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Croatia

Health system review

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Anna Sagan (Editor), Sarah Thomson and Ewout van Ginneken were responsible for this HiT

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Health Systems in Transition

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Croatia:

Health System Review 2014

The European Observatory on Health Systems and Policies is a partnership between the WHO Regional Office for Europe, the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Sweden, the United Kingdom and the Veneto Region of Italy, the European Commission, the World Bank, UNCAM (French National Union of Health Insurance Funds), the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

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Preface

The Health Systems in Transition (HiT) series consists of country-based reviews 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 review is produced by country experts in collaboration with the Observatory's staff. In order to facilitate comparisons between countries, reviews are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a report.

HiTs 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;
- describe the institutional framework, process, content and implementation of health care reform programmes;
- highlight challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries; and
- assist other researchers in more in-depth comparative health policy analysis.

Compiling the reviews 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's European Health for All database, data from national statistical offices, Eurostat, the Organisation for Economic Co-operation and Development (OECD) Health Data, data from the International Monetary Fund (IMF), the World Bank's World Development Indicators and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate review.

A standardized review 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. HiTs can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situations. 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.

HiTs and HiT summaries are available on the Observatory's web site (http://www.healthobservatory.eu).

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The HSPM is an international network that works with the Observatory on Country Monitoring. It is made up of national counterparts that are highly regarded at national and international level and have particular strengths in the area of health systems, health services, public health and health management research. They draw on their own extensive networks in the health field and their track record of successful collaboration with the Observatory to develop and update the HiT.

The Andrija Štampar School of Public Health is one of the oldest schools of public health in Europe, founded in 1927 by the efforts of Andrija Štampar who later contributed to the establishment of the World Health Organization. After the Second World War, the School became a constitutive institution of the Medical School, University of Zagreb. The School offers training in public health disciplines at the graduate, postgraduate and continuing medical education levels. It is an organizer and partner in many community programmes and health campaigns and a highly respected national research institution in Croatia.

This edition was written by Aleksandar Džakula of the Andrija Štampar School of Public Health, Anna Sagan of the European Observatory on Health Systems, Nika Pavić of the Croatian Health Insurance Fund, Karmen Lončarek of the University Hospital of Rijeka and Katarina Sekelj-Kauzlarić of the Croatian Medical Chamber. Research assistance was provided by two postgraduate students at Andija Štampar School of Public Health, Leta Pilić and Adis Keranović. It was edited by Anna Sagan, working with the support of

Sarah Thomson of the Observatory's team at the London School of Economics and Political Science and Ewout van Ginneken of the Observatory's team at the Department of Health Care Management, Berlin University of Technology. The basis for this edition was the previous HiT on Croatia, which was published in 2006, written by Luka Vončina, Nadia Jemiai, Sherry Merkur, Christina Golna, Akiko Maeda, Shiyan Chao and Aleksandar Džakula and edited by Sherry Merkur, Nadia Jemiai and Elias Mossialos.

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Thanks are also extended to the WHO Regional Office for Europe for their European Health for All database from which data on health services were extracted; to the OECD for the data on health services in western Europe; and to the World Bank for the data on health expenditure in central and eastern European countries, and the European Commission for the Eurostat database. Thanks are also due to national statistical offices – the Croatian Bureau of Statistics, the Croatian National Institute of Public Health and the Croatian Health Insurance Fund – that have provided data. The HiT reflects data available in 31 December 2013, unless otherwise indicated.

The European Observatory on Health Systems and Policies is a partnership, hosted by the WHO Regional Office for Europe, which includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Sweden and the Veneto Region of Italy, the European Commission, the World Bank, UNCAM (French National Union of Health Insurance Funds), the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine. The Observatory team working on HiTs is led by Josep Figueras, Director, Elias Mossialos, Martin McKee, Reinhard Busse, Richard Saltman, Sarah Thomson and Suszy Lessof. The Country Monitoring Programme of the Observatory and the HiT series are coordinated by Gabriele Pastorino. The

production and copy-editing process of this HiT was coordinated by Jonathan North, with the support of Caroline White, Alison Chapman (copy-editing) and Steve Still (design and layout).

List of abbreviations

Abbreviations	English	*Croatian*
ADR	adverse drug reaction	
AIDS	acquired immunodeficiency syndrome	
ALOS	average length of stay	
AR-DRG	Australian Refined-DRG	
ATC	Anatomical Therapeutic Chemical	
BMI	body mass index	
C	capitation	
CAA	Croatian Accreditation Agency	*Hrvatska akreditacijska agencija*
CAHS	Croatian Adult Health Study	*Hrvatska zdravstvena anketa*
CAM	complementary and alternative medicine	
CARK	Central Asian Republics and Kazakhstan (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan)	
CEZIH	Central Health Information System of the Republic of Croatia	*Centralni zdravstveni informacijski sustav Republike Hrvatske*
CHI	complementary health insurance	
CHIF	Croatian Health Insurance Fund	
CIHI	Croatian Institute for Health Insurance	*Hrvatski zavod za zdravstveno osiguranje*
CIS	Commonwealth of Independent States	
CME	continuing medical education	*Trajno medicinsko usavršavanje*
CNIPH	Croatian National Institute of Public Health	*Hrvatski zavod za javno zdravstvo*
CroHort	Croatian Adult Cohort Study	*Hrvatska zdravstvena anketa*
CT	computer tomography	
DDD	defined daily dose	
DFMT	decayed, filled and missing teeth	
DRG	diagnosis-related group	*Dijagnostičko terapijske skupine*
DTS	diagnosis-related group	*Dijagnostičko terapijske skupine*
EEA	European Economic Area	
EMS	emergency medical services	
EPI	Expanded Programme on Immunization	

Abbreviations	English	*Croatian*
epSOS	European Patient Smart Open Service	
EQLS	European Quality of Life Survey	
EU	European Union	
EU12	EU members since May 2004 but before July 2013	
EU15	EU members before May 2004	
EU27	EU members before July 2013	
EU28	EU members as of 1 July 2013	
EUCERD	European Union Committee of Experts on Rare Diseases	
EU-SILC	EU Survey of Health and Living Conditions	
FFS	fee for service	
GDP	gross domestic product	
GMP	good manufacturing practice	
GP	general practitioner	
HALMED	Agency for Medicinal Products and Devices	*Agencija za lijekove i medicinske proizvode*
HANFA	Croatian Financial Services Supervisory Authority	
HBSC	Health Behaviour in School-aged Children	
HDZ	Croatian Democratic Union	*Hrvatska demokratska zajednica*
HNS	Croatian People's Party	*Hrvatska narodna stranka*
HPV	human papilloma virus	
HSU	Croatian Party of Pensioners	*Hrvatska stranka umirovljenika*
HTA	health technology assessment	
HUPED	Croatian Federation for Natural, Energy and Spiritual Medicine	
ICT	information and communication technology	
IDS	Istrian Democratic Assembly	*Istarski demokratski sabor*
IMF	International Monetary Fund	
IP	intellectual property	
IPA	Instruments for Pre-Accession	
ISPOR	International Society For Pharmacoeconomics and Outcomes Research	
IT	information technology	
KoHOM	Coordination of Croatian Family Medicine	
KPI	key performance indicator	
LTC	long-term care	
MHI	mandatory health insurance	
MRI	magnetic resonance imaging	
MRSA	methicillin-resistant *Staphylococcus aureus*	
NATO	North Atlantic Treaty Organization	

Abbreviations	English	*Croatian*
nCADREAC	New Collaboration Agreement between Drug Regulatory Authorities in Central and Eastern European Countries	
NGO	non-governmental organization	
NHP	National Health Plan	
NICE	National Institute for Health and Clinical Excellence	
OECD	Organisation for Economic Co-operation and Development	
OTC	over-the-counter	
P4P	pay for performance	
PATH	Performance Assessment Tool for Quality Improvement in Hospitals	
PD	per diem	
PET	positron emission technology	
PfP	Partnership for Peace	
PPP	purchasing power parity or private–public partnership	
PPS	purchasing power standard	
PPTP	payment per therapeutic procedure	
PRM	physical and rehabilitation medicine	
PROM	patient-reported outcome measure	
PSUR	periodic safety update report	
QI	quality indicator	
RMP	risk minimization plan	
S	salary	
SPC	supplementary protection certificate	
SPH	Social Democratic Party of Croatia	*Socijaldemokratska partija Hrvatske*
THE	total health expenditure	
TRIPS	Trade Related Aspects of Intellectual Property Rights	
UNODC	United Nations Office on Drugs and Crime	
VAT	value added tax	
VHI	voluntary health insurance	
WHO	World Health Organization	
WTO	World Trade Organization	

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Abstract

Croatia is a small central European country on the Balkan peninsula, with a population of approximately 4.3 million and a gross domestic product (GDP) of 62% of the European Union (EU) average (expressed in purchasing power parity; PPP) in 2012. On 1 July 2013, Croatia became the 28th Member State of the EU.

Life expectancy at birth has been increasing steadily in Croatia (with a small decline in the years following the 1991–1995 War of Independence) but is still lower than the EU average. Prevalence of overweight and obesity in the population has increased during recent years and trends in physical inactivity are alarming.

The Croatian Health Insurance Fund (CHIF), established in 1993, is the sole insurer in the mandatory health insurance (MHI) system that provides universal health coverage to the whole population. The ownership of secondary health care facilities is distributed between the State and the counties. The financial position of public hospitals is weak and recent reforms were aimed at improving this. The introduction of "concessions" in 2009 (public–private partnerships whereby county governments organize tenders for the provision of specific primary health care services) allowed the counties to play a more active role in the organization, coordination and management of primary health care; most primary care practices have been privatized.

The proportion of GDP spent on health by the Croatian government remains relatively low compared to western Europe, as does the per capita health expenditure. Although the share of public expenditure as a proportion of total health expenditure (THE) has been decreasing, at around 82% it is still relatively high, even by European standards. The main source of the CHIF's

revenue is compulsory health insurance contributions, accounting for 76% of the total revenues of the CHIF, although only about a third of the population (active workers) is liable to pay full health care contributions.

Although the breadth and scope of the MHI scheme are broad, patients must pay towards the costs of many goods and services, and the right to free health care services has been systematically reduced since 2003, although with exemptions for vulnerable population groups.

Configuration of capital and human resources in the health care sector could be improved: for example, homes for the elderly and infirm persons operate close to maximum capacity; psychiatric care in the community is not well developed; and there are shortages of certain categories of medical professionals, including geographical imbalances.

