0.7	0.2	0.7
Other revenue (%)	12.8	4.6	3.6	8.8

Source: World Bank, 2004.

Financing principles: pre-2002

The major challenges that the Croatian health system had to overcome in the 1990s were high expenditure and a continual fiscal crisis. As the statutory public entity responsible for managing the Health Insurance Fund, the HZZO accounted for over 90% of public spending on health and an estimated 80% of the total health expenditure in Croatia. Total HZZO expenditure (excluding cash transfers for sick leave) has grown faster than GDP, rising from 6.7% of GDP in 1994, to a high of 8.0% in 2000. In 2001 and 2002, the increase in HZZO expenditure has been contained below the GDP growth rate (see Table 3.3).

A rapid real increase in health expenditure was recorded by the HZZO between 1998 and 2002, averaging approximately 8% per annum in real terms. This rate of increase has outstripped the revenue of HZZO, which has not increased significantly over the same period (see Table 3.4). As Table 3.5 shows, between 1998 and 2000, spending increases occurred across most categories of health spending. A sharp decline in expenditure on prescription drugs in 2002 could be attributed to the higher cost sharing introduced that year. However, without the data from household expenditure and utilization surveys, it is difficult to determine the extent to which cost reductions were attained through productivity gains, or through other means, e.g. rationing of care (long waiting lists for non-emergency services) and cost shifting to patients.

Table 3.3 The structure of HZZO expenditure as a percentage of GDP, 1994–2002

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Health care	6.0	6.9	6.6	6.2	7.1	7.7	8.3	7.5	6.2
Compensation and allowances	0.8	1.1	1.5	1.6	1.5	1.5	1.8	1.3	1.1
Operating costs, investments, loan repayments, other expenses	0.8	1.1	1.5	0.4	0.3	0.3	0.4	0.3	0.5
Total HZZO expenditure	7.5	9.2	9.6	8.1	8.4	9.0	9.8	8.6	7.8
HZZO expenditure excluding compensations and allowances	6.7	8.1	8.1	6.6	6.9	6.6	8.0	7.3	6.6

Source: World Bank, 2004.

Table 3.4 HZZO revenue and expenditure, 1998–2002 in US$ millions[a]

Year	1998	1999	2000	2001	2002
Total revenue	**1 720**	**1 889**	**1 952**	**2 068**	**2 116**
Contributions	1 459	1 485	1 513	1 561	1 698
– employer	662	708	662	639	–
– employee	662	708	763	825	–
– other	136	68	87	95	–
Workers' compensation	–	–	–	–	23
Other revenue	27	43	41	161	27
Transfers from the State Treasury	234	361	398	346	202
"Supplemental insurance"	–	–	–	–	43
Operation budget for HZZO	–	–	–	–	39
Receipts from borrowings	–	–	–	–	122
Total expenditure	**1 724**	**1 908**	**2 194**	**2 076**	**2 068**
Health care	1 352	1 530	1 731	1 689	1 635
Primary care	271	293	339	351	345
Polyclinics, specialist services	273	228	334	313	291
Prescription drugs	210	253	298	318	243
Hospitalization	486	642	633	612	671
Orthopaedic devices	36	39	53	50	56
Other health care-related expenditure	65	63	59	29	9
Compensation	308	311	400	318	302
HZZO operating costs	44	50	46	33	39
Other (investments, loan repayments, special expenses)	23	18	50	48	92
Stock of short-term liabilities[b]	523	542	405	410	455
Surplus/deficit[c]	–	39	137	25	43

Source: HZZO, 2004.

Notes: [a] US$ millions calculated on the basis of the 2003 annual average of the US$/HRK exchange rate, as reported by the Croatian National Bank; [b] Stocks of short-term liabilities are accounts payable for purchases made in the current fiscal year but paid in the following fiscal year; [c] In this estimation, it was assumed that the stock of short-term liabilities represented the full stock of accounts payable in the following fiscal year, and that the payments were made in the following year. Receipts from borrowings are included in the 2002 calculation. On the revenue side, accounts receivable were not included in this estimation.

Table 3.5 Annual real increase in HZZO expenditure over preceding year, 1998–2002

Expenditure categories (%)	1998	1999	2000	2001	2002	Average annual increase, 1998–2002
Primary care	3.8	4.0	8.5	2.5	-4.2	2.9
Specialist services	30.5	15.6	10.7	5.6	-8.1	10.9
Prescription drugs	25.5	-19.7	37.5	-7.3	-22.9	2.6
Orthopaedic devices	36.7	3.6	27.1	-5.3	7.3	13.9
Hospitalization	16.4	26.9	-7.3	-4.3	7.3	7.8

Source: HZZO, 2004.

Throughout the 1990s, the deficits incurred by the HZZO necessitated periodic transfers of funds from the central budget to maintain the provision of health services (see Table 3.4). In 2002, the Government registered short-term liabilities amounting to HRK 3 billion[1] (US$ 448 million) and borrowed HRK 820 million (US$ 122 million) to pay off the old arrears accumulated by the government-owned health care providers. While these arrears have decreased from the high level of HRK 4 billion (US$ 597 million) in 1999, the continuing operating deficit of the HZZO and the health care providers has been a continual source of concern.

Recognizing the need to improve fiscal discipline in the health sector and to reduce the annual deficits, the Government introduced measures to: (i) broaden the sources of revenue; (ii) improve fiscal discipline and fund management; and (iii) contain cost on the supply side through rationalizing the health delivery structure and reforming provider payment methods. In particular, the Government instituted an overall global budget cap for hospital care. However, some observers considered this applied pressure as inappropriate, since it led to longer waiting times and encouraged queues for certain high-end services, such as cardiac surgery, percutaneous transluminal angioplasty and stent (Langenbrunner, 2002).

It should be noted that the HZZO expenditure also includes substantive cash transfers for sick and maternity leave compensation, which amounted to 1.1% of GDP in 2002 (see Table 3.3). For reasons described in Box 3.1, these cash transfers are excluded from the total health expenditure figures. The Government estimates that private out-of-pocket payments and private voluntary insurance payments account for around 2% of GDP, but reliable data on private financing are not yet available.

[1] These are 2003 HRK values.

Box 3.1 System of Health Accounts and definition of health expenditure

According to the System of Health Accounts' (SHA) guidelines established by the Organisation for Economic Co-operation and Development (OECD), the definition of "core health care functions" excludes cash transfers, such as sick and maternity leave compensation and related allowances. Therefore, although sick and maternity leave compensation and allowances are administered by the HZZO, these categories of expenses are excluded from the total health expenditure in order to maintain international comparability. Other reports on Croatian health expenditure usually include HZZO cash transfers, and this may explain the differences in the reported figures.

Composition of beneficiaries

Changes in the composition of beneficiaries are expected to have a significant impact on the financial flows of the health insurance system in the coming years. Whereas the percentage of the active workforce contributing to the HZZO has remained stable at around one third of all the beneficiaries, the proportion of beneficiaries falling under the categories of "unemployed" and "pensioner" has been increasing over the last few years (see Fig. 3.1). Since health care costs for these two groups are covered by the State and pensioners are likely to be among the highest users of health services, the changes in the profile of the HZZO beneficiaries is likely to lead to higher spending and lower revenue.

Fig. 3.1 Beneficiary composition, 1995 and 2002

Source: World Bank, 2004.

Contributions and revenues

The HZZO revenue structure has been heavily dependent on the salary contributions of the 1.4 million insured employees and employers, whose combined contributions accounted for 80% of the HZZO revenue in 2002.

The payroll contributions have largely subsidized health care coverage for the remaining 2.8 million insured people, with central budget transfers covering the deficits. This financing structure has been part of the legacy of the 1993 health reform, when the payroll tax contribution rate had been increased initially to 18% in order to cover the severe financial deficits facing the health system in the post-war period. In 2000, the payroll tax for health insurance was lowered to 16% as part of the Government's fiscal policy to reduce the tax burden on the labour force. This was further reduced to 15% in 2003, along with an added contribution of 0.5% for occupational safety and workers' compensation. As shown in Table 3.6, Croatia's payroll contribution rate for health insurance remains among the highest in the region.

Although Croatia nominally operates a social health insurance system, the total amount of funds allocated for health care is annually determined by the state budget and collected through the State Treasury. The HZZO receives funds for social health insurance from the state budget, as was previously explained, originating from two main sources: salary contributions for compulsory health insurance and funds collected by general taxation. Therefore, the Croatian funding system displays characteristics specific to both Bismarckian and Beveridge-like models.

Citizens' views on social health insurance: pre-2002

In a survey conducted in 1999 and 2000 at the Andrija Stampar School of Public Health at the Zagreb University School of Medicine, 500 randomly selected adults from all regions of Croatia aged 40 and over were asked about their attitudes towards health insurance and its reforms in Croatia as well as towards private payments for health care services (Mastilica and Babic-Bosanac, 2002). The survey included questions on social health insurance, private payments for health care and background information.

Most of the citizens interviewed (83.2%) expressed the opinion that everybody should have access to health care services, irrespective of health insurance contributions. However, 31.2% agreed that the utilization of services should depend on the payment of contributions. Of the respondents, 39.1% believed that the money they contributed to health insurance corresponded to the health care services they received and 60.1% agreed that the insurance rate should increase proportionately to income. When asked about reforms, more than half of those surveyed (53.4%) thought that the (pre-2002) health insurance covered fewer benefits than 10 years earlier, whereas more than a third believed that the changes offered more choice (36.9%) but less equity (37.7 %) and 46% disagreed with the introduction of a basic package of health care benefits and

Table 3.6 Comparison of health insurance contributions in selected central European countries

	Payroll tax rate for health		
Country, year introduced	**Salaried (employer; employee)**	**Self-employed**	**Non-employed**
Croatia, 1993	18% (18%; 0%)	18% of declared income	18% of gross benefits plus central budget transfer
Croatia, 2000	16% (7%; 9%)	18% of a set fixed amount which depends on formal qualification[a]	Central budget transfer
Croatia, 2003	15% (15%; 0%) (0.5% occupational safety)	18% of a set fixed amount which depends on formal qualification[a]	Central budget transfer
Czech Republic, 1993	13.5% (9%; 4.5%)	13.5% of declared income	Central budget transfer, equal to 13.5% of 80% of statutory minimum wage
Estonia, 1992	13% (13%; 0%)	13% of declared income	Central budget transfer
Hungary, 1990	14% (11%; 3%) plus hypothecated tax of US$ 170 per employee	14% of declared income	Central budget transfer
Slovakia, 1994	13.7% (10%; 3.7%)	13.7% of declared income	Central budget transfer, equal to 73% of statutory minimum wage

Sources: Preker et al., 2002; World Bank, 2004.

Note: [a] The base rate is set at HRK 2318 (US$ 346), which is multiplied by coefficients (the total of nine levels of qualifications) ranging from 1 (non-skilled workers) to 2.8 (doctoral degree holders).

supplementary insurance. More than half of respondents thought that they had already been paying too much for health care out of their own pockets.

The survey reflects the concerns of the Croatian public with regard to the discussions that had started at the time on insurance reforms. This was prior to the change in the health insurance legislation. Participants in the survey mostly supported the principle of universal health care services provided by the Government. Respondents did not agree with the rationing of benefits and the implementation of market mechanisms in the Croatian social health insurance system.

Health Insurance Law 2002

The Government's new Health Insurance Law, finalized in October 2001 and approved in January 2002, aimed to improve the financial sustainability of the system by reducing the extent of coverage for basic services, reorganizing the co-payment system, stimulating the purchase of a voluntary "Supplemental Health Insurance" plan[2] and redefining the contributions from the central and local government budgets. Under the new Law, the complementary insurance has been introduced to allow policy-holders to purchase policies that cover the new co-payment rates, thereby re-establishing the full level of coverage. At the same time, new restrictions have been imposed on the private sector. The new Law enacted some reforms, as shown below.

- A new co-payment "price schedule" for selected services in the current benefits package, with higher rates for hospital and specialist services, diagnostic tests and pharmaceuticals. Although the major categories of exemptions remain, the categories of beneficiaries exempt from co-payments have been reduced to some extent compared to previous years (see Table 3.7).
- Compulsory basic insurance coverage is exclusively provided by the HZZO, thus removing the "opt-out" clause, which had permitted those with income above a certain level to purchase substitutive private insurance in place of the HZZO basic plan. Implicitly, there was an expectation that the complementary insurance would act as a new tax revenue source for the HZZO (Langenbrunner, 2002).
- The option for consumers to purchase complementary insurance policies on a voluntary basis, covering co-payments and restoring the full coverage of the basic health services. From 2002 to 2004, complementary insurance was exclusively offered by the HZZO. The community-rated premium is set at HRK 50 (retired) and HRK 80 (working age) (US$ 7.50–11.90 in 2003 US$) per month, which can be paid at individual or employer level. As an added incentive, a tax refund equivalent to the amount of the cumulative premium for one year is given to any individual or employer that purchases complementary insurance.[3]

[2] The Croatian use of the term "Supplemental Health Insurance" under the Health Insurance Law 2002 should not be confused with the technical definition of the different categories of voluntary health insurance used in the EU context. Under these definitions, the Croatian "Supplemental Health Insurance" plan would be categorized as "complementary voluntary health insurance" (see Table 3.1).

[3] Personal Income Tax Law (*Official Gazette*, 127/00) allows for premiums for additional health insurance (including premiums for life and voluntary pension insurance) to be tax-deductible expenses from July 1, 2001. The rebate is open-ended and can be renewed each year.

- A clarification of central and local governments' responsibilities for providing subsidies to vulnerable categories of the population, which were until 2002 mainly subsidized from payroll contributions.
- The administration of a workers' compensation fund for occupational safety under the HZZO.

The new Law represented an important step in rationalizing health system financing, but it also raised a number of new issues. The effectiveness of the new co-payment system in mitigating excessive utilization was undermined by the broad exemptions as well as the effect of the "Supplemental Health Insurance" plan, and as a voluntary plan, "Supplemental Health Insurance" was open to adverse selection problems, i.e. the plan was more likely to be purchased by high-end users, such as pensioners, which was further exacerbated by the discount policy for the pensioners (who were given a 50% discount on "Supplemental Health Insurance" premiums to encourage their participation).

The categories of the population exempt from paying contributions prior to the 2002 Health Insurance Law were children under 18 years of age, pensioners, pregnant women and those receiving maternity benefits, farmers, unemployed people, those in households where the head of the household is over 65, and social assistance beneficiaries. These groups made up somewhere between 1.7 million and 2.0 million of a total population of approximately 4.5 million (38–44%). Until the 2002 legislation, the HZZO covered insurance contributions for these groups.

In terms of real uptake of complementary insurance, in 2002 approximately 50% of the "Supplemental Health Insurance" was being purchased by pensioners, who are considered high-end users of health care services. In the first year of implementation, revenue exceeded expenditure, but as the market matures it is likely that the utilization rates and expenditure will eventually overtake revenues.

Although data for 2004 and 2005 are not publicly available, government officials have indicated that in those years the complementary insurance scheme has incurred financial deficits and is no longer financially sustainable. Several options for further reforms are being debated at the time of writing, including abolishing complementary insurance completely, as was the case in neighbouring Slovenia, and allowing private insurers to enter the market and compete for customers on the basis of risk-rated complementary insurance plans.

Amendments to the Health Insurance Law of 2005

The amendments to the Health Insurance Law of 1 October 2005 have further increased the co-payments schedule from 2002 by introducing "administrative fees" into the system of finance. All patients, with the exception of people under 18 and the disabled (with invalidity over 80%), are required to pay deductibles of HRK 5 or HRK 10 (US$ 0.83 or US$ 1.66)[4] (charged by their respective GP) for obtaining certain products and services, such as prescriptions or referrals to specialists. If a patient bypasses the gatekeeping system by seeking care directly from a hospital emergency ward without prior consultation with his GP, then specialist consultations in emergency departments not judged to be of an emergency nature are also subject to an administrative fee of HRK 10 (US$ 1.66). The maximum amount of "administrative fees" that can be charged to a patient is HRK 30 (US$ 4.96) per month. Further referrals, prescriptions, etc. are free of charge.

Other amendments to the 2002 Health Insurance Law introduced in October 2005 include cutbacks in the HZZO's financial participation in patients' transportation and funeral costs.

According to the Croatian Minister of Health, Dr. Neven Ljubicic, amendments to the Health Insurance Law were necessary as the public health care system faced a serious lack of funds that threatened to disable it from providing a high-quality level of services (Cafuk, 2006).

Allowances other than health care

Croatia continues to provide one of the most generous sick leave compensation packages by international standards. Since the State takes on almost the entire risk of added labour costs due to illness or maternity, there is little incentive on the part of the employers and employees to be judicious in the use of sickness benefits. As a result, there are indications that the current system is subject to abuse, often as a result of collusion between employer and employee, who may use the sick benefit for other purposes, e.g. in lieu of unemployment benefits. Under the 2002 Health Insurance Law, some modest reductions in the level of compensation were introduced (see Table 3.7), but the benefits remain essentially unchanged.

Since policy formulation and analysis of sick and maternity benefits are more appropriately considered as part of employment policies rather than of health

[4] All figures in this paragraph are in 2004 US$ according to the average 2004 exchange rate as reported by the Croatian National Bank.

Table 3.7 Changes in co-payment exemptions and central and local government contribution policies under the new Health Insurance Law 2002

Status before 2002	Health Insurance Law 2002
Exemptions for: • People under 18 • Unemployed people • Homeland War Veterans and members of their families; family members of deceased members of the Croatian Army or Police Forces who died as a consequence of wounds received during the war, were imprisoned or missing, political prisoners and World War II veterans; civil invalids • Refugees and returnees • Pregnant women receiving maternity benefits • Voluntary blood donors with more than 50 blood donations and donors of human body parts • Beneficiaries of social care institutions whose costs were either fully or partly covered by social care institutions • Individuals with an income below HRK 1275 per month • Pensioners with an income below HRK 1700 per month • Disabled people with permanent physical damage with an income below HRK 2550 per month • Individuals injured at work or suffering from an occupational disease • People suffering from infectious or mental diseases undergoing treatment • Individuals participating in organized health care measures • All pensioners and voluntary blood donors with more than 25 blood donations exempt from co-payment for prescription drugs.	1. Exemptions for: • People under 18 • Disabled people; people with at least 80% disability • Croatian Homeland War invalids • Pregnant women receiving maternity benefits • People with monthly per-capita income below HRK 1516.32 from March 2004 • Pensioners living alone with monthly income below HRK 1939.40 from March 2004 • Voluntary blood donors with more than 35 (men) and 25 (women) blood donations. 2. General Revenue Subsidies on Contributions General revenue contributions from central and local governments are transferred to the HZZO for selected categories of the population in order to compensate for differences between the HZZO reimbursement and the full cost of health services. **Central Government** compensates HZZO for the following categories of the population: Unemployed people; people without health insurance over 18; draftees and military reservists during service; farmers over 65; individuals incapable of independent living and work; people without means of support; war or civil invalids and beneficiaries of the survivor's disability pension; Homeland War Veterans; secondary school students and regular university students without health insurance coverage. **Central or local government** compensates health insurance for the following categories of the population: People participating in public works and civil protection programmes; members of operation units of fire-fighting brigades; and beneficiaries of financial compensation for physical injury according to pension regulation.

Source: World Bank, 2004.

care, consideration could be given to moving their administration outside of the view of the Health Insurance Fund. This will permit the integration of sick benefits into labour and social welfare programmes, while allowing the HZZO to concentrate its resources on developing the expertise and capacity of its core functions, namely the financing of health services, and ensuring access to cost-effective and high-quality medical care for the covered population.

3.2 Complementary sources of financing

According to government estimates, prior to the 2005 reform, 80% of the overall health care expenditure was from public funds. The other main sources of financing for health care services are out-of-pocket payments and private health insurance.