Little research is available on the policy process of health care reforms in Croatia. However, it seems that reforms often lack strategic foundations and/or projections that could be analysed and scrutinized by the public, and evaluation of reform outcomes is lacking.

The overall performance of the health care system seems to be good, given the amount of resources available. However, there is a lack of data to assess it properly.

Executive summary

Introduction

Croatia is a small central European country with a long Adriatic coastline, bordered by Bosnia and Herzegovina, Hungary, Serbia, Montenegro and Slovenia. The country is a parliamentary democracy, established by the Constitution of 22 December 1990, with local government organized on two levels: 21 counties (including the capital Zagreb) at a higher level, and 127 cities and 429 municipalities at a lower level.

Croatia suffered significant demographic and economic losses during the War of Independence (1991–1995). Post-war GDP growth, mainly underpinned by reconstruction activity, has not remained robust and the economy experienced recession in the late 1990s. Croatia has also not been immune to the global economic slowdown that started in 2008 and had to implement austerity measures, including in the health sector. GDP shrank in 2010, with no or negative growth rates also recorded in 2011–2013 and a further contraction expected in 2014. In 2012, Croatia's GDP was at 62% of the European Union (EU) average (using the purchasing power standard; PPS).

Croatia's EU accession on 1 July 2013 will bring in up to €11.7 billion in funding from the EU until 2020, including for the development of the health care sector, although the EU's recently strengthened requirements for the control of public finances are likely to have an impact on Croatia.

Croatia has a population of approximately 4.3 million. Life expectancy at birth has been increasing but is still lower than the EU average (3.6 years lower for men and 2.5 years lower for women). Like many other countries in Europe, Croatia is experiencing a decline in its natural population and population ageing is putting a strain on its health care resources. The prevalence of overweight and obesity in the population has increased during recent years, with more than half of both men and women being overweight, and levels of physical inactivity low and getting lower. Although alcohol consumption, smoking and

unhealthy diet are prevalent, some positive trends can be observed in these areas. A socioeconomic gradient is discernible in the health status of the population and there are also geographical differences, with the eastern regions of the country (which were particularly damaged during the Independence War) having poorer health.

Organization and governance

Croatia's social health insurance system is based on the principles of solidarity and reciprocity, by which citizens are expected to contribute according to their ability to pay and receive basic health care services according to their needs.

The steward of the health system is the Ministry of Health, which is responsible for health policy, planning and evaluation, public health programmes, and the regulation of capital investments in health care providers in public ownership. The Croatian Health Insurance Fund (CHIF), established in 1993, is the sole insurer in the mandatory health insurance (MHI) system, which provides universal health insurance coverage to the whole population. As the main purchaser of health services, the CHIF 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 under the MHI scheme. The CHIF is also responsible for the payment of sick leave compensation, maternity benefits and other allowances. In addition, it is the main provider of complementary voluntary health insurance (VHI) covering user charges (termed supplemental insurance in Croatia).

Although there was a general shift towards privatization in the early 1990s, the State actually increased its control of the health sector during that time. The majority of primary care physicians' practices have been privatized, and the remaining ones were left under county ownership. Tertiary health care facilities are owned by the State while the counties own the secondary health care facilities. "Concessions" were introduced in 2009; these are public–private partnerships (PPPs) whereby county governments organize tenders for the provision of specific primary health care services. This allowed the counties to play a more active role in the organization, coordination and management of primary health care, with the aim of better tailoring it to local needs.

The Ministry of Health is the main regulatory body in the health care system. Some major regulatory changes in recent years concerned the pharmaceutical sector. In 2006, the government introduced internal reference pricing (taking

Italy, France, Slovenia, Spain and the Czech Republic as reference points), limiting reimbursement to the reference price. In 2009, various types of financial risk-sharing agreements were introduced, particularly for expensive products, in order to enable market access for new medicines but keep control over expenditure. In the same year, Croatia reformed its pricing and reimbursement system for medicines, with the aim of maximizing value for money while increasing efficiency and transparency. The final reimbursement decision now depends on the expected impact on the CHIF's budget. Health technology assessment (HTA) is only just beginning to develop.

Information relevant to the health sector is collected and processed by a number of national and special registries. Overall, there are more than 60 registers in the health care system. However, these registers are neither linked nor standardized, and a large number of health reports are still produced by manual data processing.

There is no central web site or other central source that provides general health system information, but web sites and helplines of the Ministry of Health, the CHIF and the majority of hospitals and other health care institutions provide key information related to publicly funded health care services and rights, including some technical information, such as information on waiting times and available treatments.

Patient rights were already laid down in the Health Care Act of 1993 and almost identically continued in the 2004 Act on Protection of Patients' Rights and its amendments. However, it seems that, due to political and legal as well as cultural and social reasons, this legislation has still not had a significant effect on the status of patients in the Croatian health care system.

Croatia's EU accession on 1 July 2013 required harmonization of the regulatory framework governing the health care sector with the relevant EU legislation, including coordination of the social security systems between Croatia and other EU Member States.

Financing

The proportion of GDP spent on health by the Croatian government has grown steadily since the early 2000s. In 2012, Croatia spent 6.8% of its GDP on health, a share that was smaller than in most western European countries of the WHO European Region. The per capita purchasing power parity (PPP) health

expenditure in Croatia, although higher than in most central and south-eastern European countries, was lower than in nearly all western European countries of the WHO European Region.

While the share of public expenditure as a proportion of total health expenditure (THE) decreased between 1995 and 2012, at around 82% of THE it is still high compared to most countries in the WHO European Region, reflecting the tradition of solidarity in health care financing and the continued importance of health care on the Croatian policy agenda. Out-of-pocket (OOP) payments account for the majority of private expenditure on health.

In 2013, 17.6% of the total State budget was allocated to health care. The majority of the health care budget (over 91%) is allocated to the CHIF to finance goods and services covered within the MHI scheme. The key sources of the CHIF's revenue are: compulsory health insurance contributions, accounting for 76% of the total revenues of the CHIF, and financing from the State budget (15%). It is estimated that only about a third of the population (consisting of the economically active) is liable to pay full health care contributions. Overall, the financing of the MHI system seems to be regressive.

It is important to note that, while the regular health care expenditures within the health care budget are presented transparently, certain health care costs are "hidden" as an unpaid overdue debt (arrears). Since arrears are substantial (they amount to more than 10% of THE) the expenditure data described above do not provide an exact representation of the reality.

All Croatian citizens and residents have the right to health care through the compulsory MHI scheme. Although the breadth and scope of the MHI scheme are broad, patients must contribute to the costs of many goods and services. There are, however, exemptions for vulnerable population groups (e.g. pensioners, the disabled, the unemployed and those on low incomes). Since 2003, a substantial and systematic reduction of the right to free health care services has taken place, through both increasing co-payments to virtually all services and the introduction of rationing of services. Supplemental health insurance is also available, which mainly covers user charges from the MHI system. Certain population groups (e.g. the disabled, organ donors, frequent blood donors, students, people on low incomes) have the right to free supplemental health insurance membership in the CHIF and their respective contributions are financed from the State budget (over 60% of people with supplemental VHI in the CHIF). Croatia also provides one of the most generous sick leave and maternity compensation packages by international standards, and there are indications that the system may be subject to abuse.

Except for pharmaceuticals, no explicit positive lists of services and goods are in place. The CHIF plays a key role in determining which basic health services are covered under the MHI scheme. Health care providers contracted by the CHIF, both private and public, are automatically included in the National Health Care Network.

The CHIF contracts with individual and institutional health care providers for the provision of health care services within the scope of the MHI. A new contracting model is in place for the 2013–2015 period. This was introduced to incentivize health care providers to raise the quality of care and patient satisfaction and to incentivize the provision of certain types of care (e.g. prevention) through a mixture of provider payment mechanisms. As regards paying for hospital care, Croatia uses a modified version of the Australian Refined-DRG (AR-DRG) system, which was fully implemented on 1 January 2009 (replacing fee-for-service payments).

Physical and human resources

In 2012, there were 76 hospital institutions and treatment centres in Croatia. The majority of these were owned either by the State or by the counties, with only nine hospitals and five sanatoriums privately owned. The largest number of hospitals and hospital beds is located in continental Croatia, mainly in the city of Zagreb. Both the counties and the State are responsible for funding capital investments in the facilities they own, although investments are largely uncoordinated and lack strategic planning, and no real assessment of needs and health technology (HTA) are conducted. The technical condition of hospitals varies and information in this area is scarce. A Hospital Master Plan project (funded by the World Bank) aims to determine the future configuration of the hospital system in Croatia (including capacities, network, internal organization, financing, etc.), and was under public debate at the time of writing.

The number of acute beds in Croatia fell by around 11% between 1995 and 2011, and the number of acute beds per 100 000 population, at 351 in 2011, was lower in Croatia than the EU27 average of 383. At the same time, the average length of stay (ALOS) and bed occupancy rates in acute hospitals in Croatia are generally significantly higher than the respective indicators in some of the comparator countries, such as Slovenia and Hungary, as well as in other EU countries. The introduction of the DRG system seems to have been successful in further decreasing the length of stay in both university and general hospitals.

Data on the exact number of nursing and elderly home beds are not available, but according to a recent analysis, homes for the elderly and infirm persons operate at close to maximum capacity.

The use of information technology (IT) in health care is increasing, at both primary and secondary care levels. Since 2001, Croatia has been developing an e-health information system, with its aims being interoperability between the IT systems of health care providers, the CHIF and public health bodies, and the provision of real-time data on each patient and provider. Although integration of IT in primary health care has been completed, 80% of hospitals still have independent IT systems that are not fully integrated into the national hospital information systems.

The number of physicians per 100 000 inhabitants increased from around 212 in 1990 to 299.4 in 2011, but this is still substantially lower than the EU27 average of 346. There is a perceived shortage of physicians, especially in family medicine, and shortages are also observed in rural areas and on the islands. The number of nurses per 100 000 inhabitants in Croatia in 2011 was 579, well below the EU average of 836, and the ratio of nurses to physicians, at approximately 2:1 in Croatia, was lower than the same ratio in the EU15 (2.3:1). Nevertheless, unemployment was recorded among this category of medical professionals. Increased migration of health workers to other EU countries was expected after Croatia's EU entry. This related particularly to nurses, due to the lack of employment opportunities in Croatia. At the time of writing, no information on the actual trends was available.

Provision of services

The provision of public health services is organized through a network of public health institutes, with one national institute and 21 county institutes. A number of national programmes are currently in place. The Mandatory Vaccination Programme, in place since 1948, is the most important and most successful preventive health programme in the country. The Early Cervical Cancer Detection Programme, launched in late 2012, is one of the most recent national public health programmes.

Primary care physicians (GPs, paediatricians and gynaecologists) are usually patients' first point of contact with the health system. Each insured citizen is required to register with a GP (adults) or a paediatrician (children), whom they can choose freely. Reflecting an EU recommendation, all practising GPs are

required to specialize in family medicine by 2015. However, patients often skip the primary care level and seek health care services directly at hospitals and, so far, there have been no attempts to establish integrated care pathways. The share of specialized consultations among all CHIF-contracted ambulatory care consultations (i.e. primary and specialized care) was 23% in 2012, which may be an indication that some specialized care was used inappropriately. The introduction of "concessions" aimed at reforming the existing solution of rentals and privately contracted physicians seems to have weakened the continuity of care. There are not many group practices and interdisciplinary teams in primary health care. However, since 2013, GPs have been encouraged by the CHIF to create group practices (with financial incentives).

Before the reorganization of emergency care, which started in 2009, the provision of outpatient emergency medical services (EMS) was fragmented. The reform introduced a model of a country-wide network of County Institutes for Emergency Medicine. The next important reform step is the integration of all hospital emergency services into one emergency care hospital department. In about a third of general hospitals, emergency services are not yet integrated in one department; it is difficult to provide hospital EMS for patients with multiple symptoms and waiting times for patients are longer.

There is currently one pharmacy per 4000 inhabitants in Croatia, compared to one pharmacy per 3000 inhabitants in the EU on average. Pharmaceuticals are available free of charge for certain population groups and particular conditions; otherwise, co-payments are applied.

Rehabilitation services cover three types of care: orthopaedics, balneology and physical medicine. Although both the number of rehabilitation beds and physical and rehabilitation medicine specialists per 100 000 inhabitants is very high in Croatia compared to other EU Member States, the ratio of physiotherapists and other rehabilitation professionals is relatively low. There have also been shortcomings in education, which has been focused on rheumatology rather than rehabilitation, and in the quality and efficiency of rehabilitation medicine.

Long-term care (LTC) is mainly organized within the social welfare system. It is currently mostly provided in institutional settings. There is a considerable coverage gap regarding the estimated number of dependent people and those who have actually received some type of care, with shortages of formal services in the institutionalized context. Croatia is among the top three countries in Europe with the greatest scale of informal care, with the age cohort 50–64 bearing the greatest burden of caring for the elderly. Virtually no services are

available for informal carers. Waiting lists for county nursing homes are long, while private providers are financially unaffordable to many. The 2013 Social Care Act includes provisions for generational solidarity, the objectives of which are to keep the elderly in their own homes and with their family; to promote their social inclusion; and to improve their quality of life by developing and expanding non-institutional services and volunteering. A new draft, currently under public debate, proposes, among other features, a guaranteed minimum income as a new form of social welfare compensation.

There is no adequate system of palliative care and only a few institutions provide some forms of palliative care. The Strategic Plan for Palliative Care in Croatia, adopted in July 2013, plans to increase the availability of palliative care resources in the country (both infrastructure and human resources).

Mental health services are mainly provided in institutions and the number of psychiatric beds has been increasing in recent years. Community mental health care (except for certain programmes such as addiction prevention) remains underdeveloped, and specific and well-organized programmes of mental health care in the community are lacking.

Croatia has no defined legal framework for complementary and alternative medicine (CAM). Only acupuncture is recognized as a medical treatment and may be reimbursed by the CHIF, but only under certain conditions.

Recent reforms

The focus of reforms that were implemented between 2006 and 2013 was the financial stabilization of the health care system. The key reform, implemented between 2008 and 2011, contained a number of measures: diversification of public revenue collection mechanisms through the introduction of new mandatory and complementary health insurance contributions; increases in co-payments; and measures to resolve accumulated arrears. Other important reforms included changes in the payment mechanisms for primary and hospital care; pharmaceutical pricing and reimbursement reform; and changes to health care provision (e.g. emergency care reform).

The launch of many of these reforms was not difficult as for many of them policy options were not publicly discussed and no comprehensive implementation plans were developed. However, as a result, many of them soon faced serious implementation problems and some were only partially implemented.

Little research is available on the policy process of health care reforms in Croatia. However, it seems that reforms often lack strategic foundations and/or projections that can be analysed and scrutinized by the public, and there is little evaluation of the outcomes of reforms.

Planned reform activities for 2014–2016 will mainly be directed at achieving cost–effectiveness in the hospital sector.

Assessment of the health care system

Since 2000, health policy goals in the Croatian health care system have shifted their focus from reducing the prevalence of specific diseases to achieving health outcomes. The key objectives of the health system for the period between 2006 and 2012 can be found in two strategy documents: the National Strategy of Health Care Development 2006–2011 and the National Health Care Strategy 2012–2020. While the latter is currently being implemented, the 2006–2011 Strategy has not been formally evaluated.

The breadth of public coverage is virtually universal, the scope of MHI is broad, and sick leave compensation is one of the most generous by international standards. However, the depth of MHI cover has been eroding since the early 2000s, weakening the financial protection of the health care system. Health care financing is highly dependent on the employment ratio and wage level (financing mainly comes from employment-related social insurance payments) and, thus, on the economic situation. Health expenditure per head in Croatia being lower than in most western European countries may, to some extent, explain the existence of informal payments and corruption in health care.

Health care financing is based on regressive sources (e.g. insurance contributions, indirect taxation) and this regressive nature seems to have increased in the first decade of the 2000s. The impact of the health insurance reform of 2008–2011 on the regressive character of health care financing remains unclear.

There are no recent studies of user experiences with the health care system and it is therefore difficult to assess whether public perception has changed. Long waiting times have been a long-standing reason for low user satisfaction with the Croatian health care system, but the development of e-health may bring waiting times under control.

Studies of equity of access among the Croatian population are rare. Geographical distribution of the health care infrastructure and other resources varies and people living in more remote areas, such as the islands off the Adriatic coast, may find it harder to access health care. Apart from the place of residence, access also varies by income, education level, activity, age and sex, as evidenced by differences in self-reported unmet need for medical care.

Overall, health outcomes in Croatia can be considered to be rather good and improvements in population health may, to some extent, be attributable to the health system (e.g. preventive measures). However, few data are available in this area. Allocative efficiency seems to be rather poor and so far little has been done to improve this. On the other hand, technical efficiency seems to be quite good and has been increasing. Again, information in this area is incomplete.

Transparency around the high-level decision-making in the health care system and the availability of information for patients are other areas where improvements could be made.

Overall, systematic evaluation and assessment of the health care system is lacking and hinders assessment of its performance.

1. Introduction

Croatia is a small central European country with a long Adriatic coastline, bordered by Bosnia and Herzegovina, Hungary, Serbia, Montenegro and Slovenia. The country is a parliamentary democracy, established by the Constitution of 22 December 1990, with local government organized on two levels: 21 counties (including the capital Zagreb) at a higher level, and 127 cities and 429 municipalities at a lower level.

Croatia suffered significant demographic and economic losses during the War of Independence (1991–1995). Post-war gross domestic product (GDP) growth, mainly underpinned by reconstruction activity, has not remained robust and the economy experienced recession in the late 1990s. Croatia has also not been immune to the global economic slowdown that started in 2008 and had to implement austerity measures, including in the health sector. GDP shrank in 2010, with no or negative growth rates also recorded in 2011–2013 and a further contraction expected in 2014. In 2012, Croatia's GDP was at 62% of the European Union (EU) average (using the purchasing power standard; PPS).

Croatia's EU accession on 1 July 2013 will bring in up to €11.7 billion in funding from the EU until 2020, including for the development of the health care sector, although the EU's recently strengthened requirements for the control of public finances are likely to have an impact on Croatia.

Croatia has a population of approximately 4.3 million. Life expectancy at birth has been increasing but is still lower than the EU average (3.6 years lower for men and 2.5 years lower for women). Like many other countries in Europe, Croatia is experiencing a decline in its natural population and population ageing is putting a strain on its health care resources. The prevalence of overweight and obesity in the population has increased during recent years, with more than half of both men and women being overweight, and levels of physical inactivity low and getting lower. Although alcohol consumption, smoking and unhealthy diet are prevalent, some positive trends can be observed in these areas. A socioeconomic gradient is discernible in the health status of the population and

there are also geographical differences, with the eastern regions of the country (which were particularly damaged during the Independence War) having poorer health.

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 56 594 km² with a coastline length of 6278 km. Croatia is bordered by Slovenia and Hungary (to the north), Serbia, Bosnia and Herzegovina, and Montenegro (to the east and south) (Fig. 1.1). Zagreb is the capital and the largest city in Croatia with 793 057 inhabitants in mid-2012 [1] (Croatian Bureau of Statistics, 2013).

Fig. 1.1
Map of Croatia

Source: Based on United Nations, Department of Peacekeeping Operations, Cartographic Section (2007) (http://www.un.org/Depts/Cartographic/english/htmain.htm).

[1] These and other data from the 2013 Statistical Yearbook of the Republic of Croatia (Croatian Bureau of Statistics, 2013) are from 30 June 2012.

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. The Croatian Adriatic coast is made up of 1185 islands and islets with a total coastline of 4398 km. The total length of the mainland coast is 1880 km. The climate in Croatia is continental in the north, mountainous in the centre and Mediterranean along the Adriatic coast.

According to the (latest) 2011 Population Census, the total population of Croatia is approximately 4.3 million (Table 1.1). Years of decline in the number of births since 1981, increase in the mortality of younger age groups and negative migration trends during the War of Independence (1991–1995) have influenced the overall population trends. In 1991, Croatia entered a depopulation stage. In 2011, the birth and mortality rates were, respectively, 9.4 per 1000 and 11.6 per 1000, resulting in a decrease in natural population (–2.2 per 1000 people).

Like other European countries, Croatia is experiencing demographic ageing of its population. The share of the population aged 65 and above increased from just over 12% in 1981 to 18% in 2012 (Table 1.1). The increasing proportion of older people and decreasing proportion of working-age population affect population health, increasing health care costs and thereby putting a strain on available resources.

The majority of the population (just under 60%) lives in urban areas and the share of urban population has been rising, with concomitant depopulation of rural areas (Table 1.1). In 2010, just over 54% of the population was enrolled in tertiary education in Croatia. The level of enrolment in tertiary education was lower than in Finland (93.67%), Denmark (74.39%), Hungary (61.68%, 2009 data), and Slovenia (60.84%), and similar to the one observed in Slovakia (54.84%) (World Bank, 2014). However, the rate of tertiary enrolment is continuously increasing, in line with the Croatian education policy of increasing the rate of population participating in higher education.