3.2.1 Out-of-pocket payments

A continuing tendency to increase private out-of-pocket payments for health care has emerged under the health care system reforms in Croatia. It could be viewed as a part of a broader governmental policy of "privatizing and rationing" the health care system (Hebrang, 1994). In order to control and gradually reduce expenditure on health care, the Government applied measures that primarily influence the supply side or aim to reduce demand for services and raise the financial responsibility of the insured. The introduction of cost sharing, the reduction of the list of prescription drugs, the expansion of the private medical sector, and other forms of personal formal and informal spending related to health care have increased direct payments on such a large scale that citizens view it as a significant burden (Mastilica and Bozikov, 1999).

In 2002, the Government estimated that private spending constituted approximately 2.0% of GDP, or one fifth of the total spending on health care in Croatia. Results of the Household Budget Survey conducted in 2001 suggested that direct household spending on health care accounted for approximately 1.2% of GDP (see Table 3.8). Reported revenue from health care providers indicated that reimbursements from private insurers accounted for approximately 0.7% of GDP.

It should be noted that the Household Budget Survey results might have underestimated actual household spending, owing to a relatively long recall period (four months) used for outpatient services and medical products.[5]

[5] Typically, recall periods of two to four weeks are used for these expenditure items.

Furthermore, as the Household Budget Survey was implemented in 2001, it does not show the effects of the 2002 and 2005 reforms of the Health Insurance Law, which have significantly increased the role of private payments in funding health care.

The analysis of the Household Budget Survey data did not reveal any regressive spending patterns by income quintiles with respect to mean per-capita health spending. However, when groups are divided according to their social welfare status, it is evident that the pensioners and disabled people incurred the highest out-of-pocket expenditure. This is not surprising given that they face chronic conditions that require frequent and repeated use of health services and products.

A more revealing pattern emerged when the variance on expenditure was analysed for different categories of households. Tables 3.8 and Table 3.9 show household health expenditure by income quintile groups and welfare status, respectively. For example, retired individuals spent on average 779 HRK (US$ 93), or 3.54% of total household expenditure on health (see Table 3.10). When the distribution of expenditure was analysed for this category of household, it revealed that some 6.8% of retired people spent more than 10% of their household budget on health care (see Table 3.11). This would suggest that by 2001 a significant number of pensioners were already facing a major financial burden, and that the existing health insurance system was not adequately providing protection for these groups of beneficiaries. The effects of higher co-payments and the complementary insurance scheme introduced in 2002 as well as the administrative fees introduced in 2005 require further analysis.

Table 3.8 Mean household spending on health, in HRK (US$[a]), 2001

	Mean HRK per capita per year	Share of total household expenditure[b]
Household health expenditure per capita	447 (54)	2.02% (0.09)
- medical products	274 (33)	1.24% (0.05)
- outpatient services	156 (19)	0.71% (0.06)
- hospital services	16 (2)	0.07% (0.02)
Household expenditure per capita	22 092 (2 649)	
GDP per capita	36 712 (4 402)	
Household expenditure on health, as % of GDP		1.22%

Sources: World Bank, 2004; Central Bureau of Statistics, 2003.

Notes: [a] US$ figures calculated on the basis of the 2001 annual average of the US$/HRK exchange rate, as reported by the Croatian National Bank; [b] For the "Share of total household expenditure" column, standard errors are reported in parentheses (clustered on household identifiers); GDP per capita is estimated by dividing total GDP in 2001 (HRK 162.9 billion) by population (4.437 million); billion = 1000 millions.

Table 3.9 Household health expenditure by income quintile groups, in HRK (US$[a]), 2001

Income quintile group[b]	Mean health expenditure (per capita, per year)	Mean total expenditure (per capita, per year)	Share of health expenditure (as a % of total expenditure)	Estimated population
1 (lowest)	214 (26)	12 606 (1 512)	1.69%	848 479
2	308 (37)	16 588 (1 986)	1.86%	847 538
3	443 (53)	21 639 (2 595)	2.05%	847 782
4	498 (60)	25 104 (3 010)	1.99%	848 530
5 (highest)	772 (93)	34 549 (4 143)	2.24%	846 436
Total	**447 (54)**	**22 092 (2 649)**	**2.02%**	**4 238 764**

Source: World Bank, 2004.

Notes: [a] US$ figures calculated on the basis of the 2001 annual average of the US$/HRK exchange rate, as reported by the Croatian National Bank; [b] Quintile groups are created according to total income per capita.

Informal payments outside of formal co-payments appear to be a fairly widespread phenomenon. Preliminary results from a 2002 study conducted by the HZJZ on informal payments in Zagreb suggested that some 44% of respondents who used health services indicated that they had made some form of informal payment. An earlier study conducted in 1994 (Mastilica and Bozikov, 1999) also confirmed that co-payments accounted for only a small

Table 3.10 Household health expenditure by welfare status, in US$,[a] 2001

	Mean health expenditure (per capita, per year)	Mean total expenditure (per capita, per year)	Share (as a % of total expenditure)	Estimated population
Employed	49	3 075	1.58%	1 141 429
Self-employed	52	2 651	1.98%	419 014
Unemployed	31	2 156	1.44%	277 308
Retired	93	2 636	3.54%	818 712
Others (inactive)	44	2 510	1.75%	581 598
Disabled	57	2 362	2.41%	312 818
Age 15 and under	31	2 404	1.29%	687 886
Total	**54**	**2 649**	**2.02%**	**4 238 764**

Source: World Bank, 2004.

Notes: [a] US$ figures calculated on the basis of the 2001 annual average of the US$/HRK exchange rate, as reported by the Croatian National Bank; All amounts are attributed to the individuals according to household expenditure per capita. Welfare status is based on the individual's most frequent activity status in the last 12 months, except for disabled people, whereby status is defined by self-reported disability to work, receiving an invalidity pension or receiving other invalidity benefits.

Table 3.11 Distribution of relative health expenditure by social welfare status, 2001

Relative expenditure on health (% of total health expenditure)	Relative frequencies (within groups)					
	Employed (%)	Unemployed (%)	Retired (%)	Disabled (%)	Others (inactive and age 15 and under)(%)	Total (%)
0	23.5	32.8	16.6	26.1	25.7	23.7
0–2	51.0	46.6	32.4	37.5	51.9	46.4
2–5	18.6	14.2	26.5	24.7	15.0	19.2
5–0	5.1	3.9	17.8	7.9	5.7	7.9
+10	1.8	2.4	6.8	3.8	1.5	2.9

Source: World Bank, 2004.

Note: Social welfare status is based on the most frequent activity status in the last 12 months, except for disabled people, whereby status is defined by self-reported disability, receiving invalidity pension or receiving other disability benefits.

share of household expenditure on health care with the greater share spent on informal payments.

Thus, exemption from co-payments may provide only limited relief from the financial burden of medical care for low-income households. Other forms of direct payment include payments for private consultations and non-prescription drugs and informal payments for physicians.

3.2.2 Private health insurance

In 2005, five major insurance companies offered private health insurance: Zagreb, Sunce, Croatia Osiguranje, Addenda and Grawe. The package of supplementary health insurance is sold in a few dozen variants and primarily marketed and sold to employer groups, such as banks and large firms. Increasingly, these packages attract international companies with both domestic and international workers. The supplementary insurance mostly covers "upgrades" on medical services, facilities and pharmaceuticals, including private care. It may also cover out-of-country surgery, notably in Germany and the United Kingdom (Langenbrunner, 2002). Since 2004, it may cover co-payments charged by public providers. The Health Insurance Law of 2002 has initiated a setback in the growth of the private insurance market in Croatia, as private insurers were suddenly closed out of the substitutive health insurance market[6] (see Fig. 3.2).The regulatory framework for the medical insurance market remains largely undeveloped.

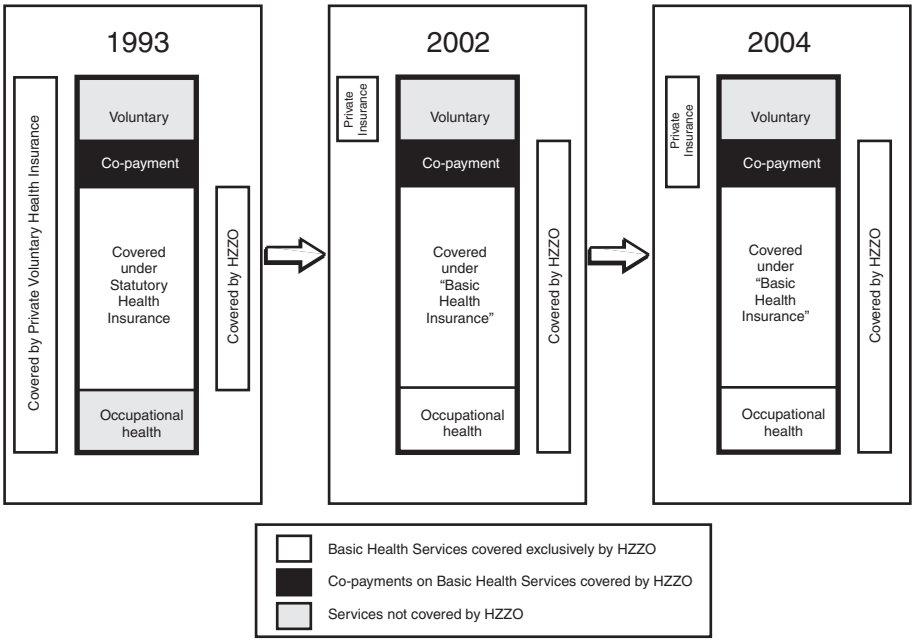
[6] Voluntary health insurance is not permitted to substitute for the "Basic Health Insurance".

3.2.3 External sources of funding

Croatia joined the World Bank in 1993. Since then, the World Bank has assisted the country with financial support, technical assistance, policy advice and analytical services. The World Bank has been actively involved in the health sector reform and provided assistance through its country-specific analytical studies and investment lending.

The first Health System Project for Croatia was completed in 1999 and was funded by a US$ 40 million loan, with a focus on post-war reconstruction needs in the health sector. The Structural Adjustment Loan completed in 2003 that supported the Government's structural reform agenda had a health sector component to enhance fiscal discipline. The current Health System Project, funded by a US$ 29 million loan from the World Bank provides support to the health sector from improving health service delivery to promoting public health and prevention.

Fig. 3.2 Relationship between voluntary and statutory health insurance, 1993–2004



Source: World Bank, 2004.

The World Bank is engaging the new Government in the 2004–2007 Country Assistance Strategy. The Bank is working with the Government to prepare a Programmatic Adjustment Loan with a health component to improve sustainability of health financing.

3.3 Health care expenditure

Croatia spends a relatively high share of its GDP on health. As shown in Table 3.12 below, there was a period of rapid cost escalation in the late 1990s, which peaked in 2000. From 2000 until 2002, it appears that public spending was contained. According to the Croatian Ministry of Health, in 2003 total spending on health was estimated at 8.9% of GDP, in 2004 at 9.7% of GDP and in 2005 at 8.7% of GDP. The "rise" of expenditure in 2004 is attributed to the settlement of HZZO and hospital arrears from 2000, 2002 and 2003, which amounted to more than HRK 3 billion (more than US$ 532 million) (Ministry of Health, 2006). The major share of public health spending in Croatia is accounted for by the HZZO. The HZZO funds most direct spending on personal health services while the central Government funds public health services, capital investments, research and health administration.

As part of the general decentralization policy, a small but increasing share of public spending on health is being picked up by the local governments. In 2002, county governments spent just 3% of their revenues on health care compared to nearly 20% for education (World Bank, 2004).

Reliable data on private spending are currently not available, but as was previously discussed, government estimates place private spending somewhere around 2% of GDP, or approximately one fifth of total health expenditure (see Table 3.13). Private spending includes expenditure on private health insurance, direct out-of-pocket payments by households, and voluntary spending by private corporations on health services for their employees. It should be noted that the estimate of 2% of GDP for the year 2002 could be an underestimate, especially if the cost-containment policy on the public side resulted in cost shifting to private spending. If one assumes that private spending remained constant at 2% of GDP in 2002, then there was a real decrease in total spending on health care in that year. On the other hand, if private spending increased to compensate for the decline in public spending on health, then the total spending on health care might not have decreased. From 2002 to 2005, the Croatian Ministry of Health estimates that private spending in health care remained at 2% of GDP (Ministry of Health, 2006).

Table 3.12 Estimated total spending on health, as a percentage of GDP, 1998–2002

	1998	1999	2000	2001	2002
HZZO[a]	6.9	7.6	8.0	7.3	6.6
Ministry of Health[b]	0.6	0.3	0.2	0.1	0.2
Local government	0.1	0.1	0.0	0.1	0.2
Total public expenditure on health	**7.6**	**8.0**	**8.2**	**7.6**	**7.0**
Estimated private spending on health[c]	1.6	2.0	2.0	2.0	2.0
Total health care expenditure	**9.2**	**10.0**	**10.2**	**9.5**	**9.1**

Source: World Bank, 2004.

Notes: [a] Excludes cash transfers for sick and maternity leave, but includes operating expenses of HZZO; [b] Direct budget of Ministry of Health for policy, regulation, public health and related activities; [c] Government estimates.

In 2002 Croatia spent a higher proportion of its GDP on health (9.1% in 2002, down from the all-time high of 10.2% in 2000) compared to the central and Eastern European countries' average of 5.9%, the newly independent states' average of 2.9% and the EU average of 8.9% in 2001. However, owing to the rise of its GDP and cost-containment efforts in health care, Croatia has been able to reduce spending to 8.7% of GDP in 2005.

Nevertheless, despite the reductions, the Croatian health care system is still heavily burdened by arrears. According to the Croatian Ministry of Health, in December 2004 clinical hospitals owed HRK 1.3 billion (US$ 216 million),[7] general hospitals owed HRK 890 million (US$ 148 million) and special hospitals owed HRK 180 million (US$ 30 million) to various suppliers (Ministry of Health, 2006). By the end of 2003, HZZO's debts grew to HRK 3.686 billion (US$ 613 million), of which HRK 980 million (US$ 163 million) was for pharmaceuticals (Ministry of Health, 2004).

Furthermore, reforms of the Croatian health care system focused mainly on centralizing financing, rationing services, and encouraging the provision of private health services with incentives. Although these changes may have contained costs, they have increased the inequality of access to health care and proved highly unpopular with users (Mastilica and Kusec, 2005).

Compared to selected European countries, when analysing specific categories of expenditure Croatia spends the highest percentage of total health expenditure on the category pharmaceuticals and medical consumables, and one of the lowest percentage on inpatient services (see Table 3.14).

[7] All figures in this paragraph are in 2004 US$ according to the average 2004 exchange rate as reported by the Croatian National Bank.

Table 3.13 Per-capita spending on health (total, private and public), 1997–2002, in constant HRK (1997 prices (US$[a]))

	1997	1998	1999	2000	2001	2002
Total	**2 268 (368)**	**2 728 (443)**	**2 885 (469)**	**3 053 (496)**	**3 056 (496)**	**2 899 (470)**
Private[b]	433 (70)	451 (73)	551 (90)	558 (91)	605 (98)	637 (103)
Public	1 835 (298)	2 276 (370)	2 334 (379)	2 495 (405)	2 450 (398)	2 262 (367)

Source: World Bank, 2004.

Notes: [a] US$ figures calculated on the basis of the 1997 annual average of the US$/HRK exchange rate, calculated by the Croatian National Bank; [b] Assumes private spending at 2% of GDP, based on government estimation.

The share of public health care expenditure in overall health expenditure remains high relative to all EU countries, but this, as mentioned earlier, can be deceptive to the extent that private health care expenditure is only estimated and there are no reliable data available on private spending.

Table 3.14 Comparison of health spending by function, Croatia and selected European countries

Categories of expenditure	Czech Republic 1999	Denmark 1999	Germany 1998	France 1999	Italy 1997	Croatia 2001
Inpatient	35.1	53.9	34.4	43.8	44.5	27.3
Outpatient, ancillary and home health	27.4	32.5	34.0	26.8	27.7	34.7
Pharmaceuticals and medical consumables	27.0	9.0	12.7	22.8	17.5	21.2
Therapeutic appliances	3.4	2.5	6.1	2.2	2.2	3.4
Others (health administration, public health, etc.)	7.1	2.1	12.8	4.4	8.1	13.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Sources: OECD, 2001; Croatia figures were calculated by the author based on available data on government, private insurance and household expenditure.

4 Health care delivery system

4.1 Public health services

4.1.1 Institutional responsibilities and organization

Public health services in Croatia have a long-standing tradition. The Ministry of Health and the HZJZ are responsible for determining the national strategy for public health, setting national annual targets, measuring and monitoring performance against set targets and, together with the county public health institutes, organizing and delivering preventive and health promotion services.

Public health services are organized through a Network of Public Health Institutes: one state institute (HZJZ) and 21 county institutes. Their internal organization comprises the following departments: epidemiology, social medicine, environmental health, microbiology and school health. Each department is responsible for implementing programmes in its area of work and overseeing the work of relevant services at county level. The Network of Public Health Institutes provides the following services: epidemiology of quarantine and other communicable diseases, epidemiology of noncommunicable diseases, water, food and air safety, immunizations, sanitation, health statistics and health promotion. Additionally, the system monitors the work of health care providers in terms of the number of services provided, distribution of personnel, etc.

Public health institutes are also responsible for overseeing compulsory immunization programmes. These programmes are carried out by primary health care doctors (family doctors and primary health care paediatricians) and school doctors for children of school age. Non-compulsory vaccination programmes are delivered through family medicine doctors or county public health institutes.

The National Centre for Addiction Prevention works under the HZJZ and runs the National Register of Treated Psychoactive Drug Addicts, founded in 1978. From 2003, county Centres for Addiction Prevention form a part of county institutes of public health.

Ownership of public health institutes is distributed across two levels: the HZJZ is owned by the Ministry of Health, while county institutes belong to the respective counties. Services are funded from several sources, mostly state and county budgets. Some services are contracted by the HZZO or charged directly to users.

The Croatian National Institute of Public Health (HZJZ)

The HZJZ is responsible for the collection, analysis and presentation of statistics and epidemiological data and for health promotion and health education at national level. It also maintains a number of public health registers, including: the Croatian National Cancer Register, the Croatian National Psychoses Register, Suicides in Croatia, the Croatian National Register of Treated Psychoactive Drug Addicts, the Tuberculosis (TB) Register, the HIV Register, the Register of Legionnaire's Disease, the Croatian Register of Disabled Persons and the National Health Workers Register.

The Ministry of Health consults the HZJZ on all matters pertinent to public health policy and priorities. The HZJZ proposes national anti-epidemic measures, supervises compulsory immunizations and pest control, monitors environmental pollution and waste maintenance, sets standards and tests food safety and drinking water. It participates in research targeted at health care personnel, the health care system, health promotion and prevention programmes. It also supervises and coordinates all county institutes of public health.

The Croatian Institute of Blood Transfusion Medicine

The Croatian Institute of Blood Transfusion Medicine organizes blood collection through health care providers and humanitarian actions. It stores and distributes blood and its components and products. It carries out specific haematological analyses and controls transfusion activities. In Croatia, blood is collected solely through voluntary donations and there are no donation fees.

The Croatian Occupational Health Institute

The Croatian Occupational Health Institute is a health care institution for provision of specific health care for employees in the country. This Institute

coordinates and expertly supervises all occupational health offices that provide specific health care services for employees.

Established at tertiary care level, the Occupational Health Institute is responsible for proposing, planning and carrying out measures for the maintenance and advancement of workers' health. Its responsibilities include: developing a doctrine, standards and working methods in the area of occupational health; following up on the health of employees with specific working conditions; participating in the education, coordination and overseeing of professional activity for occupational health practices; and keeping registers and statistical surveys related to occupational health.

The Occupational Health Institute also offers expert assistance in drafting health legislation, supervising the implementation of specific health care for employees, and cooperating with all levels of existing health care services.