Table 1.1
Trends in population/demographic indicators, 1981–2012, selected years

	1981	1991	2001	2011	2012
Total population (thousand)	4 601	4 784	4 437	4 262	4 268
Population, female (% of total)	51.6	51.5	51.9	51.8	51.7
Population ages 0–14 (% of total)	20.9	19.4	17.1	15.2	15.0
Population ages 65 and above (% of total)	12.2	13.1	15.7	17.7	18.0
Population ages 80 and above (% of total)	1.6	2.2	2.2	3.9	n.a.
Population growth (average growth rate between two consecutive censuses)[a]	n.a.	4%	–7.3%	–3.9%	0.1%
Population density (people per km^2)	81.4	84.6	79.4	75.7	75.4
Fertility rate, total (births per woman)	n.a.	1.55	1.38	1.41	1.52
Birth rate, crude (per 1000 people)	14.6	11.3	9.2	9.6	9.8
Death rate, crude (per 1000 people)	11.2	11.5	11.2	11.9	12.1
Age dependency ratio (population 0–14 and 65+: population 15–64 years)	0.48	0.46	0.49	0.49	0.49
Urban population (% total)[b]	50.5	54.2	55.8	57.8[d]	n.a.
Proportion of single-person households	16.1	17.8	20.8	24.6	n.a.
Educational level (school enrolment, tertiary, % of gross)[b, c]	18.99	23.88	33.22	54.13[d]	n.a.

Sources: Croatian Bureau of Statistics (2013); [b] World Bank (2014).
Notes: Population data are from population censuses (1981, 1991, 2001 and 2011); 2012 population data are as of 30 June 2012; [a] Authors' calculations based on total population data in Table 1.1; [c] Total enrolment in tertiary education, regardless of age, is expressed as a percentage of the total population of the five-year age group following on from secondary school leaving; [d] 2010; n.a. = not available.

The official language is Croatian. As of the latest population census in 2011, the main minority groups are Serbs (4.4% of the total population); followed by Bosniak, Italian, Albanian and Roma populations (together accounting for 1.96% of the population). The most prevalent religion is Roman Catholicism (86.3%) (Croatian Bureau of Statistics, 2013).

1.2 Economic context

In 2012, Croatia's GDP expressed in PPS[2] was 62% of the EU average. Although it was much lower than the EU27 average, it was the highest among the EU-aspirant countries of the western Balkans (Eurostat, 2014a). Croatia exhibits a post-industrial economic structure, with services accounting for approximately 69% of gross value added in 2012 (and tourism making a significant contribution) and the share of these rising. Industry was badly disrupted by the war in the first half of the 1990s; its share has been reduced to 32% (1995) and it continues to decrease (26% in 2012) (Table 1.2).

[2] The PPS is an artificial currency unit that eliminates price level differences between countries.

The four and a half years of war that followed Croatia's declaration of independence in 1991 caused important demographic and economic losses. 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 & Stubbs, 2003). Up to 20 000 people were reported killed or missing, and more than 30 000 people were left disabled as a result of the war (Vončina, et al., 2006). The economy was in recession during the war and, thereafter, post-war reconstruction activity (rebuilding houses and damaged infrastructure) spurred economic growth (EIU, 2008). Another recession followed in 1998–1999. Private consumption and a recovery in exports pulled the economy out of recession in 2000. Increased revenues from tourism, based on the country's long Adriatic coast and islands, have also helped to reduce the current account deficit to its lowest level over the years.

The global economic crisis, which started in 2008, has had a negative impact on Croatia's economy. Problems, such as a high unemployment rate, growing trade deficit, uneven regional development and a challenging investment climate, still remain as before. After negative economic growth was recorded in 2010, GDP stagnated in 2011 and so did public expenditure. In May 2012, the government announced that Croatia had (again) entered recession (CIA, 2012; Croatian National Bank, 2012).

Negative GDP growth and the poor economic climate prompted cuts in public spending, including cuts to the health care budget. In spite of the cuts, the government emphasized the importance of maintaining and improving the quality of health care services in order to protect the population's health. Although the planned 2013 health budget was originally slightly (about 2%) lower than the 2012 budget, following some rebalancing and the enactment of the Act on Sanation of Public Institutions (see Section 6.1) the realized budget was eventually about 9% higher (CHIF, 2013). However, since 2012, there has been more pressure to rationalize health care costs and some measures aimed at achieving significant savings, such as the joint hospital procurement, have been implemented (see Section 6.1). Croatia's EU accession (see Section 1.3) will bring in up to €11.7 billion in funding from Brussels up to 2020, including for the development of the health care sector (EIU, 2014). However, EU membership can also facilitate the enactment of structural reforms, as public anger over austerity measures could be deflected to the EU (EIU, 2014).

Table 1.2
Macroeconomic indicators, 1990–2012, selected years

	1990	1995	2000	2005	2010	2012
GDP (current, billion US$)	24.78	22.05	21.52	44.82	58.87	59.23
GDP, PPP (current international US$, billion)	n.a.	37.25	48.40	68.10	82.73	89.45
GDP per capita (current international US$)	5 185	4 722	4 862	10 090	13 327	13 879
GDP per capita, PPP (current international US$)	n.a.	7 979	10 935	15 332	18 726	20 961
GDP average annual growth rate (%)	n.a.	n.a.	3.8	4.3	–1.4	–2.0
Government expense (% of GDP)[a]	n.a.	36.2	39.1	34.6	37.9	36.6
Cash surplus/deficit (% of GDP)	n.a.	–1.1	–5.3	–2.4	–4.5	–3.4
Tax revenue (% of GDP)	n.a.	23.1	22.4	20.0	19.4	19.6
Public debt (% of GDP)	n.a.	n.a.	n.a.	38.5[b]	40.9[b]	55.8[h]
Value added in industry (% of GDP)	35.8	31.8	28.5	28.5	26.8	26.3
Value added in agriculture (% of GDP)	10.9	7.3	6.5	5.0	5.0	5.0
Value added in services (% of GDP)	53.4	60.9	65.0	66.4	68.2	68.8
Labour force (total, million persons)	2.19	2.10	1.97	2.00	1.95	1.86
Unemployment, total (% labour force)	n.a.	10.1	16.1	12.6	11.8	15.8
Poverty rate (people at risk of poverty or social exclusion (%))[c, d]	n.a.	n.a.	n.a.	n.a.	30.7	32.3
Income or wealth inequality (Gini coefficient)[e]	n.a.	n.a.	0.31	0.29[f]	0.24[g]	n.a.
Real interest rate	n.a.	n.a.	7.1	7.6	10.5	7.3
Official exchange rate (US$)	n.a.	5.23	8.28	5.95	5.50	5.85

Sources: World Bank (2014); [b] Ministry of Finance (2011); [c] Eurostat (2014d); [h] Croatian National Bank (2014).
Notes: [a] Government expense is cash payments for operating activities of the government in providing goods and services; [d] Population at risk of poverty is defined by Eurostat (2014d) as the number of people who have an equivalized disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalized disposable income (after social transfers); [e] The Gini coefficient is a measure of absolute income inequality. It is a number between 0 and 1, where 0 corresponds with perfect equality (where everyone has the same income) and 1 corresponds with perfect inequality (where one person has all the income and everyone else has zero income); [f] 2004; [g] 2008; [h] projection; GDP = gross domestic product; n.a. = not available; PPP = purchasing power parity.

The economy contracted by 1% in 2013 and a further contraction is expected in 2014. The budget deficit increased from 3.4% of GDP in 2012 to an estimated 6.1% of GDP in 2013 (EIU, 2014)[3].

1.3 Political context

Croatia is a parliamentary republic. It was established by the Constitution of 22 December 1990. 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,

[3] The text that follows goes beyond the cut-off date of this HiT profile (31 December 2013). On 28 January 2014, the European Council opened the excessive-deficit procedure for Croatia, setting targets for the budget deficit for 2014–2016. In response, on 30 January, the government announced consolidation measures, targeted mainly at the revenue side while expenditure cuts seem unlikely as an election is due in December 2015 and public opinion is increasingly negative after several years without growth. However, if the European Commission is not convinced by the proposed measures, the country may be forced into a stricter fiscal adjustment (country-specific recommendations were due in mid-2014) (EIU, 2014).

with the consent of the Parliament, the Prime Minster and Cabinet members. The Parliament (*Sabor*) has a single chamber, the House of Representatives, comprising 151 deputies (following the elections on 4 December 2011). Members are elected for a four-year term in direct elections. The government exercises executive powers in conformity with the Constitution and national legislation. The government passes decrees, introduces legislation, proposes the state budget and enforces laws and other regulations enacted by the Parliament. 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.

In January 2010, Ivo Josipović won his first five-year term as President. Zoran Milanović won a term as Prime Minister after the Social Democratic Party of Croatia (SPH) was successful in the 2011 elections together with coalition parties the Croatian People's Party (HNS), Istrian Democratic Assembly (IDS) and Croatian Party of Pensioners (HSU), with a total of 45.7% of the votes (State Election Committee, 2011). The right-centre Croatian Democratic Union (HDZ), which had been the ruling party since the 1990s (except in the period 2000–2003), was overthrown. A new division of competences and reorganization of ministries and other central state authorities took place (see Section 2.3) and a redesign of health policy was announced (see Chapter 6) (Bodiroga-Vukobrat, 2012).

Local government is organized on two levels: 21 counties (including the city of Zagreb) at a higher level, and 127 cities and 429 municipalities at a lower level. 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 in regional elections for four-year terms.

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 NATO Partnership for Peace (PfP) programme of bilateral cooperation and WTO in 2000. Croatia officially became a NATO member on 1 April 2009 and the 28th member of the EU on 1 July 2013. Since the accession, public support for membership has fallen significantly and it is likely to fall further as EU-mandated fiscal consolidation measures are implemented (see Footnote 3).

1.4 Health status

Life expectancy at birth has been increasing continuously since 1980, reaching an average of 77 years for both sexes in 2012 (74 for males and 80 for females) (Table 1.3). A small decline in life expectancy of the male (and also total) population occurred in 1995 and can be explained by the Independence War that ended in late 1995. In 2012, life expectancy at birth in Croatia was slightly higher than in Slovakia (76 years), Hungary (75) but lower than in Denmark (80), Finland (81) and Slovenia (80) (World Bank, 2014). Mortality rates are also following favourable (i.e. decreasing) trends, with a lower mortality rate observed in females compared to males. The female mortality rate is also lower than in most of the aforementioned European countries (except for Slovenia), whereas male mortality is higher than in Denmark, Finland and Slovenia and lower than in Hungary and Slovakia (2012 data[4]; World Bank, 2014).

Table 1.3

Mortality and health indicators in Croatia, 1980–2012, selected years

	1980	1990	1995	2000	2005	2010	2012
Life expectancy at birth, total	70.2	72.2	72.1	72.8	75.2	76.5	76.9
Life expectancy at birth, male	66.4	68.6	67.9	69.1	71.8	73.5	73.9
Life expectancy at birth, female	74.2	75.9	76.5	76.7	78.8	79.6	80.1
Total mortality rate, adult, male (per 1000 male adults)	245.2	215.6	192.3	174.6	158.8	143.2	138.4
Total mortality rate, adult, female (per 1000 female adults)	100.5	87.3	79.2	71.0	65.5	60.0	58.4

Source: World Bank (2014).

Monitoring of statistical data on healthy life expectancy started only recently and is not possible to track over a longer period of time. According to the Survey of Health and Living Conditions (EU-SILC) from 2010, as reported in the National Health Development Strategy 2012–2020, healthy life expectancy at birth was lower in Croatia (57.4 for men and 60.6 for women) compared to the EU27 average (61.7 for men and 62.6 for women). Healthy life expectancy at 65 is relatively low in Croatia (6.4 years for both genders, compared to 8.7 years for men and 8.8 years for women in the EU27) (Bodiroga-Vukobrat, 2013). The share of persons with chronic illnesses or long-term health problems, at 38% of the total population, is high (it is 31.4% in the EU27 on average). Self-perceived

[4] Data for the comparator countries are for 2009 or 2011.

health is very low and progresses with age: only 46.4% of the population rates personal health status as good or very good (compared to 68% in the EU27 on average) (Bodiroga-Vukobrat, 2013).

Circulatory diseases were the leading cause of deaths in 2012, for both men and women, accounting for 48% of all deaths, down from 53% in 2000 (Table 1.4). Circulatory diseases were followed by malignant neoplasms, which were responsible for 27% of all deaths, up from 23% in 2000. Malignant neoplasms were the second cause of mortality for both men and women. These two disease groups accounted for three quarters of all causes of mortality.

According to data released by the National Cancer Registry in April 2013, in 2011, 20 463 new invasive cancer cases[5] (11 157 in males and 9306 in females) were diagnosed. The incidence rate was 477.6 per 100 000 people (539.9 per 100 000 for men and 419.5 per 100 000 for women). The most common cancer sites in males were the trachea, bronchi and lungs (19% of total incidence in men). Breast cancer was the most common type of cancer in women (22% of total incidence in women). It is expected that cancer incidence will grow in the coming years due to population ageing and a high prevalence of unfavourable lifestyles such as low levels of physical activity, high alcohol consumption, unhealthy diet and smoking (CNIPH, 2013).

According to recent OECD data, the prevalence of diabetes in adults aged 20–79 years in 2011 was 5.3% in Croatia compared to the average of 6.4% for the 22 EU countries studied. The incidence of Type 1 diabetes in children aged 0–14 years per 100 000 was also much lower in Croatia (9.1 vs 18.2) (OECD, 2012a). According to the CroDiab registry of diabetic patients of 2012, a significant proportion of diabetic patients had unsatisfactory metabolic parameters, such as high levels of HbA1c (36.9% of patients) (CNIPH, 2013).

[5] Excluding skin cancer.

Table 1.4

Main causes of death, 1980–2012, selected years

Causes Of Death (ICD-10 Classification) (Selected Causes)	1980	1990	1995	2000	2005	2010	2012		
							Total	Male	Female
Communicable diseases	**655**	**513**	**393**	**518**	**316**	**337**	**291**	**165**	**126**
Tuberculosis (A15–A19)	522	412	224	169	109	82	59	42	17
Non-communicable diseases	**49 445**	**51 679**	**50 143**	**49 728**	**51 474**	**51 759**	**51 419**	**25 611**	**25 808**
Circulatory diseases (I00–I99)	22 809	27 277	25 340	26 712	26 029	25 631	24 988	10 855	14 133
Ischaemic heart diseases (I20–I25)	n.a.	n.a.	9 485	9 341	9 948	11 264	11 464	5 271	6 193
Malignant neoplasms (C00–C97)	8 145	10 746	10 425	11 683	12 640	13 698	13 940	8 025	5 915
Breast cancer (C50)	454	710	768	843	922	983[a]	1 048	15	1 033
Cancer of trachea, bronchus and lung (C33–C34)	1 627	2 285	2 190	2 478	2 640	2 768	2 790	2 106	684
Colon, rectum and anus cancer (C18–C21)	712	1 048	1 171	1 509	1 747	1 931	2 006	1 138	868
Cervical cancer (C53)	119	129	113	91	105	132	106	–	106
Diabetes (E10–E14)	555	674	1 072[b]	905	1 077	1 424	1 330	586	744
Mental and behavioural disorders (F00–F99)	370	389	534	648	679	1 001	888	427	461
Cerebrovascular diseases (I60–I69)	7 389	8 653	8 366	8 383	6 979	7 610	7 291	3 097	4 194
Respiratory diseases (J00–J99)	2 969	1 406	2 034	2 043	3 180	1 957	2 152	1 278	874
Chronic respiratory diseases (J40–J47)	1 332	802	931	1 023	1 342	1 525	1 656	1 011	645
Digestive diseases (K00–K93)	2 755	2 539	2 344	2 507	2 360	2 459	2 267	1 357	910
External causes	**4 040**	**4 381**	**3 847**	**2 905**	**2 878**	**2 968**	**2 951**	**1 851**	**1 100**
Transport accidents (V01–V99)	1 487	1 102	751	717	638	500	441	369	72
Suicide (X60–X84)	974	1 142	930	926	875	777	776	596	180
Total deaths	**50 100**	**52 192**	**50 536**	**50 246**	**51 790**	**52 096**	**51 710**	**25 776**	**25 934**

Source: Croatian Bureau of Statistics (2013).
Notes: Since only selected causes of death, including some subcategories (e.g. specific types of cancer) are presented, the sum of the number of cases differs from the totals in the bottom row; [a] females only; [b] only cases of unspecified diabetes mellitus (E14 according to ICD-10 classification) are included; – = not applicable; n.a = not available.

Croatia is a country with high rates of overweight and obese people. The Croatian Adult Health Study (CAHS) conducted in 2003 on a representative sample of the adult population revealed that over 60% of men and 50% of women were overweight or obese and 20.1% of men and 20.6% of women were obese. A follow-up study, the Croatian Adult Cohort Study (CroHort), conducted five years later, noted an increasing trend in the prevalence of obesity: 25.3% more men and 34.1% more women were obese in 2008 (Milanović et al., 2009; Poljičanin et al., 2012).

According to the CAHS survey, the level of physical activity among the population is low. In 2003, 30.5% of the population was considered to be physically inactive[6] (28.9% of men and 31.9% of women) (Milošević et al., 2009). The collected data also show a significant decline in the intensity of physical activity in 2008 compared to 2003, regarding the way of getting to work, the level of physical strain at work, and the frequency of physical activity taken in spare time (Missoni, Kern & Missoni, 2012). Levels of physical activity are also alarming among children and youth. While the current WHO guidelines recommend that young people participate in physical activity of at least moderate intensity for at least one hour a day, according to the Health Behaviour in School-aged Children (HBSC) survey results for 2010, Croatian boys and girls aged 11 were physically active only 4.6 days and 3.8 days per week, respectively (CNIPH, 2012).

The 2003 CAHS survey showed that 27.4% of Croatia's adult population, aged 18 years and above, smoked on a daily basis and that smoking was more prevalent among men than women (Samardžić, 2009). The results of a follow-up survey in 2008 showed that while the prevalence in men decreased significantly to 22.9%, the prevalence in women decreased only slightly to 19.4%, making the difference between the sexes insignificant (Poljičanin et al., 2012).

In 2003, prevalence of heavy[7] alcohol consumption in Croatia was 12.3% among men and 0.7% among women. While it decreased significantly among men (to 5.2%) in 2008, it increased significantly (to 5.6%) among women (Poljičanin et al., 2012). Recorded adult annual per capita alcohol consumption was around 10.1 litres of pure alcohol in 2010 (only slightly higher than the EU27 average of 10) (WHO, 2014) and has remained stable in recent years.

According to data collected by the Croatian Bureau of Statistics, there were 41 771 live births in 2012 in Croatia. Births were most common in women aged 25–29 (98.8 births per 1000 in 2012, followed by the 30–34 (91.1) and 20–24 (54.4) age groups. Fertility rate for the age group 15–19 was 12.7 per 1000 in 2012 and has been declining (Table 1.5). However, this rate is higher than in many EU countries, which suggests that programmes of educating adolescents in both abstinence and contraception aimed at preventing adolescent pregnancies could be improved. In 2012, 10 088 abortions were registered, which constitutes a

[6] Respondents were considered to be physically active if they had satisfied at least two of the following conditions: a) at least 15 minutes of regular physical activity on their way to work; b) at least moderately strenuous job; c) at least 2–3 times a week leisure time physical activity; d) without any further objections by physicians and other health care professionals on insufficient physical activity.

[7] Defined as having a binge of heavy drinking (6 units or more) at least once a week or drinking alcohol daily and having someone constantly advising them on the need to cut down on alcohol consumption.

slight decrease compared to previous years. Among them, 3572 (35.4%) were medically induced and 1696 (16.8%) were spontaneous abortions. Most women who had a medically induced abortion were between 30 and 39 years old and most had already had children (2314 or 71.6%) (CNIPH, 2013). This indicates that abortion continues to be used as a birth control method. Due to highly developed maternal health care, with 99.9% of births in hospital units, maternal mortality has been very low in Croatia (7.2 deaths per 100 000 live births in 2012) (Table 1.5). Perinatal, neonatal, post-neonatal and infant mortality rates are also very low and lower than the respective indicators in the EU27 (WHO, 2014) (Table 1.5).