The Croatian Mental Health Institute

The Croatian Mental Health Institute works to plan, propose and implement measures to protect and improve the mental health of the population. This Institute plans and proposes development strategies and programmes towards the improvement of mental health care and psychiatric care at primary, secondary and tertiary care levels.

Furthermore, the Mental Health Institute conducts research on mental health care and psychiatric care in order to monitor, analyse and evaluate the mental health of the population. It aims to protect and improve mental health with health education, promotion and other activities, and plans, coordinates and controls specific care towards improving the mental health of children and youths, especially in primary and high schools, as well as in universities.

The Mental Health Institute collects and analyses epidemiological data on mental illnesses and disorders for the mental illness registry. Additionally, it monitors and evaluates quality measures for prevention, diagnosis and treatment in mental health care and psychiatric care, and takes part in health personnel education.

The Croatian Institute of Toxicology (CIT)

The primary role of CIT is the protection of human health from harmful chemicals. It does this by issuing preliminary appraisals for products with the potential to pose human and environmental health hazards, if used improperly. CIT maintains records of the notified new substances and their notifiers, aggregate annual lists of procès-verbal by corporations and individuals, and

data from manufacturers' technological safety sheets, as well as a Biocidal Preparations and Poisonings Registry.

In addition, it verifies the validity of product labels and of user instructions; organizes and conducts education for protection from hazardous chemicals; and issues information certificates on the protection of harmful chemicals. It also participates in safety overseeing, and inspections of, the central stocks of antidotes in Croatia and undertakes informational-documentation and informational-consulting activities relating to acute poisonings with hazardous chemicals.

The National Institute for Radiation Protection

Established by the Ionizing Radiation Protection Act, the National Institute for Radiation Protection has evolved from the Croatian Institute for Radiation Protection. It is responsible for keeping records about the sources of ionizing radiation that are prepared by personnel and on the abilities and qualifications of source handlers. The Institute also explores the presence and strength of ionizing radiation in the environment, both under normal conditions and in the case of accidents. It also proposes protective measures; supervises the transportation and consumption of radioactive materials; monitors and analyses the levels of exposure of individuals with occupational exposure to radiation; applies the intercommunicative system of personal dosimeters; as well as examining individuals exposed to radiation in the course of diagnostic and therapeutic procedures.

The Drug and Medical Products Agency

Established under the Drug and Medical Products Act (*Gazette of the Republic of Croatia* 121/03 and 117/04), the Drug and Medical Products Agency evolved from a merger between the Croatian Institute for Drug Control and the Croatian Institute for Immunological Preparation Supervision. Its main objectives are to define drug quality standards and procedures; ensure the quality of medicines in manufacture and marketing; supervise the quality of medical accessories and equipment; perform assays and other procedures as needed by the pharmaceutical industry; provide expertise as needed by government administrative bodies and authorized health bodies; and the preparation and publication of the Croatian Pharmacopoeia, along with participation in the European Pharmacopoeia.

The Agency is also responsible for preparing periodic reports on the quality of medicines. Following the provisions of the Drug and Medical Product Act,

the Agency controls all certified immunological preparations and decides on the conditions for the release of registered immunological preparations to the market. All high-biotechnology preparations must be passed by strict and sophisticated methods, because of the risk of transmission of viral, prion and other diseases.

Education

Medical universities and the Andrija Stampar School of Public Health provide professional education and capacity building for public health professionals. The School of Public Health organizes several postgraduate courses in public health specialties (i.e. public health, epidemiology, medical informatics, occupational health, medical ecology). In 2002, the School launched a postgraduate course on "Leadership and management in health services".

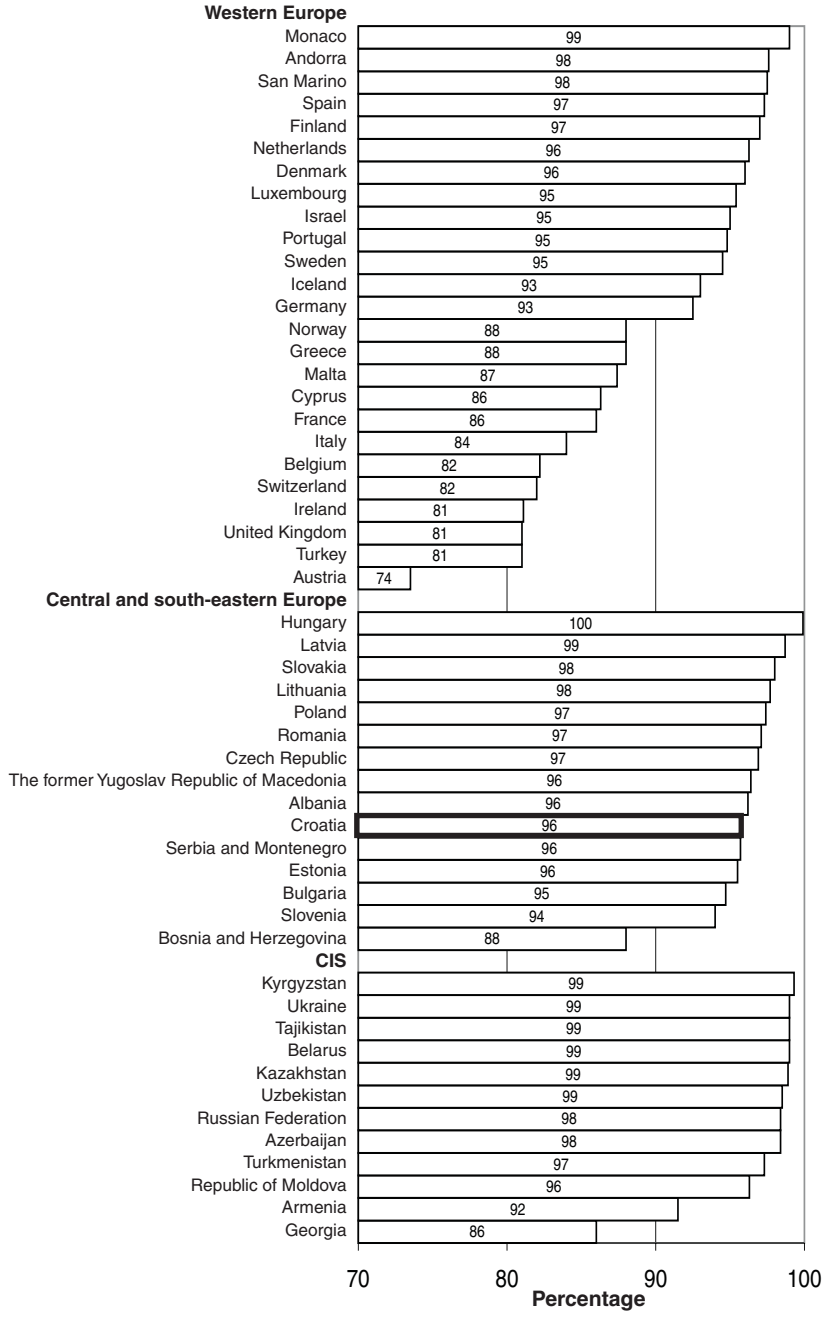
4.1.2 Public health programmes and activities

Organized public health care services and activities have kept infectious diseases under control. Under the National Mandatory Immunization Schedule, approximately 500 000 people are immunized annually, receiving approximately 900 000 individual doses of mostly polyvalent vaccines (a single application containing two or three different vaccines). The target coverage stipulated by the Schedule for most vaccinations is 95%. This target coverage was achieved for all primary vaccinations in 2005 (whereby immunity base is formed at the infant/young child age).[8] For example, the level of immunization for measles was 96% in 2004, similar to the Netherlands, Denmark, Albania and Estonia (Fig. 4.1). Repeat vaccination for those under 18 years takes place periodically under the Schedule. Diseases preventable through vaccination have either totally disappeared (diphtheria, poliomyelitis) or their incidence has been drastically reduced by more than 90%. Morbidity from measles has been reduced by 99%, along with mumps (98%), rubella (99%), pertussis (97%), tetanus (93%) and TB (89%) (HZJZ, 2004a).

Immunization against influenza is free for the elderly, health workers and individuals suffering from immunodeficiency disorders. In 2005, around 600 000 people in Croatia were vaccinated. As a result, there was a noted decrease in the number and duration of sick leave cases among the active working population.

[8] Primary vaccinations given to children differ from repeat/booster vaccinations.

Fig. 4.1 Levels of immunization for measles in the WHO European Region, 2004



Source: WHO Regional Office for Europe, 2006.
Note: CIS: Commonwealth of Independent States.

Communicable diseases

HIV/AIDS

According to the HZJZ (2006b), from 1985 until December 2005, 553 HIV-positive individuals and 239 AIDS cases were reported in Croatia. Since the mid-1990s, between 30 and 60 new HIV/AIDS cases were reported annually. In Croatia, HIV/AIDS primarily affects men who have sex with men (40.3% of all reported HIV cases), followed by heterosexual transmission (40.0% of all reported cases). Most of the heterosexual transmission is due to imported cases of people who have many sexual partners. More than 80% of all reported HIV/AIDS cases are male and 80% of all reported cases are adults aged 20–49.

The State provides highly active antiretroviral therapy (HAART) to all infected individuals who require it. In 2005, 267 individuals were receiving HAART therapy. Treatment of HIV/AIDS is centralized in the capital Zagreb. Voluntary counselling and testing (VCT) centres operate in Zagreb, Rijeka, Split, Dubrovnik, Osijek, Pula and Zadar. All blood donations are tested for HIV antibodies (HZJZ, 2004a).

In June 2003, Croatia started its Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)-funded project aimed at interventions focusing on vulnerable population members (intravenous drug users, men who have sex with men, commercial sexual workers, migrants and young people). The GFATM project aims to develop the following interventions: peer education, exchange of syringes and needles, condom promotion and distribution, strengthening nongovernmental organizations' (NGOs) capabilities, improving counselling skills of medical professionals and increasing access to VCT services.

Tuberculosis

During the war, an increase was observed in the incidence of TB. This was mainly attributed to the significant inflow of refugees from less-developed areas of the former Yugoslavia. In 1997, the incidence rate for all forms of TB per 100 000 population was 45, considerably higher than the 13 per 100 000 EU average (WHO Regional Office for Europe, 2000). During the last few years, the incidence trend has been falling and was 26 per 100 000 population in 2005.

Food-borne diseases and intoxications

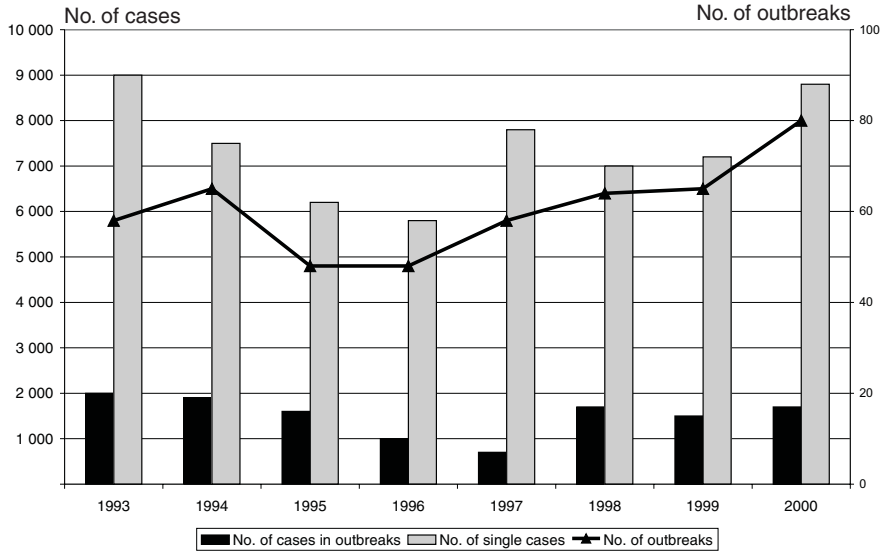
In Croatia, food-borne diseases are monitored through a well-established system for the surveillance of communicable diseases. The Department of Epidemiology at the HZJZ and the 21 county institutes (comprising 113 independent epidemiological units) are responsible for the collection and

distribution of surveillance data. Outbreaks of infectious diseases, including food-borne diseases and intoxications, are reported immediately by telephone or fax. Following an epidemiological investigation and the gathering of relevant data, the outbreak is reported (by statutory obligation) on a special form to the corresponding county institutes and to the HZJZ (WHO Regional Office for Europe, 2000).

In 1999 and 2000, 66 and 79 cases of outbreaks of food-borne diseases, respectively, were reported to the HZJZ. This reflects an upward trend observed since 1996 (see Fig. 4.2).

In more than 90% of the food-borne outbreaks investigated in 1999 and 2000, the food responsible for the diseases was identified. Meat and meat products and eggs and egg products continue to be the most frequently reported categories involved in these outbreaks. Notably, egg cream cakes, sausages and pork played a dominant role.

Fig. 4.2 Food-borne disease outbreaks and cases reported, 1993–2000



Source: WHO Regional Office for Europe, 2003.

4.1.3 Health promotion and education

Policy framework

The policy framework for health care and health insurance is founded in the acts listed below.

The Health Care Act states that each person has a right to health care and the possibility to accomplish the highest possible level of health. Nobody has the right to endanger the health of others. The principle of an integrative approach to primary health care is ensured by implementation of consolidated health care measures, including health promotion and disease prevention.

The Health Insurance Act identifies categories of those individuals who have the right to health insurance, which includes all population groups and subgroups including the unemployed, the chronically ill and the disabled. The right to health care is ensured according to the Health Care Measure Plan and Programme.

In accordance with the Health Care Act, the Croatian Minister of Health enacts for each biennial a Health Care Measure Plan and Programme. Health priorities are selected based on situational analysis – according to which Croatia has an ageing population and a population growth rate with negative natural increment (more people are dying than new babies are born); morbidity and mortality indicators; chronic noncommunicable diseases; and injuries that are nationally prevalent.

The following priorities were listed by the Health Care Measure Plan and Programme, which has been in force since 2002.

- Vulnerable groups: women, infants and young children, school-age children and young people (including full-time students and the active working population).
- Public health problems: cardiovascular diseases (arterial hypertension, ischaemic heart disease and cerebrovascular diseases), malignant diseases (breast cancer, uterine cervical cancer, colonic and rectal cancers), mental diseases and disorders (including alcoholism, schizophrenia, post-traumatic stress disorder (PTSD), depression, and senile and presenile psychoses), acute infectious diseases (TB and AIDS), and injuries.

The Programme includes primary, secondary and tertiary prevention measures, centring on not only health promotion with the objective of improving the health of the population, but also on simultaneously reducing the prevalence of risk factors for individual diseases. Combined with these measures is care for the maintenance of the quality of life of patients, i.e. combining preventive health care interventions with curative ones, and orienting the latter towards maintaining (and improving) quality of life.

There is a list of strategic documents and programmes adopted and/or conducted on governmental, cross-governmental and intersectoral levels, having strategic value in creating the conditions for good health and health promotion. These include: Health Promotion and Disease Prevention Act (in the preparatory stage); National Programme for Prevention of Cardiovascular Diseases; National Programme Acting for Youth; National Plan for Activities Aimed at Protecting the Rights and Interests of Children (2006–2012); Croatian Food and Nutrition policy; National Programme for Prevention of Cardiovascular Diseases; Croatian Food Guidelines; Croatian Food Guidelines for Children (still under development); National Programme for Control of AIDS; National Strategy for Prevention and Control of Psychoactive Drug Abuse (2006–2012); Traffic Safety Programme; National Programme for Roma;* First Croatian Health Project;* Second Croatian Health Project; National Cancer Prevention and Early Detection Programme* (in the preparatory stage); Health Development Strategy of the Republic of Croatia (in the process of enacting); Croatian Alcohol Action Plan; and Croatian Tobacco Action Plan.[9]

The Network of Public Health Institutes

Croatia has accepted the modern concept of health promotion, which intends to improve the level of public health by tackling health determinants and not just preventing disease. Unlike the preventive procedures, which are mainly targeted at the highest risk population groups and individuals, health promotion is aimed at the entire population. The HZJZ takes a leading role, along with 21 county public health institutes, and together they form the Network of Public Health Institutes. Health promotion and disease prevention is divided into the following units: health promotion; social medicine; school health; drug prevention; epidemiology of chronic noncommunicable diseases; epidemiology of communicable diseases; and environmental health. In 2003, the Network of Health Promoters was established as part of the CroCan Project between the Canadian Society for International Health, the Croatian Ministry of Health, the HZJZ and the Andrija Stampar School of Public Health.

Many activities have been initiated by the National Public Health Institute and spread throughout the country via the Network of Public Health Institutes, such as:

- activities for World Health Day, World No Tobacco Day, World Heart Day, World Diabetes Day, Quit & Win Campaign, etc., in collaboration with professionals and experts in the fields of health production and facilitating

[9] Programmes indicated with * are discussed in detail in the subsection Specific projects for health promotion and disease prevention.

the distribution of educational packages, CDs, educational seminars, and promoting materials on these topics;

- education and training of professionals who work in schools and in centres for drug prevention.

Additionally, the National Public Health Institute has developed two interactive web sites:

- http://www.zdravlje.hr/ aimed at the public, to provide health information across a broad range of subjects, with question and answer facilities;
- http://www.hzjz.hr/ aimed mainly at health professionals.

Specific projects for health promotion and disease prevention

First Croatian Health Project; health promotion

Initiated in 1995, this project was the starting point for a health promotion programme in Croatia. It was led by the Ministry of Health and the HZZO, and supported by the World Bank. The aim of the project was to promote healthier lifestyles (nonsmoking, proper diet, regular physical activity and responsible sexual behaviour) and to establish baseline parameters for health promotion programme development.

Organized by the HZJZ, the project began with a nationwide survey of adult lifestyle habits and attitudes, anthropometric measurements and laboratory tests, and secondary school lifestyle habits and attitudes. It was followed by training in health promotion predominantly for individuals in public health, primary care and the education sectors. A large media campaign was run in parallel, including TV and radio coverage, and advertisements though newspapers, leaflets, posters, billboards, educational brochures and promotional events.

School health

Until 1998, school health services were responsible for comprehensive (curative and preventive) health care. Since the reforms in 1998, exclusively preventive health care measures for school children, youths and university students have been provided by school health services, while GPs are responsible for illness among children and youths.

School health services are part of a network that reaches even the most remote areas of Croatia and performs the following tasks: systematic examinations; work with school staff and parents; health education and health promotion; counselling (guidance) service; health care for students with developmental disorders; immunization according to the national mandatory immunization schedule; care of the school environment; collaboration with others involved

(family physician/GP, other health services, local community and social welfare service); and additional multidisciplinary projects. The principles of health promotion are included in many of these activities, as educators are trained and involved in national and local initiatives.

A cooperation programme has been initiated between Flanders and Croatia, entitled the "implementation of a methodology for the development of evidence-based guidelines in school health care". The project partners in Flanders are the Katholieke Universiteit Leuven, Department of Youth Health Care and the Flemish Society for Youth Health Care; and in Croatia, the Society for School and University Medicine, the HZJZ and the University of Zagreb, Department of Social Medicine. The expected outcomes after two years are: the creation of a methodology for guideline development, adapted to local possibilities and constraints; increasing the capacity of the Croatian Society for School and University Medicine to act as a coordinator for the development and implementation of guidelines for School Health Care in Croatia in the future; and developing a model for European guidelines for School Health Care.

National Programme for Prevention and Early Detection of Cancer

A comprehensive National Programme for Prevention and Early Detection of Cancer is still under development. Nevertheless, a *Health Care Measure Plan and Programme* from the social health insurance plan was passed at the beginning of 2002 (for a two-year period) by the Minister of Health in compliance with the Health Insurance Act. It envisages general oncological care measures against malignant diseases. This covers population education on cancer prevention methods (from school age onwards) following the European Codex against Cancer, as well as measures for primary prevention, detection and early diagnosis of breast cancer, uterine cervical cancer, and colonic cancer. Tertiary prevention measures are also included, e.g. education and emotional support for women that have undergone a mastectomy and health education for individuals having undergone a colostomy.

Under this programme, the General/Family Medicine Service must ensure health promotion, health education and health awareness of the population, taking care of high-risk individuals, encouraging self-protective and mutual protection activities, carrying out preventive medical check-ups and continuous patient care, and maintaining patient registries. School health services, positioned in public health institutes, provide systematic examinations, health education and individual guidance for school children and students, covering risk behaviour, sexually transmitted diseases, breast and testicle self-examination, and securing regular visits to gynaecologists for sexually active individuals. In primary care, gynaecologists take part in health education and

training programmes for the prevention of sexually transmitted diseases, genital organ cancers, health education, early detection of breast cancer and cervical carcinoma, early detection of choriocarcinoma, ovarian carcinoma, and early detection and treatment of pre-cancerous vulvar and vaginal changes.

Since 2005, the Programme for Prevention and Early Detection of Cancer has been developed in Croatia, particularly for breast cancer. The Senological Society of the Croatian Medical Association runs the "Mobile Mammography" project. The initial proposals and recommendations for the (primary) prevention of cancer have fully taken account of the recommendations by the European Code against Cancer and Scientific Justification (third version, 2003).

National Programme for Roma

The National Programme for Roma (2003) has been prepared in order to apply a multidisciplinary and systematic approach to address the problems of the Roma population in all fields, according to recommendations from the Council of Europe and the EU. The Programme is based on the provisions contained in international documents on human rights and the rights of national minorities to which the Republic of Croatia is a party. The experience of other countries that are addressing the challenges of Roma in a systematic manner has been taken into account. The Roma population themselves have participated and contributed in the creation of the Programme.

The National Programme for Roma defines the following priorities: health survey, health education, vaccination of Roma children, improved community nursing, fight against alcoholism, smoking and other addictions, and monitoring of Roma population's access to and use of health care.

Beyond health care, the National Programme for Roma encompasses complementary projects from different areas such as inclusion of Roma in social and political life, preservation of traditional culture, legal aid and the fight against discrimination, education, employment, social welfare and protection.

The purpose of the health care project is to support the programme for improvement of the health status and health care of Roma, thereby reducing health inequalities among the Roma population in Croatia. For the implementation of this Programme, five target counties in central and eastern Croatia were selected (Međimurska, Varaždinska, Osječko-baranjska, Sisačko-moslavačka and Grad Zagreb) because of the large number of Roma living in these counties.

Health Promoting Schools Programme

Since 1993, Croatia has been part of the European Network of Health Promoting Schools (ENHPS). At national level, the Programme seeks to build health promoting policy in schools, with plans to allocate school health services in the areas of policy implementation and development. At school level, the Programme supports schools in building health promotion approaches at the physical, emotional, social and learning levels, by offering individual approaches when needed through school health counselling services.

The HZJZ is the national coordinator hosting institution. The Ministry of Health and Social Welfare and the Ministry of Science, Education and Sport signed the agreement for Croatia to become a member of the ENHPS, with responsible individuals named in both ministries. Also involved in the Programme are experts from the Andrija Stampar School of Public Health, Zagreb Medical School, University of Zagreb. From 1996 to 2000, the United Nations Children's Fund (UNICEF) Croatian Office provided support to the Network. A pilot project, "Twin schools", involved the pairing of local institutions, e.g. the Zagreb City Office for Health, Work and Social Welfare and the City Office for Education in 2001, supported by the Network of Health Promoting Schools Programme, city of Zagreb.

Maternal and child health/breastfeeding

In 1989, recognizing the benefits of breastfeeding, UNICEF and the WHO introduced a worldwide programme for breastfeeding promotion known as "Ten steps to successful breastfeeding", which also included the Baby-Friendly Hospital Initiative (UNICEF, 1991). The programme was initiated as a response to decreasing rates of breastfeeding and to the expansion of commercial milk supplements and their aggressive advertising. This programme was launched in Croatia in 1993. By 2000, through concentrated efforts, 15 of a total of 32 maternity hospitals have been accredited as "baby-friendly hospitals". Hospitals are awarded baby-friendly status when standard procedures in maternity wards are brought in line with WHO/UNICEF breastfeeding recommendations. Since 1998, "Happy baby" parcels with supplies for neonates have been handed out to new mothers. At the beginning of 2006, UNICEF reintroduced this programme, to which some government measures have also contributed. The National Action Plan for Children's Rights and Interests 2006–2012 was adopted on 22 March 2006 following these recommendations.

Public health research, public health data collection and other projects

Croatia has a long tradition and a highly developed system for the collection, processing and analysis of public health data. Apart from routine studies, the

HZJZ conducts special studies, some of which are carried out in collaboration with WHO. These include:

- World Health Survey – WHS (WHO, Geneva);
- European Health Interview Survey – EUROHIS (WHO, Copenhagen);
- European School Survey Project on Alcohol and Other Drugs – ESPAD (Council of Europe);
- Health Behaviour in School-Aged Children (WHO, Copenhagen);
- Global Youth Tobacco Survey – GYTS (WHO, Copenhagen; CDC-Atlanta, United States).

The other health promotional and preventive projects in Croatia are Healthy Cities (since 1992), the Countrywide Integrated Noncommunicable Disease Intervention (CINDI) project (since 1992), and Health Promoting Schools (since 1993), as well as several smaller projects within the framework of biannual agreements with the WHO Regional Office for Europe. Two of the largest campaigns were "Say YES to NO-smoking" and the promotional event "The Big Breakfast", both organized by the Andrija Stampar School of Public Health.

Sustaining the environment to safeguard quality of life

Within the HZJZ there is a Department of Environmental Health that addresses aspects of health and quality of life, which are closely related to the environment. This Department acts at national level and coordinates the network of county institutes of public health and their ecology outposts. Some aspects are addressed through interdisciplinary collaboration with other science- and environment-related departments, such as the Ministry of Health and Social Welfare, the School of Medicine, the Institute for Environmental Protection, and the Ministry of Agriculture, Forestry and Water Management. The Department of Environmental Health is made up of several units, which are responsible for drinking water, food safety, safety of objects of common use, toxicology, and more.

The Ministry of Health coordinated the development of the National Environment and Health Action Plan (Ministry of Health, 1999), which the National Health Council adopted in May 1999. The plan contains sections on water quality, air quality, waste management and food safety (WHO Regional Office for Europe, 2000).

Drinking water

The public drinking water supply system covers 77% of the total population; however, there are significant regional differences in coverage. In some rural parts of the country and in some islands, less than 50% of the population has

access to the public water supply. Those without access get their drinking water from wells of 10–100 m in depth. The surveillance of drinking water has shown that less than 10% of samples from the public water supply do not meet the standards, and approximately one third of samples from the wells were contaminated microbiologically (HZJZ, 2005).

Food safety

Food safety is one of the most important aspects of safeguarding health, working ability and quality of life. The Sanitary and Veterinary Inspection controls production, importation and distribution of food products by taking samples and sending them for analysis to the laboratories authorized by the Ministry of Health. They conduct analyses of food products within the Food Safety Monitoring Programme. Every year the laboratories at the Department of Environmental Health conduct over 40 000 analyses of food products; however, the standards are not met by 10% of samples. There are also laboratories outside of the health system, such as the Veterinary Institute and the Nutritional Technological Institute. The most common reasons for not meeting the standards are microbiological contamination, the amount of additives, and incorrect and irregular labelling.

Air quality

The routine assessment of air quality is conducted with reference to the recommended limit values, which are equal or close to the WHO Air Quality Guideline values. In most locations, the air pollution levels have been below the reference values since 1995. The exceptions are mostly the mass of sediment dust, or the amount of cadmium or lead in the sediment dust, which were higher than the national recommended levels in several cities. However, there are no data on the concentration of metals in suspended particulate matter and it is difficult to assess the health significance of these findings.

Noise monitoring

Currently, there is no regulation regarding a noise monitoring system and evaluation of noise effects on the environment in Croatia. Therefore, there are no systematic data on noise available. Measurements and evaluations of noise are performed in cases of citizens' complaints. If citizens' complaints can be taken as an indicator of noise effects on the environment, then it is worth noting that the most complaints are made with regards to loud traffic and loud clubs and bars. In 2003, a new law, based on European guidelines on noise, was

adopted, but regulation regarding a noise monitoring system and evaluation of noise effects on the environment is still in progress.

Environment

The lack of an integrated waste management system is an environmental problem and also a potential source of health risks. Data on population exposure to hazardous chemicals are scarce. The war in the early 1990s left behind a specific environmental health hazard in the form of land mines. According to the Croatian Centre for Human De-mining, less than 5% of Croatia's surface may still have mines (1150 km^2).

4.2 Primary health care

According to the Croatian Health Care Law, the two main roles to be fulfilled by primary health care are: being the foundation of the health care system, and gatekeeping. Primary health care is organized as a network of first-contact doctors. Each insured citizen is required to sign up with a specific GP.

Primary health care is delivered through a network of individual offices, larger units comprising several offices (some including small laboratories), and health centres that provide general medical consultations, primary care gynaecology services, care for pre-school children, school medicine, occupational health services and dental care.

The 1993 health reform set the stage for the disintegration of health centres and the privatization of individual offices. Currently, most of primary health care is provided through private practices comprising a team of a doctor and a nurse, financed by capitation. Most of the health centres that were exclusive providers of primary health care with salaried employees prior to the reform currently represent administrative bodies that lease offices and (depending on the availability of equipment) provide emergency medical care, laboratory services and radiological diagnostics. Presently over 80% of private practices in primary health care operate in leased facilities.

Primary health care is organized around several medical specialties but is gradually moving towards a family physician system. All GPs currently practising in primary care are required to specialize in family medicine by 2015 (Katic et al., 2004).

Primary health care comprises the following services:

- general practice/family medicine

- dental care
- infant and pre-school child care
- primary care gynaecology
- community nursing and home care services
- emergency medical care
- public health services (hygiene, epidemiology and school medicine)
- occupational health services.

General practice/family medicine

General practice/family medicine treats patients of all ages and, as previously discussed, will be transformed into a family medicine service. GPs are required to treat patients in their offices, provide home visits and provide preventive check-ups. Doctor and nurse teams are independent entrepreneurs owned by the doctor and contracted by the HZZO. Each GP is expected to carry a minimum of approximately 1700 people per year on a roster. This number is low compared to the GP rosters of 2000–2500 people in most European countries. This lower figure was established deliberately to encourage physicians to work in underserved areas. As can be seen from Fig. 4.3, in 2001 Croatia had 0.7 GPs per 1000 inhabitants. This is slightly lower than the 1 per 1000 EU average, but remains higher than the respective number for most central and eastern European countries.

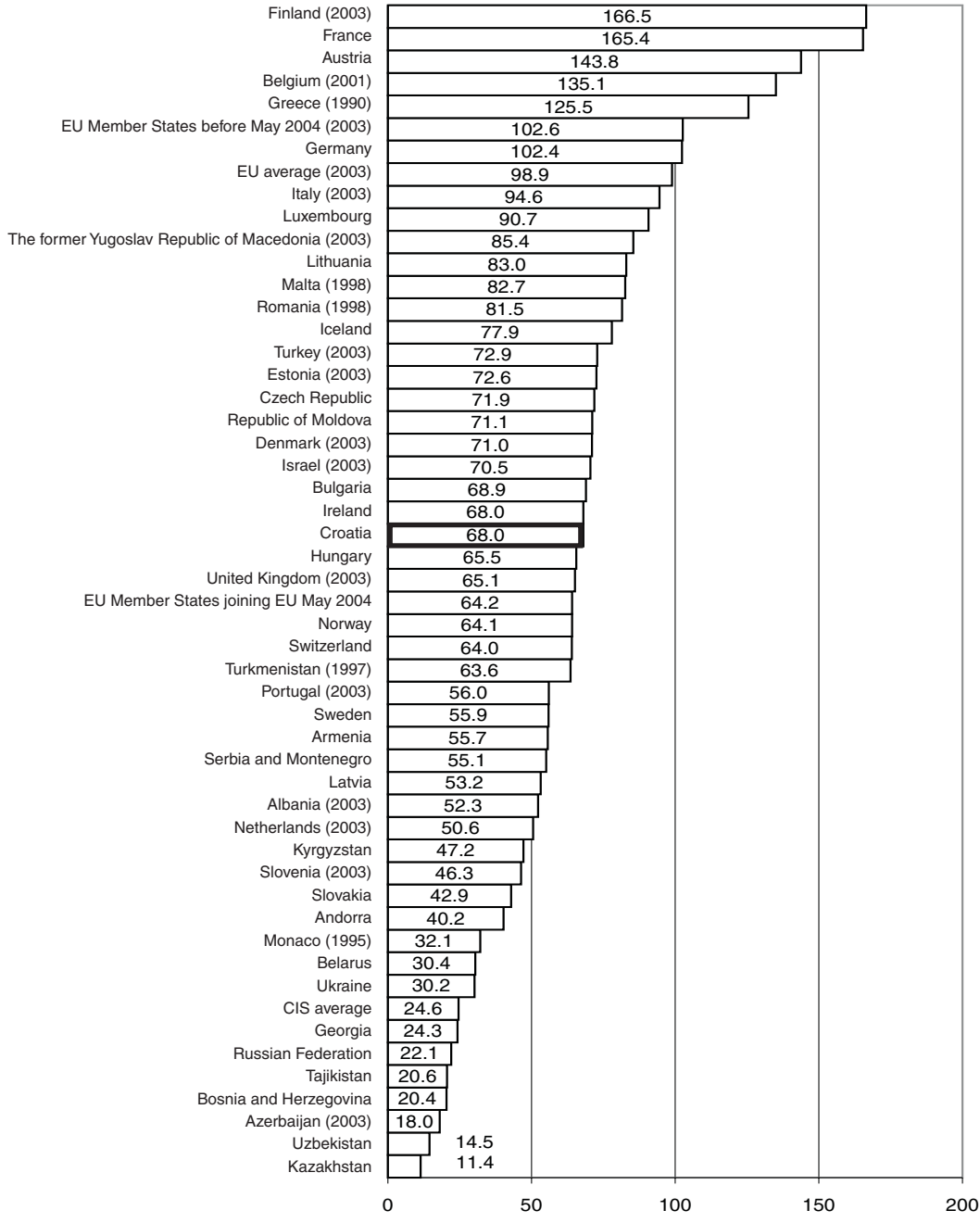
In 2004, a total of 2391 doctors worked in general practice/family medicine. Of these, 1008 were specialists (family medicine, school medicine, occupational medicine and others), the rest were graduates of medical schools. In 2004, general practice/family medicine offices provided 24.6 million consultations (HZJZ, 2005). See section 5.3 on payment of primary care physicians.

Infant and pre-school child care

Infant and pre-school child care is delivered by teams consisting of a paediatrician and a nurse that carry on average 1200 individuals per year on a roster. Contracted by the HZZO, these teams provide prevention (vaccination) and treatment services. Depending on the parents' decision, they provide services to children until the age of 6 years or 15 years, when they are taken over by respective family physicians.

In 2004, a total of 260 paediatricians worked in primary health care and provided 2.5 million consultations (HZJZ, 2005).

Fig. 4.3 Number of GPs per 100 000 population, 2004 or latest available year



Source: WHO Regional Office for Europe, 2006.

Oral health

Dental services are provided by teams consisting of a dentist and a nurse, contracted by the HZZO or working privately without HZZO contracts. They provide preventive and curative services. On average, contracted teams carry 2500 people per year on a roster. They are organized in the same manner as general practice offices. Apart from dental practices, the dental care system includes dental and prosthetic laboratories, which operate as a part of a health centre or individually. Private offices charge the cost of services directly to patients.

In 2004, a total of 1930 HZZO contracted teams worked in primary oral health. 257 dentists were specialists (paedodontics, orthodontics, etc.), the rest were graduates of dental schools and HZZO contracted teams provided 4.7 million consultations, while private dentists reported 512 650 consultations (HZJZ, 2005).

In 2005, Croatia had a total of 3164 dentists, of which 501 were self-employed; 72 were employed by private institutions (larger dental clinics); and 2591 worked in smaller clinics (public) and 1431 in private clinics not controlled by HZZO.

Primary care gynaecology

Primary care gynaecology deals with the outpatient treatment of female reproductive system disorders as well as prevention and maternity care. A team (gynaecologist and nurse) carries 6000 women per year on a roster. They are organized in the same manner as general practice offices. Their services are covered by compulsory health insurance as additional care for women, separate from existing general practice. In 2004, 213 teams worked full time and 39 part time (HZJZ, 2005).

Community nursing

The community nursing service provides health promotion and treatment at home. It is delivered by nurses (graduates from nursing colleges) who cooperate with GPs. In 2004, the average number of insured in care per community nurse was 4892. The service is in the domain of health centres, and in 2004 it employed 870 nurses. Nursing priorities include chronically ill patients, pregnant women and mothers with infants (HZJZ, 2005).

Home care

Home care is organized through health centres or as an independent service in public or private ownership. Home care services are mainly targeted at people who cannot take care of themselves. The service comprises treatment, bathing, feeding and nursing at home, when recommended by a primary health care doctor. Costs of care are covered by health insurance based on contracts with the HZZO. Apart from the services covered by health insurance, other services can be rendered and charged for independently. In 2004, home care services employed 968 nurses, each performing on average 2.068 home visits per year (HZJZ, 2005).

Public health services and school medicine

Hygienic and epidemiological services and the school medicine service (since 1998) are under the jurisdiction of county institutes of public health. Their activities are coordinated with primary health care centres. The school medicine service implements regular medical examinations, vaccinations and health education for school children. A team (school medicine specialist and nurse) is in charge of 5000 primary and secondary school students. In 2004, the service employed 153 teams (HZJZ, 2005).

Emergency medical care

Emergency medical care is organized at the country level, and in different ways: additional work of doctors already operating in a certain area; individual services established by health centres for a certain area; and centres for emergency medical care, such as those operating in the four major cities – Zagreb, Split, Rijeka and Osijek.

In 2004, emergency medical services had 442 permanently employed physicians, and recorded 1 033 865 interventions. Except for medical care, emergency services are also used for transportation (HZJZ, 2005).

Occupational health service

At primary health care level, occupational health in Croatia is provided either through health centres, practices leased by health centres or through private practices.

In a health centre, the occupational health team is composed of an occupational medicine specialist, a nurse with secondary or post-secondary education and a psychologist. The psychologist, and potentially other specialists

(ophthalmologist, psychiatrist, neurologist and otorhinolaryngologist), are contractual employees in private occupational health practices. The 151 full-time and 16 part-time occupational health teams in 2004 employed 161 occupational health specialists.

The number of examinations performed under occupational health services was 126.7 per 1000 in 2004. It is estimated that fewer than half of the average number of employed workers regularly utilize one of the forms of occupational health care (HZJZ, 2005).

4.3 Secondary and tertiary care

4.3.1 Secondary and tertiary outpatient health care

Secondary and tertiary outpatient health care in Croatia represents outpatient specialist care. It is provided through consultations for primary health care physicians, specific diagnostic treatments or curative medical treatments (diagnostic procedures, treatment and rehabilitation).

Services may either be provided privately or publicly, in which case providers have to enter into contracts with the HZZO and the uptake of patients is based on referrals from physicians practising in primary health care. Secondary outpatient health care services are mostly delivered through hospitals. Some units are located in polyclinics or single practices. In 2004, there were 7.6 million examinations performed though outpatient specialist care (HZJZ, 2005).