Table 1.5

Maternal, child and adolescent health indicators, 1980–2012, selected years

	1980	1990	1995	2000	2005	2010	2011	2012
Adolescent fertility rate (births per 1000 women ages 15–19 years)[a]	23.0	19.1	17.7	15.7	13.9	13.1	12.9	12.7
Abortion per 1000 live births	701.1	697.1	284.6	172.2	107.4	92.8	105.5	85.5
Perinatal mortality rate (deaths per 1000 births)	17.7	10.3	9.2	9.4	6.4	4.7	3.5	3.6
Neonatal mortality rate (per 1000 live births)	14.8	7.5	6.0	5.7	4.1	3.3	3.5	2.4
Post-neonatal mortality rate	5.8	3.2	3.0	1.8	1.7	1.1	1.2	1.2
Infant mortality rate	n.a.	10.7	9.0	7.4	5.7	4.4	4.7	3.6
Probability of dying by age 5 (per 1000 live births)	n.a.	12.4	10.2	8.4	6.6	5.3	5.2	4.4
Maternal mortality rate (deaths per 100 000 live births)	n.a.	10.8	12.0	6.9	7.1	9.2	9.7	7.2
Syphilis incidence rate (per 100 000)	4.7	0.6	1.1	0.2	0.8	0.4	0.4	n.a.
Gonococcal infection incidence rate (per 100 000)	55.9	7.8	1.1	0.5	0.3	0.5	0.3	n.a.

Source: WHO (2014); [a] World Bank (2014).
Note: n.a. = not available.

Oral health of pre- and school-aged children, and preventive measures targeted at these groups, are important indicators of oral health of the population. Dental decay is the most common form of dental disease, accounting for 56% of dental diseases in preschool children, 55% in school-aged children, 44% in adults and 27% in elderly people (65+) (CNIPH, 2012). The DFMT index (measuring the average number of decayed, filled and missing teeth) compiled by the CNIPH for 12-year-old children increased from 2.6 in 1991 to 3.5 in 1999[8] (Rajić, 2000).

[8] No more recent data are available.

According to 2012 data, vaccination coverage in Croatia, both for children and adults, was very good – the legal minimum vaccination coverage (95%) was met for all types of vaccinations included in the mandatory vaccination schedule for children (see Section 5.1). At 54.3% the (re)vaccination rate of 60-year-olds with tetanus vaccine was unsatisfactory and efforts are being made to increase this (CNIPH, 2013). Data on vaccination rates among Roma children are unreliable but anecdotal evidence suggests that there is mistrust towards vaccinations among the Roma population, undermining the effectiveness of the National Health Programme for Roma People (improving immunization coverage of Roma children was one of the programme's goals).

The 2008 CroHort study reveals the existence of a socioeconomic gradient in the health status of the adult population. The study found an association between poor socioeconomic conditions (low level of education, poor financial situation) and health indicators such as higher levels of stress, unhealthy behaviour (higher alcohol consumption in men) and poorer general health status (poorer mental health, in both men and women, heart problems and back pain) (Milanović et al., 2012). There are also geographical differences in health status. The eastern regions of Croatia were badly damaged during the Independence War and this may explain some of the differences in the health status of the populations living in the east of Croatia and those living in other regions (with populations in the east of the country having poorer health).

2. Organization and governance

Croatia's social health insurance system is based on the principles of solidarity and reciprocity, by which citizens are expected to contribute according to their ability to pay and receive basic health care services according to their needs.

The steward of the health system is the Ministry of Health, which is responsible for health policy, planning and evaluation, public health programmes, and the regulation of capital investments in health care providers in public ownership. The Croatian Health Insurance Fund (CHIF), established in 1993, is the sole insurer in the mandatory health insurance (MHI) system, which provides universal health insurance coverage to the whole population. As the main purchaser of health services, the CHIF 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 under the MHI scheme. The CHIF is also responsible for the payment of sick leave compensation, maternity benefits and other allowances. In addition, it is the main provider of complementary voluntary health insurance (VHI) covering user charges (termed supplemental insurance in Croatia).

Although there was a general shift towards privatization in the early 1990s, the State actually increased its control of the health sector during that time. The majority of primary care physicians' practices have been privatized, and the remaining ones were left under county ownership. Tertiary health care facilities are owned by the State while the counties own the secondary health care facilities. "Concessions" were introduced in 2009; these are public–private partnerships (PPPs) whereby county governments organize tenders for the provision of specific primary health care services. This allowed the counties to play a more active role in the organization, coordination and management of primary health care, with the aim of better tailoring it to local needs.

The Ministry of Health is the main regulatory body in the health care system. Some major regulatory changes in recent years concerned the pharmaceutical sector. In 2006, the government introduced internal reference pricing (taking Italy, France, Slovenia, Spain and the Czech Republic as reference points), limiting reimbursement to the reference price. In 2009, various types of financial risk-sharing agreements were introduced, particularly for expensive products, in order to enable market access for new medicines but keep control over expenditure. In the same year, Croatia reformed its pricing and reimbursement system for medicines, with the aim of maximizing value for money while increasing efficiency and transparency. The final reimbursement decision now depends on the expected impact on the CHIF's budget. Health technology assessment (HTA) is only just beginning to develop.

Information relevant to the health sector is collected and processed by a number of national and special registries. Overall, there are more than 60 registers in the health care system. However, these registers are neither linked nor standardized, and a large number of health reports are still produced by manual data processing.

There is no central web site or other central source that provides general health system information, but web sites and helplines of the Ministry of Health, the CHIF and the majority of hospitals and other health care institutions provide key information related to publicly funded health care services and rights, including some technical information, such as information on waiting times and available treatments.

Patient rights were already laid down in the Health Care Act of 1993 and almost identically continued in the 2004 Act on Protection of Patients' Rights and its amendments. However, it seems that, due to political and legal as well as cultural and social reasons, this legislation has still not had a significant effect on the status of patients in the Croatian health care system.

Croatia's EU accession on 1 July 2013 required harmonization of the regulatory framework governing the health care sector with the relevant EU legislation, including coordination of the social security systems between Croatia and other EU Member States.

2.1 Overview of the health system

The steward of the health system is the Ministry of Health, which is responsible for health policy, planning and evaluation, public health programmes, and the regulation of capital investments in health care providers in public ownership. The Ministry of Finance also plays a key role and is responsible for the planning and management of the government budget.

Croatia's social health insurance system is based on the principles of solidarity and reciprocity, by which citizens are expected to contribute according to their ability to pay and receive basic health care services according to their needs. The CHIF[1] is the sole insurer in the MHI system.

The basic legal framework of the health care system is based on the following legal acts (and their later amendments; see Section 9.2 for the full list of acts): the Health Care Act of 2008 (with amendments in 2013); the Mandatory Health Insurance Act of 2013 (introduced mainly to align the Croatian legislation with the Patients' Rights Directive[2]); and the Patients' Rights Protection Act of 2004 (amended in 2008). The Health Care Act regulates the principles of health care organization, the rights and obligations of health care users, types and responsibilities of health care institutions (at various levels of care) and establishes the principles of monitoring of health care institutions. The Mandatory Health Insurance Act regulates the scope of the right to health care and other rights and obligations of persons insured under the MHI scheme, supervision, financing, organization, and tasks of the CHIF and the conclusion of contracts between the CHIF and health care providers and suppliers of medical goods. The rights of patients are comprehensively regulated in the Patients' Rights Protection Act.

The provision and financing of services are largely public, although private providers and insurers also operate in the health sector. Provision of health care services in specific areas of care is regulated in separate legal acts. The key acts include: the Medical Practice Act, the Pharmacy Act, the Nursing Act and the Dental Care Act (all in force since 2003 and with major amendments in 2008 and/or 2013); the Midwifery Act of 2008; the Physical Therapy Activities Act of 2008; and the Act on the Health Care Technical Services of 2009 (regulating

[1] The Croatian name of the CHIF is *Hrvatski zavod za zdravstveno osiguranje*, which means Croatian Institute for Health Insurance (CIHI). While the English name was changed in January 2013, with Institute replaced by Fund, as of 31 December 2013, the Croatian name has not yet been changed. For simplicity, we use only one name throughout the text – the Croatian Health Insurance Fund or CHIF.

[2] Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border health care, OJ L 88 of 4 April 2011.

the work and educational requirements of sanitary technicians, occupational therapists and biochemical technicians). The quality of health care services is regulated in the Act on Quality of Health and Social Care of 2011. Provision of VHI is governed by the Voluntary Health Insurance Act of 2006 (with major amendments in 2008 and 2010).

The MHI system includes compensations and allowances, such as sick and maternity leave allowances and transport costs (see Section 3.3). It is part of a broader social security system, which also comprises the pension insurance (covering risks of old age, invalidity, employment injury, occupational disease and death) and unemployment insurance (covering the risk of unemployment and also promoting employment and rehabilitation of unemployed persons who become disabled while performing work duties) (Euraxess, 2011).

2.2 Historical background

The period from 1918 to 1945

Health insurance was introduced in 1922 through three separate private organizations. The Brotherhood Treasury covered mine workers, the Central Office for Workers Insurance covered other employees and workers, and Merkur mainly covered government officials. These schemes were some of the more advanced health insurance schemes in Europe. They also had their own health care providers.

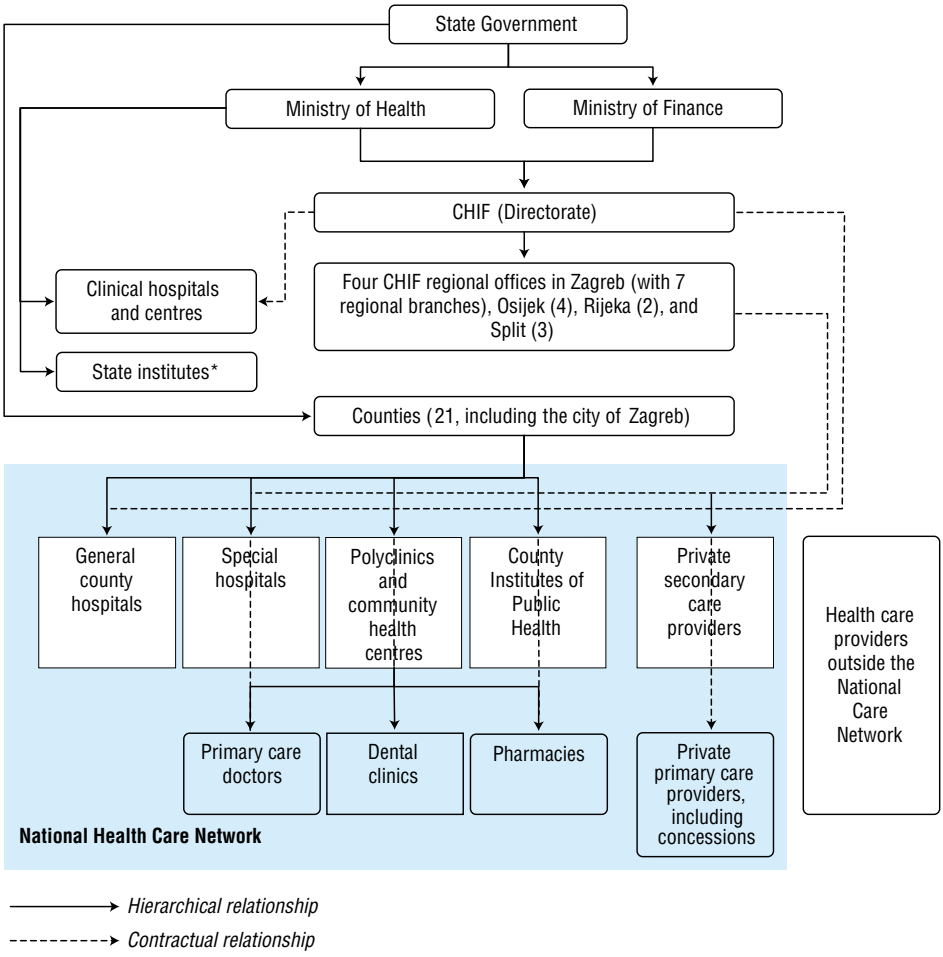
In the 1920s, public health centres for health promotion, hygiene and epidemiology were established in rural areas. The remainder of the health system was mostly privately run. In general, health services were oriented towards individuals who could pay for health care, while there was a public system for the control of communicable diseases and promotion of public hygiene. Professor Andrija Štampar of the Zagreb School of Public Health, one of the founders of the WHO and of the Association of Public Health in Europe, helped to introduce a range of public health services in the 1920s and 1930s. He also pioneered primary health care centres in Croatia.