4.3.2 Secondary and tertiary hospital care

Infrastructure

Secondary care facilities include hospitals, polyclinics and sanatoria. Hospitals are divided into general hospitals and special hospitals. All general and the majority of special hospitals are public county-owned. While general hospitals primarily serve the population of their respective county, special hospitals serve the entire population of Croatia. General hospitals have facilities for obstetrics and gynaecology, internal medicine, surgery and inpatient paediatric care. Other departments are optional, depending on need and the vicinity of another hospital or polyclinic offering those services. Special 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 has a number of sanatoria (spas) and medicinal

mud baths, which provide prevention, treatment and rehabilitation services through the use of natural mineral springs. A number of sanatoria are registered as special hospitals, owing to the additional health services they provide. Most offer tourist services, generating additional income.

Polyclinics provide outpatient specialist consultations and diagnostic and rehabilitation services. Most public polyclinics are linked to general and clinical hospitals. Others include private polyclinics and privatized specialist practices in health centres.

Tertiary care is provided in state-owned facilities: clinical hospitals and clinical hospital centres. Besides providing care (the most complex activities in a specific branch of medicine), they also engage in medical education and research. Clinical hospitals are general hospitals with at least four specialties at the teaching hospital level. Clinical hospital centres are general hospitals in which more than half of the units are at the teaching hospital level, and which carry out university education in over half of the teaching programmes for faculties of medicine, dentistry, pharmacy and biochemistry.

The Minister of Health determines which institutions are classified as clinics, clinical hospitals and clinical hospital centres according to the Health Care Law that specifies the criteria that hospitals have to attain in order to be granted special status (e.g. clinical hospitals, clinical hospital centres). The National Health Council accredits hospitals that meet certain normative standards set by the medical associations.

Secondary and tertiary care providers are integrated into the public health insurance system with the HZZO as the paying agent. Prior to receiving secondary or tertiary care, patients are required to obtain referrals from their respective GPs. In case of a medical emergency, patients are admitted directly to the hospital, thus bypassing the gatekeeping system. Private providers, such as private polyclinics not contracted by the HZZO, charge for their services directly and/or contract with private insurers offering supplementary health insurance.

The current organization of the Croatian system of hospitals suffers from several challenges. First, the counties (since 1993 owners of institutions offering primary and secondary health care) have neither the legislative nor the organizational capabilities required for the successful management of institutions that were trusted to them. Second, as almost all of the hospitals in the four biggest cities in Croatia (Zagreb, Split, Rijeka and Osijek) possess the status of clinical hospitals, the people living in those cities (almost 50% of the entire population) are left without local general hospitals that would provide them with secondary health care. Instead, they are usually referred directly to locally available tertiary care providers.

With regard to the geographic distribution of health care institutions and providers, basic supply-side indicators, such as number of beds and doctors per 1000 inhabitants and number of patients treated per 1000 inhabitants, reveal significant variations between individual Croatian counties. These differences may have been caused by a long history of unsystematic resource allocation between the counties, which has so far been primarily based on historic arguments, rather than analyses of regional needs.

Furthermore, analyses of the teritorrial distribution of health care institutions indicate that large disparities exist in regional geographic access to hospitals. For example, over 140 000 inhabitants of southern Dalmatia have to travel long distances to reach the nearest hospital (by air this distance is 40 km) (Ministry of Health, 2006).

In 2004, Croatia had two clinical hospital centres, five clinical hospitals, seven clinics, 22 general hospitals, 29 special hospitals, seven health resorts, four emergency care stations, 278 polyclinics and 145 nursing care institutions (HZJZ, 2005).

Secondary care provision

The population ratio of acute hospital beds in Croatia is closer to the western European average than the central and eastern European average (see Table 4.1).

When contracting with secondary and tertiary health care providers, the HZZO sets a variety of target standards and norms, such as average length of stay for hospital care for different specialties. These have been used, combined with financial incentives, to reduce average length of stay from 14.5 days in 1993 to 8.2 days in 2004. The concurrent rise in occupancy rates suggest productivity has improved. Nonetheless, the length of stay is still somewhat longer than the EU average (see Table 4.1).

4.4 Social care

4.4.1 Historical background

Social welfare policy was introduced for the first time in 1922 when legislation was enacted to provide for old age, disability and survivors. Modern Croatia inherited its social welfare system from the former Socialist Republic of Yugoslavia. However, soon after the declaration of independence, it became obvious that the system was in need of restructuring as it was not capable of

Table 4.1 Inpatient utilization and performance in acute hospitals in the WHO European Region, 2004 or latest available year

	Hospital beds per 1000 population	Admissions per 100 population	Average length of stay in days	Occupancy rate (%)
Western Europe				
Andorra	2.1	10.0	6.7[e]	70.0[e]
Austria	6.0[a]	28.8[a]	6.4[a]	76.2[a]
Belgium	4.8	16.9[e]	8.3[a]	65.9[a]
Cyprus	4.0[a]	8.1[a]	5.5[a]	72.8[a]
Denmark	3.2[a]	17.8[c]	3.6[a]	84.0[c]
Finland	2.2	19.9	4.2	74.0[j]
France	3.8[a]	16.6[d]	6.1[a]	84.0[a]
Germany	6.4	20.4	8.7	75.5
Greece	3.8[g]	14.5[f]	6.4[f]	66.6[f]
Iceland	3.7[h]	14.7[a]	3.6[a]	–
Ireland	2.9	14.1	6.5	85.4
Israel	2.1	17.3	4.2	98.0
Italy	3.6[a]	15.2[b]	6.8[b]	76.9[b]
Luxembourg	5.5[a]	18.4[j]	7.7[f]	74.3[j]
Malta	3.0	10.7	4.6	85.4
Monaco	15.5[i]	–	–	–
Netherlands	3.1[b]	8.8[c]	7.4[c]	58.4[c]
Norway	3.1	17.3	5.2	86.4
Portugal	3.1[a]	11.2[e]	8.2[e]	85.2[a]
Spain	2.8[b]	11.7[b]	7.0[b]	78.2[b]
Sweden	2.2	15.1	6.1	77.5[h]
Switzerland	3.9[a]	16.3[f]	9.0[a]	85.2[a]
Turkey	2.3	8.1[a]	5.6[a]	64.9
United Kingdom	2.4[f]	21.4[h]	5.0[h]	80.8[f]
Central and south-eastern Europe				
Albania	2.7	–	–	–
Bosnia and Herzegovina	3.3[f]	7.2[f]	9.8[f]	62.6[e]
Bulgaria	7.6[h]	14.8[h]	10.7[h]	64.1[h]
Croatia	3.6	14.6	8.2	89.9
Czech Republic	6.2	20.8	8.2	74.8
Estonia	4.3	17.2	6.2	68.4
Hungary	5.9	23.5	6.5	76.6
Latvia	5.4	18.8	–	–
Lithuania	6.1	21.9	7.9	77.4
Poland	4.7[b]	–	–	–
Romania	4.4	–	–	–
Serbia and Montenegro	–	–	9.7[b]	69.0[b]
Slovakia	6.1	17.8	8.4	68.6
Slovenia	3.9	16.6	6.2	73.2
The former Yugoslav Republic of Macedonia	3.4[c]	8.2[c]	8.0[c]	53.7[c]
CIS				
Armenia	3.9	7.0	8.5	41.8
Azerbaijan	7.6[a]	4.8[a]	15.8[a]	26.1[a]
Belarus	–	–	–	88.7[j]
Georgia	3.7	5.4	6.7	99.3
Kazakhstan	6.2	17.4	10.0	95.6
Kyrgyzstan	4.1	12.3[a]	10.3	90.0
Republic of Moldova	5.2	15.4	7.8	62.9
Russian Federation	8.2	21.3	12.2	87.3
Tajikistan	5.7	10.2	12.0	58.1
Turkmenistan	3.8	13.3	7.9	81.8
Ukraine	7.1	20.0	11.9	91.2
Uzbekistan	4.5	14.2	–	86.5
EU average	4.2	17.5[a]	6.9[a]	77.5[a]
EU Member States before 1 May 2004	4.0[a]	18.0[c]	6.9[a]	77.0[c]
EU Member States joining EU on 1 May 2004	5.2	20.6	7.4	73.8
CIS average	7.4	19.5	11.6	87.1

Source: WHO Regional Office for Europe, 2006.

Notes: [a] 2003; [b] 2002; [c] 2001; [d] 2000; [e] 1999; [f] 1998; [g] 1997; [h] 1996; [i] 1995; [j] 1994; CIS: Commonwealth of Independent States; EU: European Union.

handling the massive inflow of refugees, the uprooting of the population and the heavy casualties caused by the war of independence. Initially, government policy focused on meeting the basic survival requirements of refugees and others through cash grants and aid in kind. The 1997 Social Security Law marked the transition from a war-centred system to a system that gradually moved towards focusing on long-term housing services, various welfare institutions such as old people's homes, geriatric centres, community welfare centres, day care centres and financial assistance.

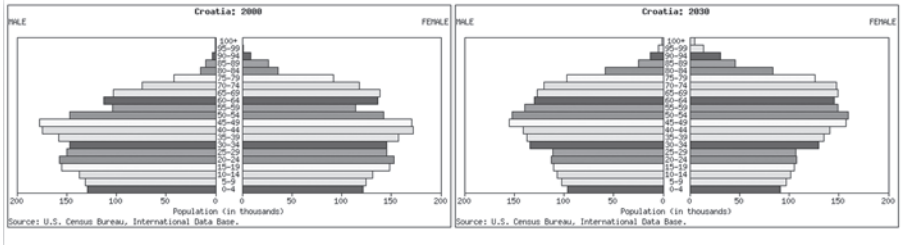
4.4.2 Specific benefits and policies

Ageing

Citizens over 65 years accounted for 16.1% of the total population in 2002. As shown in Fig. 4.4 and Fig. 4.5, owing to long-standing decreases in birth rate, and increasing life expectancy, the Croatian population is ageing. The economic transition and massive damage caused by the war have had a particular impact on the welfare of the elderly. Older people live mostly in their homes and with their families. Only 2% of the total population over 65 years have been placed in institutions. In 2001, Croatia had 64 public homes for older and infirm people and over 50 homes in the private sector. Since the capacities of accommodation in such institutions were, and still are, insufficient, social care policy for the elderly has focused on non-institutional forms of care.

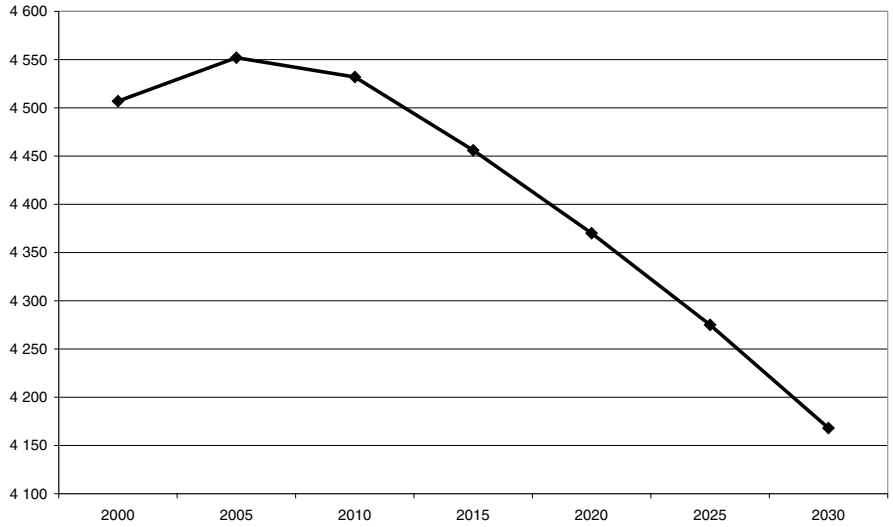
In addition to institutional care, homes for older and infirm people organize the provision of services and assistance within the local community. Centres for assistance and care are being established within the county offices for labour, health and social welfare. In addition, older and infirm individuals are being been placed with foster families. The use of a model of providing services in day care centres, which enable the elderly to go on living in their own houses or

Fig. 4.4 Population pyramids, 2000 and 2030



Source: U.S. Census Bureau, 2007.

Fig. 4.5 Population forecast in thousands, 2000–2030



Source: United Nations, 2006.

with their own families, is encouraged. Furthermore, in the care of the elderly, an increasingly important role is being played by the nongovernmental sector, which developed with the beginning of the war in Croatia, when the state-run systems of welfare and health care could no longer bear the burden of new welfare problems.

The basic principle of the development of the social welfare system in the care for the elderly and infirm rests upon decentralization and privatization. Legislation relating to the social welfare system provides for a legal and institutional framework within which the system is supposed to become gradually decentralized in financial and organizational terms.

Housing

Housing conditions affect people's health and well-being but the health situation of homeless people is especially critical. They often suffer from health problems typically associated with poverty, including malnutrition, infectious diseases and psychosocial stress caused by solitude and insecurity. Nevertheless, there are no reliable data on homelessness in Croatia.

The war forced over 700 000 people to leave their homes and become refugees. Approximately 200 000 buildings, mainly residential, were razed or damaged. In the meantime, many of the buildings were either reconstructed or

are currently under reconstruction. A variety of programmes targeted at young people, war veterans and other groups, such as government housing and long-term loans for housing construction, are currently being implemented.

Old age, disability and survivors

The Ministry of Labour, the Ministry of Health and Social Welfare and the Ministry of Finance supervise the organization and function of the regular and basic pension systems and the individual accounts. The Croatian Pension Insurance Institute administers the respective benefits. The Central Registry, pension companies and pension insurance companies provide general administration services and administer benefits with regard to individual accounts (Social Security Online, 2005).

Sickness and maternity

The Ministry of Health supervises the organization and function of the sickness and maternity benefits system. The HZZO with its 21 district offices administers the respective benefits. There is no minimum qualifying period to be eligible as a beneficiary. Entitlement to cash sickness benefit is determined by a designated doctor in a primary health care institution.

Unemployment

The Croatian Employment Institute administers the unemployment benefits programme through its central office and 22 regional and 93 local offices.

Family allowance

The Ministry of Health and Social Welfare supervises the organization and function of the family allowance system. The State Institute for the Protection of Family, Maternity and Youth provides legal supervision. The Croatian Pension Insurance Institute administers the family allowance programme.

Voluntary organizations

Social voluntary organizations play an important role in almost every field of social welfare in Croatia. In general, NGOs command a growing number of assets and mobilize large numbers of human resources, both salaried and volunteer workers. Very few NGOs, however, can be characterized as financially solvent. As a result, an increasing number of NGOs depend to a large extent on national funding (CERANEO, 1999). Funding cvomes from the Ministry of Health, the State Office for Civil Society, as well as foreign donors and private companies.

4.5 Mental health

The prevalence of mental health problems is growing in Croatia as it is in the EU. In 2004, one out of every four days of hospital treatment in Croatia was used to deal with mental health problems. Of these, 38.4% were for the treatment of schizophrenia (Central Bureau of Statistics, 2004).

4.5.1 Mental health care organization and delivery

The primary health care service in Croatia, which consisted of general practice and infant and pre-school child care in 2004, was provided by 2657 teams. These cooperate with the psychiatric service, school medicine and centres for drug abuse prevention within the 20 county public health institutes, local centres for social work and educational institutions. In the mental health service, 358 psychiatrists and 75 neuropsychiatrists were employed in 2004, providing outpatient and inpatient care for the population (HZJZ, 2004b). In 2004, there were 361 529 mental disorder diagnoses registered in primary care, and 457 774 consultations were provided by outpatient psychiatric services. The number of discharges for mental disorders was 41 214, representing 7% of all hospital discharges.

Reports from 2004 show that there were 0.19 psychiatric beds per 1000 population in general hospitals, with an average length of stay of 14.9 days. In addition, there were 0.75 hospital beds per 1000 in hospitals providing services for chronic psychiatric patients, where the average length of stay was 70.1 days. Bed utilization in psychiatric wards was among the highest of all hospital units, reaching the 100% level.

Between 1997 and 2004, there was a decrease of 10.6% in the total number of hospital beds. The decrease in psychiatric beds was even higher, amounting to 11.4%.

4.5.2 Intersectoral cooperation

Several government bodies have been formed, some of them permanent and others temporary, to improve a particular service or activity for those with mental disorders. More recently, a State Commission has been established to monitor the care of people with mental disorders. It includes representatives of different government bodies, including the health and social welfare authorities, legal experts and other professionals dealing with ethics and public relations. One of the tasks of this Commission is to encourage the implementation of mental health promotion programmes.

In 1999, the Ministry of Health formed a special body to develop improvements in community-based psychiatry. The Croatian Association of Psychiatrists has also elaborated a related draft framework. Several mental health programmes have been considered for further development, including: decreasing the stigmatization of chronic psychiatric patients, particularly of those suffering from schizophrenia; the prevention of depression and reduction of suicide rates; and the deinstitutionalization of long-stay patients.

According to the Health Care Law (2003) the Croatian Mental Health Institute was founded and within the framework of the SEE Health Network Mental Health Project, the first Community Mental Centre was established in the health centre for Zagreb-West.

The Commission for Narcotics is a permanent government body, comprising representatives of all authorities responsible for dealing with drug abuse, including the health, education and social welfare authorities. A strategy on prevention of drug abuse has been accepted by the Croatian Parliament and is currently being implemented. The Governmental Office for Drug Abuse Prevention and Centres for Drug Abuse Prevention in the 20 county public health institutes have been established.

Several other commissions, with more global tasks, have been formed to examine the possibilities of improvement in the quality of life of particular population groups, such as children and the elderly. In view of the high incidence of war-related psychological trauma, a Council of Experts was formed to propose, elaborate and implement psychosocial programmes for war victims. In 1999, a joint committee between the health and social welfare authorities was formed to, among other tasks, improve social care in the community for discharged psychiatric patients as well as health care for those chronic psychiatric patients who are residents in social institutions.

4.5.3 Mental health legislation

The Law on Protection of Persons with Mental Disorders was approved by the Croatian Parliament in 1997, with some revisions in 2000. This Law defines the rights of these people to protection and care. It also specifies the conditions in which these rights can be limited, elaborates the obligatory procedures related to these limitations, and defines the right to protection from mistreatment. In the original text of the Law, written consent was required from any person admitted in a psychiatric hospital. Compulsory hospitalization was subject to court supervision (Kozumplik et al., 2003).

In December 1999, the necessity for written consent was abolished. Furthermore, the period in which the hospital was obliged to inform the court of an involuntarily admitted person was prolonged from 12 to 72 hours.

Under this Law, in 2000 a State Commission for the protection of persons with mental disorders was also established. Its responsibilities are to elaborate on possibilities of further improvements in the status of people with mental disorders, to deal with complaints from psychiatric patients, and to define mental health promotion programmes. Additionally, in 2004, a Law on the Protection of Patients' Rights was approved by the Parliament.

4.6 Human resources and training

4.6.1 Physicians

The number of active physicians in Croatia has been rising, from a total of 10 110 in 1996 to 11 093 in 2004. The rate of physicians per 1000 population has risen slightly over this period, from 2.2 per 1000 in 1996 to 2.5 per 1000 in 2004. However, Croatia is still well below the EU average of 3.5 physicians per 1000 (HZJZ, 2005; WHO European Office for Europe, 2006).

Recently, Croatia has experienced a continuous decrease in the number of candidates interested in pursuing medical education. The number of medical graduates has fallen from 629 in 1996 to 410 in 2003.

4.6.2 Nurses

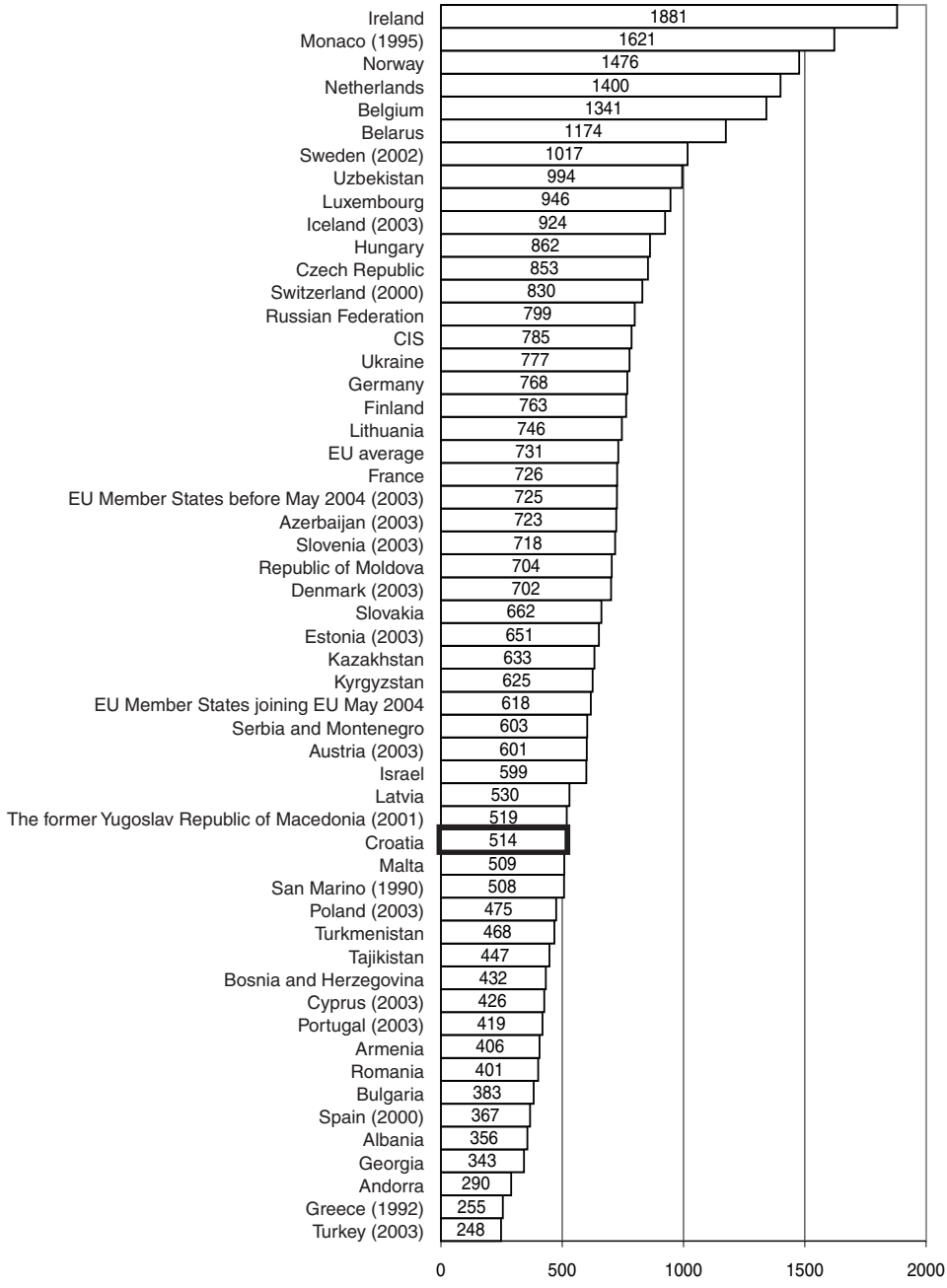
The number of nurses in Croatia has been rising, from 19 878 in 1996 to 22 799 in 2004. The rate of nurses per 1000 population has risen slightly over a period of eight years, from 4.4 per 1000 in 1996 to 5.1 per 1000 in 2004. In 2004, Croatia was well below the EU average of 7.3 nurses per 1000 (see Fig. 4.6).

All public sector nurses are registered. Croatia has a professional chamber of nursing, a nursing association and a system of registration for nurse certificates. There is also a Chief Nurse post in the Ministry of Health.

4.6.3 Dentists

The number of dentists in Croatia has risen substantially over a period of eight years, from a total of 2769 in 1996 to 3193 in 2004, an increase of 13.3%. In 2004, of the 3193 dentists registered, only 523 were employed in publicly owned

Fig. 4.6 Nursing staff per 100 000 population, 2004 or latest available year



Source: WHO Regional Office for Europe, 2006.
Note: CIS: Commonwealth of Independent States.

institutions, the others practising in private practices (HZJZ, 2005). With a rate of 71.9 dentists per 100 000 population (2004), Croatia was well above the EU average of 62.5 per 100 000 population (see Fig. 4.7).

4.6.4 Pharmacists

The number of pharmacists in Croatia has risen substantially from 1845 in 1996 to 2414 in 2004, an increase of 24%. The rate of pharmacists per 100 000 population has risen slightly over a period of eight years, from 41 per 100 000 in 1996 to 54 per 100 000 in 2004. Croatia is below the EU average of 78 pharmacists per 100 000 (see Fig. 4.8).

4.6.5 Training

There are four undergraduate medical schools in Croatia. They are situated in Zagreb and the regional centres Osijek, Rijeka and Split. The degree is completed over six years. Prior to practising, graduates must take a one-year internship and pass the state exam. Further specialization takes place after the internship. Since 2002, all physicians practising in general practice are required to specialize in family medicine by 2010. This specialization takes four years.

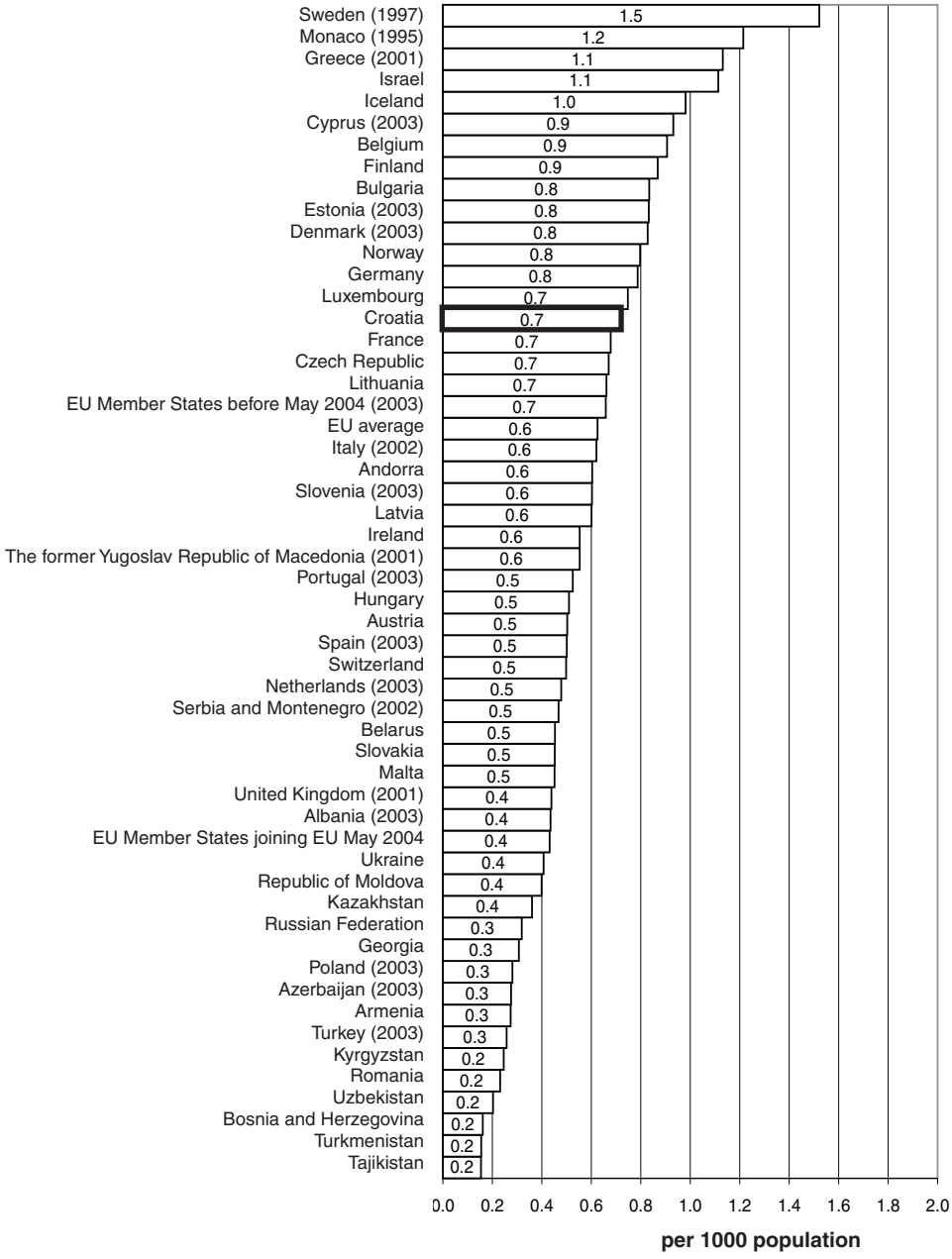
General practice and family medicine are taught during basic undergraduate medical education in Croatia. Since the mid-1990s continuing medical education (CME) activities have been rapidly expanding owing to the compulsory relicensing process. It is essentially based on a collection of CME credit points over a period of six years. In 2000, over 600 GPs participated in different CME courses organized by the European Academy of Teachers in General Practice (EURACT, 2001).

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

4.7 Pharmaceuticals

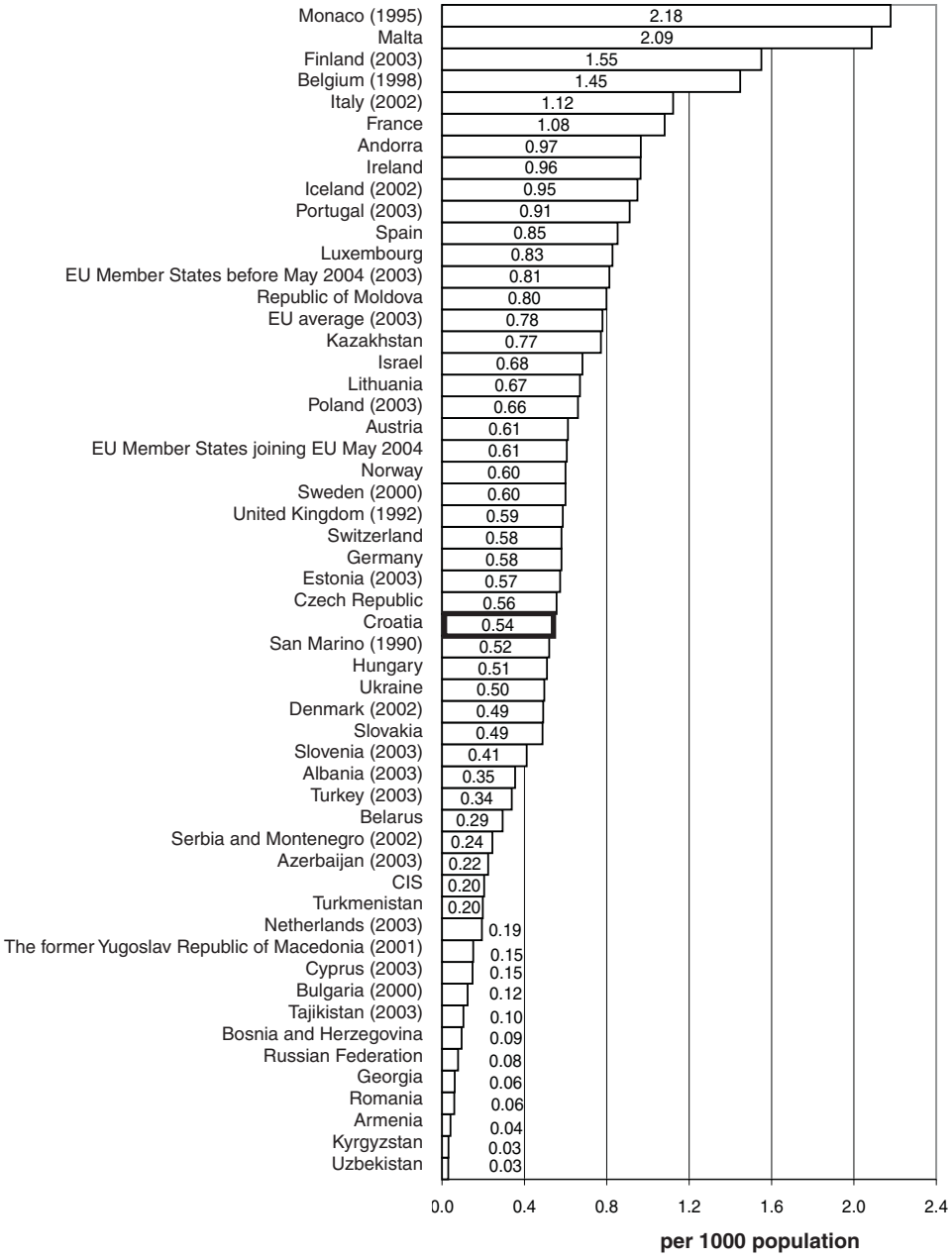
In 2005, the pharmaceuticals market was estimated to be worth £300–350 million (HRK 3.2–3.7 million, US$ 550–650 million) (UK Department of Trade and Investment, 2005). Annual growth has slowed considerably in recent years, from over 20% to approximately 5%.

Fig. 4.7 Dentists per 1000 population, 2004 or latest available year (in parentheses)



Source: WHO Regional Office for Europe, 2006.
Note: CIS: Commonwealth of Independent States.

Fig. 4.8 Pharmacists per 1000 population, 2004 or latest available year (in parentheses)



Source: WHO Regional Office for Europe, 2006.
Note: CIS: Commonwealth of Independent States.

The market is dominated by the Croatian firm "Pliva", one of the largest companies in the country and one of the largest pharmaceutical companies in central and eastern Europe. Although domestic producers Pliva and Belupo make up over 40% of the market, a number of foreign firms are represented, including Krka and Lek from Slovenia, Merck Sharp and Dohme, Pfizer, GlaxoSmithKline, AstraZeneca, etc. The Slovene companies, which constitute approximately 12% of the market, enjoy the advantage of having familiar products for the Croatian consumers, since they were once considered domestic producers (in the former Yugoslavia). Slovene companies are exempt from import duty. Thus, they enjoy a price advantage over other, non-CEFTA (Central European Free Trade Agreement) imported pharmaceuticals, which are subject to a 15% tariff.

There are currently a number of constraints on the market that primarily affect international suppliers. In particular, the HZZO is a purchasing monopoly. The HZZO controls drug prices and has been imposing price cuts. The registration of new drugs on the market takes two to three years. However, the 2003 Drugs Law introduced a new Agency for Drugs and Medical Products and set out a shorter, more ambitious time frame for registration (210 days for ready-prepared drugs). However, this deadline is not yet being met consistently, but the policy had an impact on reducing delays.

Although the 2003 Drugs Law was largely aligned with EU legislation, it lacked provisions for the protection of intellectual property rights. The absence of data exclusivity from previous legislation was advantageous for domestic producers of generic drugs and a matter of concern for international research-based brand name suppliers. In 2004, Croatia introduced provisions for the protection of intellectual property rights similar to those existing in the European Community.

The price differential between brand name imported drugs and generics produced by domestic producers is generally less than 20% (UK Department of Trade and Investment, 2005).

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.

4.7.1 Pricing of pharmaceutical products

The Drug Reference Price System was introduced in 1999 in an attempt to contain pharmaceutical expenditure. The prices of medicines are determined

biannually by comparing wholesale prices from three reference countries (Slovenia, France and the Czech Republic) and two additional countries, when necessary. An initial assessment by the Health Insurance Commission of Australia compared the Croatian wholesale prices of a sample of 45 drugs against the Australian price for a comparable product (Health Insurance Commission of Australia, 2003). The results showed that 36% of medicines were below Australian prices and 64% were above them. While this represents an assessment based on a limited sample, the exercise indicates that there might be opportunities for further cost savings by changing the reference pricing process, including possible changes in the list of reference countries. However, the relatively small size of the Croatian market would present a disadvantage in negotiating prices with the manufacturers.

To curb the volume of prescriptions, the HZZO has imposed annual limits on the number of prescriptions per beneficiary and limited the number of drugs per prescription. Exceptions are permitted for special cases. As indicated in Fig. 4.9, these initiatives have not been effective since the average number has increased from five prescriptions in 1996 to seven prescriptions in 2002. At present, the HZZO reviews prescribing practices but does not include them as part of performance indicators for payments. Overspending by individual GPs is, however, subject to financial punishment of up to 10% of monthly capitation. The punishments are enforced.

As shown in Table 4.2, the HZZO's expenditure on drugs has decreased significantly between 2001 and 2002. This may reflect the effect of increased co-payment rates under the 2002 Health Insurance Law, rather than an effective reduction in the volume of prescriptions. Indeed, over the same period, the average prescription per beneficiary has not declined. The pharmaceutical expenditure data shown in Table 4.2 represent expenditures covered by the HZZO without accounting for private out-of-pocket spending. Thus, the extent to which cost-containment has been achieved by shifting costs directly to the patients requires further investigation.

4.7.2 Reimbursement

Once a drug is registered, its manufacturer may apply to have the drug placed on the positive list for reimbursement coverage by the HZZO. The drug is reviewed by the Positive List Committee, comprising representatives from the HZZO, the HZJZ, clinical pharmacologists and clinicians. They evaluate the application in terms of clinical efficacy and affordability to fix the level of co-insurance. It has been noted that the Positive List Committee lacks staff with a background

Table 4.2 HZZO expenditure on prescription drugs, 1997–2002 in HRK millions (US$ millions)[a]

	1997	1998	1999	2000	2001	2002
Expenditure on prescription drugs	1 345 (171)	1 831 (233)	1 529 (194)	2 238 (285)	2 096 (267)	1 664 (212)
Expenditure on prescription drugs (in constant 1997 prices)	1 345 (171)	1 689 (214)	1 356 (172)	1 864 (237)	1 728 (220)	1 333 (170)
As percentage of total HZZO expenditure on health (%)	16.5	17.9	13.4	16.9	16.5	14.1

Source: Croatian Institute for Health Insurance, 2003

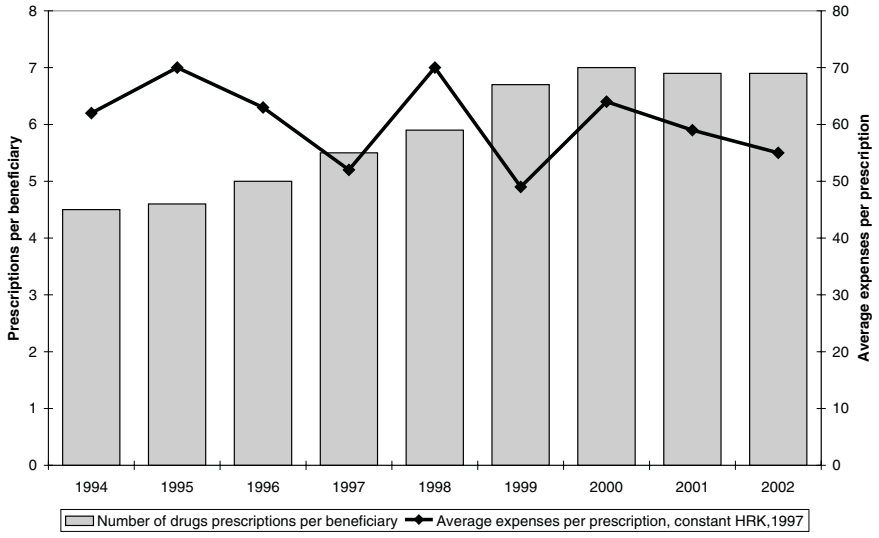
**Note*: [a] all figures converted to US$ on the basis of the average 2002 exchange rate between HRK and US$, as reported by the Croatian National Bank.

in health economics or pharmacoeconomics to assess the economic evaluation presented in the application (Health Insurance Commission, 2003).