The period from 1945 to 1990

Croatia ran its own health services with its own Ministry of Health as a separate State federated within the Socialist Federal Republic of Yugoslavia. In 1945, compulsory State health insurance covering most of the population was introduced. This was financed from income-related contributions and from the State budget. Insurance was first organized at the local level through local

health and social insurance organizations. From 1950, the federal government administered pensions and health insurance funds and, in 1962, these funds were split into the Health Insurance Fund and the Pension and Disability Fund.

Fig. 2.1
Overview of the health system



* Croatian National Institute of Public Health (CNIPH), Croatian National Institute of Transfusion Medicine, Croatian National Institute for Protection of Health and Safety at Work, Croatian National Institute for Toxicology and Croatian National Institute for Emergency Medicine.

The Constitution of 1974 introduced community self-management for the majority of public services, including health care. Local associations were set up and tasked with the planning, collection and distribution of financial resources, and organization of health services. Legislation was enacted to consolidate

large units, known as medical centres, which administered primary care, care in county hospitals and public hygiene services in their area. Community management proved incompatible with large medical organizations and, in practice, decisions were made by political or governmental bodies. Resources were used inefficiently and hospitals seized most of the funds, leaving few resources for primary care. In line with the socialist ideology, private medical practices, despite a long tradition of private health care, were reduced (with the exception of dental practices) 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.

The period from 1990 to 2008

In the two decades following independence (1991), the Croatian health care system underwent a series of health reforms that transformed the once fragmented and highly decentralized system into a more centralized one that maintains the principles of universality and solidarity. The Health Care Act of 1993 consolidated the three separate health insurance schemes under a single public entity, the CHIF, providing universal health insurance coverage to the whole population. The Act initially allowed opting-out of the public insurance system and acquiring substitutive insurance with private insurers but this was abolished in 2002 in order to protect the financial sustainability of the health insurance model.

The 1993 Act also introduced the principles of patient choice and patient rights. Participation of private insurers and the role of private provision of health care services were recognized. 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, offering complementary insurance coverage for services not covered under the MHI scheme.

Despite significant improvements in the financing and delivery of health care in the 1990s, the health system continued to face a variety of financial and structural problems, such as the imbalance between revenues and expenditures, excess infrastructure and low efficiency. A number of measures were introduced in the first decade of the 2000s in response to these problems. They included, among others, limiting benefits, increasing cost sharing (in 2003 complementary VHI was introduced to cover co-payments), reducing the payroll contribution rate, and reorganization and rationalization of health care delivery. However, these reforms did not achieve their goals and the CHIF mostly ran deficits in the period 2002 to 2008 (Vončina et al., 2012).

The period since 2008

The financial vulnerability of the health care system, caused by years of deficits at both the CHIF and health care providers, was further aggravated by the economic crisis that started in 2008. The rising unemployment rate, which adversely affected the already low dependency ratio, i.e. the ratio between the number of people who contribute economically to the social welfare system and the number of people who receive benefits (see Section 3.3.2), has had a negative effect on the financial sustainability of the system.

In November 2008, an all-encompassing reform of the health care system, focusing on financial stabilization and increasing system efficiency, had been started (see Section 6.1). Since the new government took office in 2011, the focus of reforms has shifted towards achieving cost–effectiveness in the hospital sector. The most recent reforms and reform plans are described in Chapter 6.

Croatia's EU accession on 1 July 2013 necessitates harmonization of the health system with EU legislation, especially in areas such as training and mobility of health workers, consumer protection, patient and food safety, pharmaceutical pricing decisions, environmental health risks, and organ explantation and transplantation. EU legislation on social security coordination became immediately and fully applicable in Croatia from the date of the accession, replacing the existing bilateral social security agreements with EU Member States and the European Economic Area (EEA) (see Section 2.9). EU strategies, such as the European Health Strategy, have also become applicable from 1 July 2013.

2.3 Organization

Ministry of Health

At the central level, the Ministry of Health is responsible for: (i) health policy, planning and evaluation, including drafting of legislation, regulation of standards for health services and training; (ii) public health programmes, 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, it draws up legislation for consideration by the Parliament, produces the biannual 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 manages public health activities including sanitary inspections; supervises food and drug quality;

and engages in the promotion of health education of the population. It also nominates the chairs of the governing councils and appoints the majority of the board members in state-owned health care facilities. The Strategic Plan of the Ministry of Health 2014–2016 issued in June 2013 sets out specific objectives for the future activities to be performed by the Ministry (see Section 6.2).

Following the 2011 parliamentary elections, the name of the Ministry has been changed from the Ministry of Health and Social Welfare to the Ministry of Health. The social welfare component was separated and transferred, together with some of the functions of the old Ministry of Family, War Veterans and Inter-Generational Solidarity, to the new Ministry of Social Policy and Youth. Also, the Croatian name of the Ministry of Health was changed from *Ministarstvo zdravstva*, which connotes the health care system, to *Ministarstvo zdravlja*, which refers to the state of being healthy) (Bodiroga-Vukobrat, 2012).

Ministry of Finance

The Ministry of Finance is responsible for the planning and management of the government budget, which includes the approval of the central budget transfers to the CHIF and 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 2002, the State Treasury has been responsible for all State finances, including collecting and allocating MHI contributions.

Croatian Health Insurance Fund

Established in 1993, the CHIF is the single purchaser of health care services provided within the MHI scheme. It may also offer supplemental VHI to persons insured under the MHI scheme (see Section 3.5). The CHIF also plays a key role in the definition of the basic benefits basket covered under the statutory insurance scheme, the establishment of performance standards and in price setting for services covered under the MHI scheme. The CHIF is also responsible for the distribution of sick leave compensation, maternity benefits and other allowances as regulated by the Mandatory Health Insurance Act.

The Directorate of the CHIF is located in Zagreb and there are four regional offices (in Zagreb, Osijek, Rijeka and Split), with a further 16 regional branches (Fig. 2.1). The Zagreb office (Directorate) is responsible for contracting with providers, while the four regional offices and 16 branch offices execute the contracts (see Section 3.3). The CHIF is overseen by a governing council, which consists of representatives of the insured population, the Ministry of Health, the Ministry of Finance, the Croatian Employers' Association, health institutions and private practices (independent general practitioners (GPs)). Although the CHIF is formally independent, it is effectively controlled by the

central government. The latter appoints its director and board of directors (upon recommendation of the Minister of Health) and has the authority to dismiss them (Vončina, Džakula & Mastilica, 2007). The central government continues to play a dual role as the purchaser and provider of health care through its influence on the CHIF funding and its role as the largest owner of hospitals and public health institutions. In 2002, the CHIF was consolidated under the Treasury account but it will operate separately from mid-2014.

Croatian National Institute of Public Health

The Croatian National Institute of Public Health (CNIPH) was established in 1923. Its main activities include: provision of statistical research on health and health care services; maintaining public health registers; monitoring and analysis of the epidemiological situation; provision, organization and conduct of preventive and counter-epidemic measures; planning and control of disinfection and pest control measures; planning, control and evaluation of the implementation of compulsory immunizations; provision of microbiological activities of national interest; testing and control of the safety of drinking water, waste water, food and common use objects; and other public health activities requested by the Ministry of Health. The CNIPH operates through a central office in Zagreb and county institutes of public health with their hygiene and epidemiology branch offices in the municipalities. It consists of several departments, including those of Epidemiology, Public Health, Microbiology, Environmental Health, Health Promotion, and Medical Informatics and Biostatistics.

Counties and the city of Zagreb

Local governments own and operate most of the public primary and secondary health care facilities, including general and special hospitals, county health centres, public health institutes and community health institutions (home care and emergency care units). While these facilities receive operating expenditure through their contracts with the CHIF, local authorities are responsible for financing the maintenance of their infrastructure and, increasingly, for capital investments. Under the government's decentralization policy implemented since 2001 (see Section 2.4), local governments have been expected to play an increasing role in the coordination and management of health services at county and municipal levels. In line with this, since 2009, they have been in charge of granting concessions for public health care services at primary level (Bodiroga-Vukobrat, 2011) (see information on private practice in Section 2.8.2).

Professional chambers

Croatia has statutory professional chambers for a number of medical professions (see Section 2.8.3). The chambers are responsible for professional registration and the maintenance of professional standards. All university-educated health professionals and nurses must have membership in one of the chambers. The chambers also provide professional opinions on a variety of issues and advice on the licensing of private practices and the opening and closing of health institutions.

Policy formulation, implementation and evaluation

New reform proposals usually originate at the Ministry of Health. A proposal must be consulted with the relevant stakeholders (e.g. professional chambers, patient associations) or be subjected to a public debate before it is sent to the government and, as a next step, to the Parliament. The Parliament decides whether to accept, amend or reject it. If changes are proposed, the changed proposal could be subjected to a further consultation process – it could be submitted to the Ministry of Health, the relevant stakeholders or to a public debate. When the consultation process is over, the proposal is again sent to the Parliament. Proposals may also come from members of the Parliament – they can be submitted directly to the Parliament, without the initial consultation phase required in the case of proposals submitted by the Ministry.