4.8 Health technology assessment

The Unit for Professional Supervision in the Ministry of Health regulates the introduction of new diagnostic and therapeutic procedures. However, there is currently no formal system in place for health technology assessment in Croatia. Despite the Government's policies being focused on cost-containment, there has been minimal discussion on statutory health insurance coverage or the public financing of new medical technologies.

Fig. 4.9 Number and average cost of drug prescriptions covered by the HZZO, 1994–2002



Source: World Bank, 2004.

5 Financial resource allocation

5.1 Third-party budget setting and resource allocation

Resources are allocated through the HZZO, the State budget and the county revenue (Fig. 5.1).

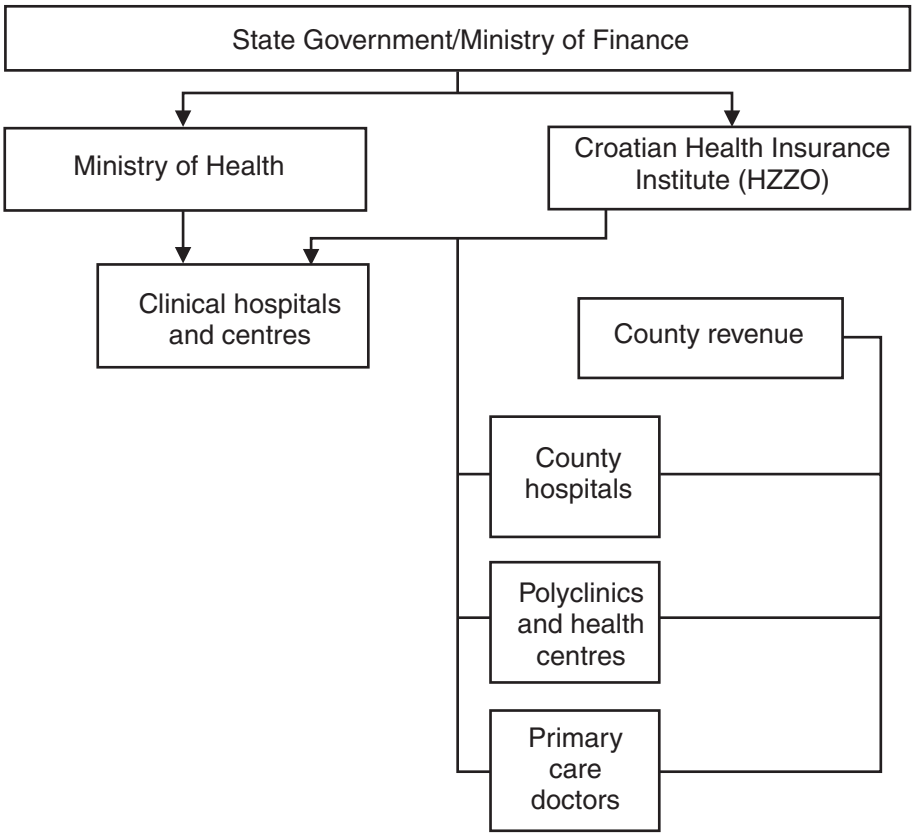
Health insurance contribution rates are negotiated annually between the Ministry of Health, the Ministry of Finance and the HZZO. The Parliament then ratifies these rates. The State takes responsibility for any deficit incurred by the Health Insurance Fund. Since 2001, health insurance contributions have been collected through the State Treasury. If insurance contribution payments are delayed, the HZZO may withdraw health care coverage from an individual.

The Ministry of Health and the Ministry of Finance jointly decide the State's annual budgetary contribution towards health care, which is then ratified by the Parliament. Counties also contribute from their own revenue towards the capital costs of the facilities that they own.

To ensure equality of access to all citizens, HZZO-contracted health care providers operate within the framework of the national health care network. The network determines allocation of public financial resources between counties according to morbidity, mortality, demographic characteristics, etc.

The HZZO distributes resources for services according to agreed contracts with health care providers. These contracts fix the list, quality and scope of services, schedules, requirements for cost accounting and payment subject to the guidelines set out in the Government's national health plan.

Fig. 5.1 Third-party budget setting



The 1993 reforms introduced a capitation payment for the primary care sector, and a point system for the hospital sector. Subsequently, the Ministry of Health introduced global budget caps for hospitals and reference pricing for pharmaceuticals in 1999. Although these measures appear to have had some moderating effect on the rising costs of care, their effectiveness in promoting productivity and assuring quality of care have been limited. For example, the introduction of the global budget cap-and-point system for hospital services (see section 5.2) may be leading to rationing of services through waiting lists for certain high-cost services, such as cardiac surgery and percutaneous transluminal coronary angioplasty. Delays in treatment could have an adverse effect on the patient's health outcome.

5.2 Payment of secondary and tertiary care providers

Croatian hospitals are currently funded according to a two-tiered system. Costs such as investments into infrastructure, medical equipment and information technology are mainly funded by decentralized state funds allocated to counties (owners of general hospitals) that then, subject to Ministry of Health approval, distribute the funds to individual hospitals. Counties and the HZZO also participate to a lesser extent in funding hospital procurement of medical equipment. Medical services are funded separately by the HZZO, according to a combination of a point-based hospital payment system and a diagnosis-related groups (DRGs) system.

The point-based hospital payment system is essentially a fee-for-service reimbursement system. Hospitals are reimbursed on the basis of inputs rather than outcomes. The hospital payment system consists of three separate components: (i) hotel services, paid by a flat per-diem payment; (ii) physician services, paid per procedure using the WHO point system (World Bank, 2004);[10] and (iii) pharmaceuticals and other materials which are paid for separately, depending on the cost of each item. In addition, each hospital is limited by a global budget cap. If a hospital exceeds its annual ceiling, it faces financial penalties.

The system does not allow hospital management to be rewarded for productivity gains. Hospitals are motivated to keep beds full and extend lengths of stay, since high occupancy results in steady funding through per-diem payments and since high costs tend to be accumulated in the initial days of hospital stays. Low occupancy rates also increase the risk that the HZZO will lower the global budget ceiling. The contract arrangement makes it difficult to adjust staffing levels in response to shortened lengths of stay and other efficiency gains, since staffing costs remain fixed. Cost overruns are likely to result in the imposition of arbitrary internal controls, e.g. by restricting the use of medications or procedures, rather than a response to improve productivity, such as reorganization of staffing and other systemic reforms. While global hospital funding contains costs in the broader system, parallel reforms in hospital management and structural realignment of the incentive structure are needed in order to protect access to and ensure appropriate quality of care.

[10] This is a fee-for-service system based on a list of services with a number of points allocated to each service.

In 2002, the Government started introducing a parallel DRG-based payment system. By 2005, the number of services charged by the DRG system included 118 selected diagnoses. Interventions for these cases were either costly, high volume or were delayed because of a long waiting list. Under this system, referred to as Procedures Paid by the Therapy Procedure (PPTP, translation from Croatian, same concept as the DRG system), in order to encourage a more efficient use of resources, the HZZO would negotiate the volume of contracts prospectively with all hospitals for these selected interventions, using case-based reference details. This strategy is intended to reduce the waiting list while improving control over the total costs.

The use of broad-based case groupings, as opposed to more detailed DRGs, as shown in Table 5.1, could lead to cream-skimming. The hospital could attempt to avoid high-risk, high-cost patients by "dumping" them on other providers. As patients are referred to hospitals on a geographical basis, they cannot choose to which hospital they would like to go. However, general hospitals (county hospitals) are allowed to refer cases that are judged to be clinically complicated to clinics/clinical hospital centres that provide state-of-the-art treatment.

The Government intends to eventually move towards a comprehensive prospective case-adjusted payment system based on DRGs. This will represent an important step in rationalizing incentives in the system. However, DRGs can give way to another form of "gaming" known as "code creep" (coding patients

Table 5.1 Comparison of United States DRGs, Australian DRGs and Croatian PPTPs for open-heart surgery

	United States Medicare DRGs[a]	Australian DRGs (Version 4.1)		Croatian PPTPs[b]
106	Coronary bypass with PTCA[c]	F05A	Coronary bypass with invasive cardiac investigative procedure with catastrophic CC[d]	Coronary bypass surgery
107	Coronary bypass with cardiac catheterization	F05B	Coronary bypass with invasive cardiac investigative procedure without catastrophic CC	
108	Other cardiothoracic procedures	F06A	Coronary bypass without invasive cardiac investigative procedure with catastrophic or severe CC	
109	Coronary bypass without cardiac catheterization	F06B	Coronary bypass without invasive cardiac investigative procedure without catastrophic or severe CC	

Source: World Bank, 2004.

Notes: [a] DRGs: diagnosis-related groups; [b] PPTP(s): "procedure(s) paid by the therapy procedure"; [c] PTCA: percutaneous transluminal coronary angioplasty; [d] CC: complicating condition.

as having more serious/complicated conditions that they actually do). If this occurs, then the hospital would be reimbursed more funds than it actually spent on a patient.

To the extent that it is possible, more advanced case-based systems could be implemented to avoid the unnecessary shifting of costs. While it may be necessary to implement simpler coding systems initially, this could be viewed only as an intermediate step until information systems are brought up to par. Moreover, with appropriate training for nursing and medical staff, more advanced coding can be put into place.

A related constraint is the limited scope available to hospital management to respond to the new performance-based payment systems. Hospital management will need to have greater flexibility and autonomy in decision-making in order to achieve the desirable productivity gains. For example, the introduction of performance-based payments will need to be negotiated with trade unions. Their support will be essential for the success of any hospital reorganization initiatives.

The Ministry of Health is currently implementing a restructuring of the county hospital system in order to introduce more day surgeries and other infrastructure improvements. The hospital restructuring is accompanied by a reconfiguration of the county health system to expand the alternative care services that will provide community-based post-acute care and rehabilitation services. These alternative care providers are intended to provide post-acute care in a community setting for the patients discharged from the hospital. A detailed review of these county-level activities could provide valuable information for the national reform process.

5.3 Payment of primary care physicians

The shift to capitation payments and privatization of primary care physicians was intended to give physicians incentives for more efficient and effective care. Findings from a study analysing the effects of the privatization process for primary health care in Croatia indicated that privatized practices performed better in improving access to their services for patients: they increasingly offered the possibility of first and follow-up appointments at precise times, scheduled visits by telephone and provided telephone advice outside working hours (Hebrang et al., 2003). They also showed greater intention to honour appointment times in order to lower their patients' waiting times.

As of 2004, GPs have received additional reimbursement for preventive check-ups (for adults over 45) and for a restricted number of services for which they are allowed to charge (from 2005) according to a DRG (PPTP) schedule. The total funds in addition to the capitation payment may not exceed 7% of annual capitation (12% for GPs working in retirement/nursing homes).

In terms of cost-containment efforts and their role as gatekeepers, primary care physicians could play an influential role in determining the costs of health care. However, analyses of GP referral versus treatment practices are largely lacking. Alongside capitation and privatization, reports from the HZJZ have indicated substantial reductions in numbers of rendered preventive services and home visits as well as large increases in numbers of referrals to secondary and tertiary health care providers (see Box 5.1). The HZZO has attempted to react by limiting the permitted numbers of referrals by patient, but has failed to monitor the trend. The current system does not provide the necessary means for utilization review that would monitor and evaluate the referral patterns of the GPs. Also, see section 4.2 on primary health care.

Box 5.1 Trends in primary care service provision between 1990 and 2003

- Number of GP home visits reduced by 35%
- Other primary care physicians' home visits reduced by 92%
- Number of referrals increased by 25% (between 1995 and 2003)
- Number of GP preventive check-ups reduced by 72% (between 1990 and 2002)

Source: HZJZ, 2004b.

6 Health care reforms

6.1 Health care reform 2002

In 2001, the Ministry of Health produced the *Health Care System Reform*, which was subsequently adopted by the Parliament in July of 2001. The document identified a number of fundamental problems in the Croatian health care system (see Box 6.1).

Health Insurance Law 2002

A centrepiece of the Government's health financing reform is the Health Insurance Law enacted in 2002. The 2002 Law introduced a number of new measurements to limit coverage and increase revenue for the HZZO, including the establishment of a new co-payment schedule for selected services. Higher co-payment rates were put into place for hospital and specialist services, diagnostic tests and prescription drugs. Also, a new voluntary product, "Supplemental Health Insurance" – complementary health insurance in EU terms, was offered to fully cover co-payments for basic services. The Law also brought under the HZZO administration the collection and payment of workers' compensation and occupational health programme, which were previously administered by private insurers.

On the revenue side, the Government's reforms included: (i) a reduction in the wage-related insurance contributions; (ii) the establishment of new health insurance contribution principles for the central and local governments – their responsibilities were extended to include subsidizing the premium and co-payments for special categories of the population such as the unemployed, war veterans and the disabled, and contributions to social health insurance; and (iii) the consolidation of social insurance collection under the State Treasury.

Box 6.1 Problems and reform objectives identified by the Ministry of Health, 2001

Problems

- Financial insolvency of the HZZO.
- Inappropriate planning and management.
- Non-transparent distribution of public and private functions of health professionals – some physicians were legally allowed to work both in public hospitals and in their own private clinics. At present, some physicians can work as private practitioners in public hospitals in the afternoons.
- Uneven concentration of specialist medicine in large cities, especially Zagreb.
- Ineffective use of health care services.
- Unrealistic expectations from the insured and health workers as to the level and span of health care that can be financed by the economy.
- Undeveloped system of control and the need for an enhancement of the quality of care.
- Unequal access to care according to ability to pay and place of residence.
- Lack of maintenance and investment.
- Uneven structure of the costs in the health system, which is characterized by a large proportion of costs directed towards wages rather than treatment.
- Unbalanced employee structures, with too large a share of nonmedical personnel (i.e. administrative staff).
- Informal payments.

Reform objectives

- Financial stabilization
- Cost-containment
- Introduction of planning and management into the administration
- Reorganization of the financing and reimbursement system
- Improvement of efficiency and quality in the provision of services
- Strengthening of preventive services and of primary health care

Source: Ministry of Health, 2001.

Collectively, these reforms were intended to alleviate the tax burden for the insured and to reduce distortions found in the labour market. The forgone revenue from payroll tax was to be replaced through other revenue sources including co-payments, complementary health insurance and government transfers. Finally, the reforms aimed to improve the financial and debt management of the HZZO funds.

Central government transfers had been made retroactively to cover the shortfalls in the HZZO budget or to cover deficits accumulated by health care providers. In 2002, actual government transfers to the HZZO showed a significant decrease over the previous year, with debt financing still being used to cover the shortfall in budget. This outcome suggests that the cost of financing the subsidies has not yet been fully evaluated or included in the budget plan.

The parameters for determining subsidy levels will need to be defined for transparency and planning purposes.

6.1.1 Primary care

With regard to primary health care, the 2002 reform aimed to introduce utilization and quality reviews and a performance-based payment system that would encourage quality of care while discouraging unnecessary prescriptions and referrals by GPs. Furthermore, the reform aimed to reintroduce group practice and family medicine teams as the principal mode of delivery, and develop contracts with the HZZO to reinforce the mentioned trends. Finally, the reform was intended to support the development of clinical information systems and management tools that would enable utilization and quality reviews with minimal administrative burden.

6.1.2 Hospital care

Reforms in the hospital sector have been primarily driven by the inefficiency of the existing delivery systems, rising costs and consumer dissatisfaction with the quality of care (Oreskovic, 2001). Neither the public nor the policy-makers have been happy with recent factory-like hospital designs. The design of a hospital must reflect its many different roles, such as teaching and research, as well as direct patient care. An important issue has been how to decide upon the optimal size and distribution of the hospital system. The hospital system in Croatia was built for a different environment (the former Yugoslavia), a different organizational system (self-managed socialism) and a larger population. In addition, changing patterns of disease, rising public expectations and new technology mean that policy-makers face a variety of pressures in restructuring the hospital system.

The district of Koprivnica has been selected to pilot some health care reforms. The project covers the district referral hospital located in the city as well as primary care facilities and personnel throughout the county. Reform activities are grouped into three major areas: (i) service delivery, (ii) purchasing, and (iii) information technology. Accordingly, the project seeks to strengthen the links between the hospital and the community by providing more home-based support services, by improving the discharge process and by involving GPs in the post-hospital management of their patients. More specifically, strategies revolve around:

- making recommendations on improving the hospital discharge planning system;

- identifying patients who could be discharged earlier under the management of qualified practitioners;
- identifying the most appropriate model to meet service objectives;
- identifying the required resources (staff, training, vehicles and equipment);
- identifying the number of patients occupying acute hospital beds that would be better suited to nursing home care;
- analysing referrals and admissions to nursing home beds.

In order to improve the quality of health services and thus increase patient and citizen satisfaction, the Ministry of Health has undertaken a state-wide survey of patient opinions on their hospital experiences (Marusic, 2001). Among other things, the survey enquires about admission; communication with staff; help from staff; staff sensitivity; patient degree of satisfaction with the hospital; what they liked or disliked; what improvements they could suggest; and who they think can best assure protection of their rights. The analysis of this survey helps to identify strengths and weakness of each hospital and its specific departments. This can then form the basis for long-term policy aimed at improving hospital care.

The implementation, and thus the effects, of the 2002 reform have been interrupted by the outcome of the 2003 general elections – the change of government. Thus, the future of the reforms started in 2002 remains to be seen. The new Government, elected in 2003, has – until end of 2005 – primarily kept its focus on controlling hospital and pharmaceutical expenditure and broadening the revenue base of the system by introducing administrative charges, as has been previously discussed. Other initiatives highlighted since 2003 include boosting preventive check-ups in primary care, expanding transplantation surgery programmes and stimulating kindness of medical professionals towards patients.

6.2 2006 National strategy for the development of the health care system

In 2006, the Croatian Parliament began a debate on several issues including: the National Health Strategy for the period 2006–2011, the Bill on Compulsory (Social) Health Insurance, the Bill on Voluntary Health Insurance, Amendments to the Health Care Act, and the Bill on Health Insurance Covering Work Safety.

In February 2006, the Croatian Ministry of Health published a comprehensive document entitled "Strategy of the development of the Croatian health care system 2006–2011". The document specifies the political foundations on which future reforms are to be based. The basic concepts that are to provide a framework for future health care planning are:

- accessibility (geographical, timely care and economic accessibility)
- equity and equality of citizens
- effectiveness
- quality of medical care
- patient and health professionals' safety
- solidarity.

In order to achieve these objectives, according to the Ministry of Health, comprehensive reforms will be necessary in the health care system, its system of financing and in the public health system. Furthermore, the document specifies certain preconditions that have to be met so that future reforms can achieve their targets. These include:

- full informatization of the health care system
- partnership between health professionals and users
- transparency in the provision of health care services
- decentralization of decision-making and responsibilities
- paying attention to costs of medical care
- unity and collaboration between segments of the health care system
- Europeanization of the Croatian health care system – in light of preparations for accession to the EU.

The conceptual framework of the Strategy specifies future goals and targets according to the levels of health care provision – primary, secondary and tertiary. However, the document accentuates the importance of integrated medical care and of full cooperation between different levels of health care provision. The main principles on which health care reforms will be based are:

- centralized policy-making, standards, norms, planning and monitoring;
- integrated health care provision;
- decentralized management (devolution of responsibilities);
- primary health care as the foundation of integrated health care, planned to deal with up to 80% of all medical cases;
- setting up a national agency in charge of monitoring quality of care and quality of medical education as well as accreditation of foreign professionals to practise medicine in Croatia;

- informatization as a precondition of monitoring quality and cost of care;
- securing and rationalizing consumption of resources according to the criteria of equality, solidarity, accessibility, rationality, quality and special needs;
- improvements in hiring and paying conditions based on flexibility, entrepreneurship, success and elimination of unnecessary bureaucracy;
- more patient choice with a view to greater satisfaction with the system.

6.2.1 Primary care

In primary care, reforms will aim to reduce the number of patients per GP (for example from 1700 to 1500 per GP) in order to improve the quantity and quality of services provided. Particular attention will be paid to education, both undergraduate/graduate and continuous education of doctors practising in primary care. Reforms will aim to ensure access to new technologies, particularly telemedicine. Primary care doctors will be stimulated to engage in health promotion activities and to collaborate closely with specialists both before and after specialist care. They will also be stimulated to provide home care.

The reforms will encourage the development of the group practice model and will reform payment mechanisms according to the fundholding model, as a first step for prescribed drugs, and later for services provided by specialists.

In addition, the organization and status of health centres, provision of public health services in primary care, composition of primary care teams, and their collaboration with providers of social care, patient groups, etc., will be analysed and (re)defined.

Primary care will be developed according to the family medicine model. Additionally, the Ministry of Health intends to start a network of mental health centres, with the aim of improving social integration of people suffering from mental illness.

6.2.2 Secondary care

In order to improve governance and resource allocation, a national database will be formed containing relevant information (employees, services provided, infrastructure, etc.) and categorizing all hospitals in Croatia. All hospitals will have to undergo accreditation to determine whether they adhere to a set of standards and norms.

Owing to escalating health care costs, the reforms will aim to reduce the current number of hospitals and hospital beds. Furthermore, reforms will aim to rationalize acute hospital care provision and develop alternative, more rational

models of service provision such as outpatient care and day hospitals. With regard to long-term care, institutions providing cost-conscious long-term care such as nursing homes will be favoured and developed. The reforms will also aim to coordinate secondary care institutions between neighbouring regions, to avoid duplication of unnecessary costs for equipment and personnel.

6.2.3 Tertiary care

In tertiary care, reforms will be aimed at achieving the highest possible level of quality of care provided in all institutions. The vital role of tertiary medical institutions in medical education will be further pursued. Furthermore, their role in the hospital system requires redefining as they currently provide 49% of all outpatient consultations. This is considered to be inappropriate, as a proportion of these consultations could be handled in institutions providing secondary or primary care. Finally, development of tertiary care institutions will be particularly encouraged outside of the capital, to ensure accessibility of high-quality tertiary care in all parts of the country.

6.2.4 Prescribed drugs

Informatization of drug prescribing is intended to facilitate monitoring and control, in order to achieve effective and economically rational prescribing practices. This approach could also facilitate the creation of sound national prescribing policies. Furthermore, with the same goal in mind, issues pertaining to prescribing will be made more prominent in continuous medical education through seminars and courses.

A basic list of drugs covered by social health insurance will be set up, while other drugs will be made available at a cost to the patient. The new strategy will encourage the prescribing of generics and will introduce reference pricing. Cost sharing will be used to encourage patients to consider drug prices when choosing a therapy.

6.2.5 Emergency medicine

Reforms will be aimed at creating integrated emergency medicine systems at county level. The system of emergency medicine provision will be tailored to meet local needs and ensure high quality of care nationally. Emergency medicine services will be better coordinated with hospitals to ensure quality and timeliness of services provided.

6.2.6 Health care financing

In health care financing, reforms will be targeted at reducing the public proportion and enlarging the private proportion of health care expenditure. Complementary and supplementary health insurance and out-of-pocket payments will be regulated and further developed. A negative list of services not covered under social health insurance will be defined. Primary care providers will earn a greater proportion of their wages through case-adjusted and fee-for-service payment mechanisms.

Hospitals will be categorized and accredited for specific procedures. This is intended to enhance their efficiency and the quality of services provided. The development of national guidelines and algorithms for therapeutic procedures is also expected to work towards this goal. Current hospital payment mechanisms will be substituted by *diagnosticko terapijske skupine,* a local version of the DRG payment system. The procurement of diagnostic devices will be rationalized according to clinical guidelines and the results of accreditation and categorization of hospitals. As part of the informatization of the health care system, smart cards with all medical and financial details regarding the patient and treatment providers will be introduced. Finally, the new Strategy plans to accentuate the importance of health technology assessment and evidence-based decision-making in Croatian medicine.

7 Conclusions

The challenge for Croatia is to make better use of the significant resources allocated to the health sector. Recent reforms appear to have succeeded in containing expenditure. However, demographic and epidemiological transition points to a potential for an increasing demand for health care. The pressure on public resources to spend more on health may intensify in the coming years, and will have to be met with prudent allocation of resources and continuous efforts to improve productivity wherever possible.

The Government has taken steps towards tackling a broad range of policy reforms to improve the performance of the health system. Still, there remain important actions that need to be prioritized and implemented in order to ensure the policy and reform goals are actively achieved. The following target areas are of particular importance.

- *Improving budget planning and fund management:* While it appears that some success in containing public spending on health has been achieved, the trend may not be fully capturing the effect of cost shifting to the providers and users of health care. The fact that the Government continues retrospectively to finance arrears accumulated by the health care providers is a source of concern. The Government will need to ensure that such retrospective financing does not undermine the ongoing efforts to improve efficiency through HZZO payment reforms. Good accounting practice could be established at all levels to enable the Government to track spending accurately. Furthermore, the cost of financing subsidies through general revenues could be fully evaluated and included in the budget plan.
- *User charges and informal payments:* Co-payments could be redesigned to discourage unnecessary use of health care, but not to be a barrier to accessing appropriate care. Along these lines, the impact of informal payments on

patient access to services needs to be included in the surveys and evaluation procedures.

- *Improving quality and efficiency of health services:* The HZZO's capacity as a purchaser of health care services will need to be strengthened by building on the ongoing reforms in the provider payment system, including the design of contracts, introduction of appropriate quality and utilization review processes and an audit system, and investment in the upgrading of information systems for both the HZZO and the health care providers. Parallel reforms in the management and organization of the health care providers will be needed in order to ensure that they are better able to respond to performance-based contracts. Investments in new technologies or decisions to include certain procedures under the coverage of the HZZO need to be based on the best available evidence of safety appropriateness (evidence-based medicine) and cost–effectiveness
- *Decentralization and local government capacity building:* Local governments will require significant capacity building in order to take up their new responsibilities under a decentralized health system.
- *Strengthening policy, planning, monitoring and evaluation:* Health care reform is a continuous process that requires ongoing monitoring and adjustments based on regular evaluation of the policy effectiveness. Greater resources could be directed towards strengthening the monitoring and capacity, including regular household and facility surveys and measuring patients' satisfaction with health services.

8 Appendix

8.1 References

Babic-Banaszak A et al. (2002). Impact of war on health-related quality of life in Croatia: population study. *Croatian Medical Journal*, 43(4):396–402.

Cafuk B (2006). Goals for the improvement of the healthcare system in the next 5 years. *Journal of the Croatian Chamber of Physicians,* 47.

Central Bureau of Statistics (2003). *Statistical yearbook 2003*, Republic of Croatia. Zagreb, Central Bureau of Statistics (http://www.dzs.hr/ default_e.htm, accessed 24 May 2006).

Central Bureau of Statistics (2004). *Statistical yearbook 2004,* Republic of Croatia. Zagreb, Central Bureau of Statistics (http://www.dzs.hr/ default_e.htm, accessed 24 May 2006).

Central Bureau of Statistics (2005). *Statistical information 2005*, Republic of Croatia. Zagreb, Central Bureau of Statistics (http://www.dzs.hr/ default_e.htm, accessed 24 May 2006).

CERANEO (1999). *Basic information about the non-profit (nongovernmental) sector in Croatia.* Zagreb, Centre for Development of Non-Profit Organisations (http://www.greekhelsinki.gr/english/reports/ceraneo-ngos_in_croatia.html, accessed November 2005).

CIA (2005). *The World Fact Book 2005: Croatia* [web site]. Washington, DC, Central Intelligence Agency (https://www.cia.gov/cia/publications/factbook/ index.html, accessed May 2006).

Croatian National Bank (2006). *Economic indicators 2005* [in Croatian]. Zagreb, Croatian National Bank (http://www.hnb.hr/statistika/hstatistika.htm, accessed May 2006).

Dzakula A et al. (2005). Decentralization and health care reform in Croatia 1980–2002. In: Shakarishvili E (ed.) *Decentralization in health care – Analyses and experiences in central and eastern Europe in the 1990s.* Budapest, Local Government and Public Service Reform Initiative, Open Society Institute.

EURACT (2001). *Annex 1: Review of national educational activities after EURACT Council meeting in Kusadasi.* Leuven, European Academy of Teachers in General Practice.

Government of the Republic of Croatia (1999). *War damage in the Republic of Croatia*. Zagreb, Government of the Republic of Croatia (Croatian Government Bulletin; http://www.vlada.hr/bulletin/1999/sep-oct/documents.html, accessed 12 January 2006).

Government of the Republic of Croatia (2006) [web site]. Zagreb, Government of the Republic of Croatia (http://www.vlada.hr/default.asp?ru=2, accessed 12 January 2006).

Health Insurance Commission of Australia (2003) [web site]. (http://www.hic.gov.au/, accessed 12 January 2006; at time of printing, web site http://www.medicareaustralia.gov.au/).

Hebrang A et al. (2003). Privatization in the health care system of Croatia: effects on general practice accessibility. *Health Policy and Planning*, 18(4): 421–428.

Hebrang A. (1994) Reorganization of the Croatian health care system. *Croatian Medical Journal,* 35: 130–136.

HZJZ (2004a). *HIV info 2004.* Zagreb, Croatian National Institute of Public Health (http://www.hzjz.hr/epidemiologija/hiv.htm, accessed 3 December 2005).

HZJZ (2004b). *Health services yearbook 2003*. Zagreb, Croatian National Institute of Public Health.

HZJZ (2005). *Health services yearbook 2004*. Zagreb, Croatian National Institute of Public Health.

HZJZ (2006a). *Communicable disease surveillance in Croatia.* Zagreb, Croatian National Institute of Public Health (www.hzjz.hr, accessed 24 May 2006).

HZJZ (2006b). Croatian National Institute of Public Health online [web site]. Zagreb, Croatian National Institute of Public Health (www.hzjz.hr, accessed 24 May 2006).

HZZO (2004). *Financial report 2003* [in Croatian]. Zagreb, Croatian Institute for Health Insurance (http://www.hzzo-net.hr/publikacije/financijsko_izvjesce_2003.pdf, accessed 3 December 2005).

HZZO (2006). *Health services yearbook 2005.* Zagreb, Croatian National Institute of Public Health.

Katic M, Juresa V, Oreskovic S (2004). Family medicine in Croatia: past, present and forthcoming challenges. *Croatian Medical Journal*, 45(5):543–549.

Kozumplik O, Jukic V, Goreta M (2003). Involuntary hospitalizations of patients with mental disorders in Vrapce Psychiatric Hospital: five years of implementation of the first Croatian law on protection of persons with mental disorders. *Croatian Medical Journal,* 44(5):601–605.

Langenbrunner JC (2002). Supplemental health insurance: did Croatia miss an opportunity? *Croatian Medical Journal*, 43(4):403–407.

Letica S (1989). *Zdravstvena politika u doba krize [Health politics in times of crisis]*. Zagreb, Naprijed.

Marusic A (2001). Croatia starts to involve patients in medical decision-making. *Lancet*, 257(9272):1958.

Mastilica M, Babic-Bosanac S (2002). Citizens' views on health insurance in Croatia. *Croatian Medical Journal,* 43(4):417–424.

Mastilica M, Bozikov J (1999). Out-of-pocket payments for health care in Croatia: implications for equity. *Croatian Medical Journal*, 40(2):152–159.

Mastilica M, Kusec S (2005). Croatian health care system in transition, from the perspective of users. *British Medical Journal,* 331(7510):223–226.

Ministry of Health (1999). *National environment and health action plan*. Zagreb, Ministry of Health and Social Care.

Ministry of Health (2001). *Health care reform: strategy and plan for the reform of the system and health insurance of the Republic of Croatia*. Zagreb, Ministry of Health and Social Care.

Ministry of Health (2004). *Programski zajam za prilagodbu [Programmatic Adjustment Loan Report]*. Zagreb, Ministry of Health and Social Care.

Ministry of Health (2006). *National strategy for the development of health care from 2006–2011*. Zagreb, Ministry of Health and Social Care.

OECD (2001). OECD health data 2001: a comparative analysis of 30 OECD countries [online database]. Paris, Organisation for Economic Co-operation and Development (http://www.oecd.org/, accessed 23 March 2004).

Oreskovic S (2001). Reforming hospitals in Croatia: asking the patients. *Eurohealth*, 7(3):36–39.

Preker AS, Jakab M, Schneider M (2002). Health financing reforms in central and eastern Europe and the former Soviet Union. In: Mossialos E et al. (eds). *Funding health care: options for Europe.* Buckingham, Open University Press.

Social Security Online (2005). *Social security programmes throughout the world: Europe; Croatia.* Baltimore, Social Security Administration (http://www.ssa.gov/policy/docs/progdesc/ssptw/2004-2005/europe/index.html, accessed 3 December 2005).

Stevenson D, Stubbs P (2003). *Croatia: health briefing paper.* London: Department for International Development, Health Systems Resource Centre.

United Kingdom Department of Trade and Investment (2005). *Market summary Croatia – biotechnology.* London, United Kingdom Department of Trade and Industry (http://www.dti.gov.uk/, accessed 24 May 2005).

UNICEF (1991). *The baby-friendly hospital initiative.* New York, United Nations Children's Fund (http://www.unicef.org/programme/breastfeeding/baby.htm, accessed 12 March 2004).

United Nations (2006). *World population prospects: the 2006 revision.* New York, United Nations Department of Economic and Social Affairs (http://esa.un.org/unpp, accessed 24 May 2006).

United Nations Cartographic Section (2006) [web site]. New York, NY, United Nations Cartographic Section (http://www.un.org/Depts/Cartographic/english/htmain.htm, accessed 24 May 2006).

US Census Bureau (2006). International data base population pyramids. Washington, DC, US Census Bureau (http://www.census.gov/ipc/www/idbnew.html, accessed 24 May 2006).

WHO Regional Office for Europe (2000). *Highlights on health in Croatia.* Copenhagen, WHO Regional Office for Europe.

WHO Regional Office for Europe (2003). *Surveillance programme for the control of food-borne infections and intoxications in Europe: 8th report. Country report – Croatia, 1999–2000.* Copenhagen, WHO Regional Office for Europe (http://www.bfr.bund.de/internet/8threport/CRs/cro.pdf, accessed 12 March 2004).

WHO Regional Office for Europe (2006). European Health for All database (HFA-DB) [online database]. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/hfadb, accessed 24 May 2006).

World Bank (2000). *Croatia: economic vulnerability and welfare study.* Washington, DC, World Bank (http://poverty2.forumone.com/library/view/12543/, accessed 12 March 2004).

World Bank (2001). *Croatia: Country brief.* Washington, DC, World Bank (http://web.worldbank.org/wbsite/external/countries/ecaext/Croatiaextn/0,,menuPK:301254~pagePK:141132~piPK:141107~theSitePK:301245,00.html, accessed 24 May 2006).

World Bank (2003). *Croatia at a glance.* Washington, DC, World Bank.

World Bank (2004). *Croatia health finance study.* Washington, DC, Human Development Sector Unit Europe and Central Asia Region. Report No. 27151-HR. April 25, 2004 (http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/06/16/000012009_20040616103200/Rendered/PDF/271510HR.pdf, accessed 24 May 2006).

World Bank (2005). *Croatia data and statistics, 2005.* Washington, DC, World Bank (www.worldbank.hr, accessed 24 May 2006).

8.2 Useful web sites

Andrija Stampar School of Public Health – www.snz.hr

Central Bureau of Statistics – www.dzs.hr

Croatian Institute for Health Insurance, HZZO – www.hzzo-net.hr

Croatian Medical Journal – www.cmj.hr

Croatian National Institute of Public Health – www.hzjz.hr

Ministry of Health and Social Welfare – www.mzss.hr

8.3 HiT methodology and production process

The Health Systems in Transition (HiT) profiles are produced by country experts in collaboration with the Observatory's research directors and staff. The profiles are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources, and examples needed to compile HiTs. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The most recent template is available online at: http://www.euro.who.int/observatory/Hits/20020525_1.

Authors draw on multiple data sources for the compilation of HiT profiles, ranging from national statistics, national and regional policy documents, and published literature. Furthermore, international data sources may be incorporated, such as those of the Organisation for Economic Co-operation and Development (OECD) and the World Bank. OECD Health Data contain over 1200 indicators for the 30 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for All (HFA) database. The HFA database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health for All policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments, as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard HFA data have been officially approved by national governments. With its summer 2004 edition, the HFA database started to take account of the enlarged European Union (EU) of 25 Member States.

HiT authors are encouraged to discuss the data in the text in detail, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT profile consists of 10 chapters:

1. Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. Organizational structure: provides an overview of how the health system in a country is organized and outlines the main actors and their decision-making powers; discusses the historical background for the system; and

describes the level of patient empowerment in the areas of information, rights, choice, complaints procedures, safety and involvement.

3. Financing: provides information on the level of expenditure, who is covered, what benefits are covered, the sources of health care finance, how resources are pooled and allocated, the main areas of expenditure, and how providers are paid.
4. Regulation and planning: addresses the process of policy development, establishing goals and priorities; deals with questions about relationships between institutional actors, with specific emphasis on their role in regulation and what aspects are subject to regulation; and describes the process of health technology assessment and research and development.
5. Physical and human resources: deals with the planning and distribution of infrastructure and capital stock; the context in which information technology (IT) systems operate; and human resource input into the health system, including information on registration, training, trends and career paths.
6. Provision of services: concentrates on patient flows, organization and delivery of services, addressing public health, primary and secondary health care, emergency and day care, rehabilitation, pharmaceutical care, long-term care, services for informal carers, palliative care, mental health care, dental care, complementary and alternative medicine, and health care for specific populations.
7. Principal health care reforms: reviews reforms, policies and organizational changes that have had a substantial impact on health care.
8. Assessment of the health system: provides an assessment based on the stated objectives of the health system, the distribution of costs and benefits across the population, efficiency of resource allocation, technical efficiency in health care production, quality of care, and contribution of health care to health improvement.
9. Conclusions: highlights the lessons learned from health system changes; summarizes remaining challenges and future prospects.
10. Appendices: includes references, useful web sites, legislation.

Producing a HiT is a complex process. It involves:

- writing and editing the report, often in multiple iterations;
- external review by (inter)national experts and the country's Ministry of Health – the authors are supposed to consider comments provided by the Ministry of Health, but not necessarily include them in the final version;
- external review by the editors and an international multidisciplinary editorial board;
- finalizing the profile, including the stages of copy-editing and typesetting;
- dissemination (hard copies, electronic publication, translations and launches).

The editor supports the authors throughout the production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

The Health Systems in Transition profiles

A series of the European Observatory on Health Systems and Policies

The Health Systems in Transition (HiT) country profiles provide an analytical description of each health care system and of reform initiatives in progress or under development. They aim to provide relevant comparative information to support policy-makers and analysts in the development of health systems and reforms in the countries of the European Region 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;
- to describe accurately the process, content and implementation of health care reform programmes;
- to highlight common challenges and areas that require more in-depth analysis; and
- to 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 countries of the WHO European Region.

How to obtain a HiT

All HiT profiles are available in PDF format on ***www.euro.who.int/observatory***, where you can also join our listserve for monthly updates of the activities of the European Observatory on Health Systems and Policies, including new HiTs, books in our co-published series with Open University Press, policy briefs, the ***EuroObserver*** newsletter and the ***Eurohealth*** journal. If you would like to order a paper copy of a HiT, please write to:

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[e] German
[f] Romanian
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[j] Estonian

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HiTs are in-depth profiles of health systems and policies, produced using a standardized approach that allows comparison across countries. They provide facts, figures and analysis and highlight reform initiatives in progress.

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