Once the new proposal is accepted, the Government or the Ministry of Health appoints the bodies or institutions that will be responsible for its implementation. In most cases these are the CNIPH, the CHIF or some other national agency. Evaluation of the policies is mostly done by a working group or similar body appointed by the Ministry of Health, but the evaluation procedures and reporting are not properly developed.

2.4 Decentralization and centralization

During the 1980s, the Croatian health care system was notable for its decentralization in terms of its extent and organization (community management of public services was introduced by the 1974 Constitution; see Section 2.2). Local authorities enjoyed a high level of autonomy and, in line with the socialist ideology, both health workers and users were supposed to participate in the decision-making. In practice, political bodies made the majority of managerial decisions, and there was little, if any, supervision or inspection and little coordination in health care provision.

Since the early 1990s, and especially following independence after the war and the start of economic transition, the entire system of public services underwent a series of radical reforms. There was a general shift towards privatization, but at the same time the State increased its control of public services, including the health sector and its components. The aim of these reforms was to improve the functioning of the system while at the same time maintaining the core principles of universality and solidarity. In 1993, the Health Care Act established the CHIF as the key payer in the system, operating under the supervision of the government. Although the 1993 Act introduced several elements of decentralization (for example, it transferred the ownership of secondary health care institutions (general and special hospitals) and institutes of public health to the counties and enabled privatization of health care provision), it maintained central control over health care through funding and regulation (Džakula, 2005). Tertiary health care facilities, comprising clinical hospitals, clinical hospital centres and national institutes of health, remained State-owned. The majority of primary care physicians' practices were privatized, while those remaining were left under county ownership. Since 1991, Croatia has also witnessed the growth of private secondary health care facilities, mostly specialist clinics (providing outpatient care) (see Chapter 6).

Changes introduced in the 1980s and 1990s had several major shortcomings. Firstly, a substantial proportion of counties lacked the technical competence and administrative and managerial capacity to govern health care institutions that had been transferred into their ownership. Furthermore, although most health care providers were county-owned (health centres, general and special hospitals), they were largely autonomous and operated in an uncoordinated way. This had consequences for both the quality and continuity of care and for the efficiency of service provision (including overlaps and segmentation in service provision, lack of unified procurement, and deficiencies in system-wide human resource planning and management). Secondly, health care financing and the allocation of resources were concentrated at the State level and thus removed from local needs, resulting in growing regional health disparities.

To address these deficiencies, in 2002, a programme called "Healthy Counties" was developed with the aim of developing the management and planning capacities of health care professionals and local authorities (see Section 2.5). All counties and the city of Zagreb had been involved in the programme by the end of 2008. Moreover, the new Health Care Act that entered into force on 1 January 2009 decentralized the system through the introduction of "concessions" (see Section 2.8.2). Concessions allow the counties to play a

more active role in the organization, coordination and management of primary health care, with the aim of better tailoring it to local needs (Vončina et al., 2012).

2.5 Planning

Planning at the central level

The Ministry of Health is responsible for health care planning at the central level. In theory, the National Health Council, set up under the Health Care Act of 1993 (replaced by a new Act in 2008) as an advisory body to the Ministry, should advise on health policy and planning issues but it does not operate in practice. The long-term planning tool of the Ministry is the National Health Strategy. The latest Strategy was published at the end of 2012 and is the third document of this sort in the last 15 years. Its planning period (2012–2020) coincides with key strategic documents of the EU and WHO, such as "Health 2020". The Strategy is the umbrella document determining the context, vision, priorities, goals and key measures in health care in the planning period. Based on this umbrella document, other planning documents are developed.

The National Health Plan (NHP) is the medium-term planning tool. The latest Plan was published in mid-2012 and contains objectives for the next three years. It contains broad tasks and goals for the health care sector, sets priority areas and identifies the health needs of population groups of special interest. It also sets out actors responsible for its implementation, deadlines and benchmarking criteria. As health needs assessment is not well developed, these objectives are based on basic health monitoring and on the existing health care structures. The CNIPH monitors health needs and proposes objectives for the NHP to the Ministry of Health.

Based on the NHP, the Ministry of Health prepares the Plan and Programme of Health Care Measures, with a catalogue of health care goods and services that must be delivered to the Croatian population (e.g. measures and activities in the area of prevention, early detection and control of infectious and chronic diseases) in order to achieve the objectives of the NHP. The latest Plan and Programme of Health Care Measures was published in 2006 and the preparation of a new Plan started in 2013. The Plan is based on the suggestions of the CNIPH and the opinions of the competent chambers.

The CHIF uses the NHP and the Plan and Programme of Health Care Measures to prepare its annual plans for the provision of health care services. Based on these annual plans, it passes regulations on health insurance entitlements and signs contracts with health care providers. Providers contracted by the CHIF operate within the National Health Care Network. The Network was formally introduced in 1993 (although it was established earlier) and is an official planning tool that determines the allocation of health care resources (financial and other, such as infrastructure and human resources) among the counties. The allocation of resources takes into account parameters such as morbidity, mortality, traffic links and demographic characteristics of their respective populations. It is renewed every few years by the Minister of Health (it was renewed in 2002, 2005, 2009 and 2012).

In 2007, Croatia received a loan from the International Bank for Reconstruction and Development (the World Bank) to support the development of strategic planning at the level of the Ministry of Health. The loan supports, or has supported, among others: the development of the Hospital Master Plan (see below); a health human resources strategy (see below); and specific projects in the area of information and communication technology (ICT) aimed at improving health system management and the delivery of health services (see Sections 2.7 and 4.1).

Planning at the county level

At the level of the counties and the city of Zagreb, county institutes of public health collect health statistics and participate in the formulation and implementation of county health programmes for their respective areas. They represent local health priorities but also have to be compatible with the NHP. These programmes were introduced by the "Healthy Counties" programme (see Section 2.4). Counties were enabled (and since 2008 obligated) to create their own county health plans and had to establish health councils as professional advisory bodies. They were also given extra funding from the central level, in addition to the regular health care financing, to cover their priorities (mostly investments). Significant improvements in terms of policy development and needs assessment capacities have been achieved in a third of the counties (Sogorić et al., 2010).

Human resources planning

Although Croatia faces problems with medical professionals, such as a shortage of medical doctors and oversupply (and unemployment) of other health professionals (see Section 4.2), human resources planning is very limited. Limits to the number of training places are defined by the Ministry of Science,

Education and Sport pursuant to the National Plan for Specializations and Sub-specializations, prepared each year by the Ministry of Health, and are mostly based on available capacities. For more information on human resources planning see Section 4.2.

In recognition of the unfavourable human resources trends, the National Health Strategy 2012–2020 stresses the need for strategic planning in the area of human resources. In 2013, a consulting team was contracted by the Ministry of Health to prepare a Strategic Plan for Human Resources Development in Health Care.

Infrastructure/capital planning

Investments in infrastructure are the responsibility of the owners, i.e. central and local authorities. Capital investment decisions regarding the allocation of funding of capital investments are made in their annual budgets and must follow certain criteria (see Section 4.1). Specific investment decisions are made by the governing boards of the health care institutions. There is little strategic investment planning in the health care system and no real assessment of needs or health technology assessment (HTA) is conducted. However, all investments planned by the counties must be approved by the Ministry of Health and the development of strategic planning of health care infrastructure and capital investments is strongly supported by the EU and World Bank loans. The development of a Hospital Master Plan is one of the strategic planning tools that are being developed with the support of these funds. The project is financed by the World Bank and it was launched at the end of 2012 by the Ministry of Health. Its main goal is to determine the future configuration of the hospital system in Croatia (including capacities, network, internal organization, financing, etc.). As of 31 December 2013, the Master Plan was under public debate.

2.6 Intersectorality

Health is influenced by policy decisions in a wide range of sectors. The importance of intersectoral cooperation in the area of health is emphasized in the National Health Strategy 2012–2020, which includes "cooperation with other sectors and the society in general" as one of its priorities (see Section 7.1). Following the European strategy "Health 2020", the National Health Strategy advocates the "health in all policies", "whole-of-government" and "whole-of-society" approaches and enumerates examples of the existing and possible forms of cooperation that should be strengthened and coordinated.

Health is taken into account in both the decision-making process and in policy implementation. Health impact assessment is conducted in cases of reform proposals that may have an effect on the health of the population. The need for intersectoral cooperation in the implementation of legal acts is often explicitly stated in the legal acts themselves. For example, the Environmental Protection Act explicitly calls for the cooperation of the Ministry of Environmental and Nature Protection with other Ministries, including the Ministry of Health, in the development of its key strategic document, the Strategy for Sustainable Development of the Republic of Croatia. Various other strategic documents (e.g. the National Strategy on Protection Against Family Violence 2011–2016, the National Programme for Occupational Health and Safety 2009–2013, the National Mental Health Strategy 2011–2016) call for intersectoral cooperation between actors such as ministries, agencies, institutes, schools, non-governmental organizations (NGOs), civil society organizations, media, etc.

Health inequalities

No specific measures have so far been taken to reduce socioeconomic inequalities in health. However, health inequalities are addressed indirectly or directly in a number of health policy documents, such as the National Health Care Strategy 2012–2020, the Plan for the Development of Public Health 2011–2015 and the National Strategy for Mental Health Care 2011–2016.

2.7 Health information management

2.7.1 Information systems

Information relevant to the health sector is collected and processed by a number of national and special registries. National registries collect data on public health priorities, such as the prevalence/incidence of certain diseases or specific diagnoses and health problems, providing continuous surveillance. Examples of such registries include: the Cancer Registry, Croatia's Disabilities Registry, the Registry of Treated Psychoactive Drug Addicts, Committed Suicides Registry, Psychoses Registry, and the CroDiab, collecting data on the prevalence and incidence of diabetes mellitus and data on key relevant metabolic parameters. There are also registries collecting more specific data, sometimes only on a local level, such as the Zagreb City Acute Myocardial Infarction and Acute Coronary Syndrome Registry.

Reports based on data from all national registries are published annually by the CNIPH in the Croatian Health Service Yearbook and are available on its web site. The reports from the national registries are primarily used for planning and evaluation of health services provision and epidemiological research. The CNIPH also collects central statistics on all causes of deaths in Croatia. Regular morbidity data are available through the reports issued by health care providers (number and types of cases) and the CHIF.

There are also registries collecting information on health care resources. The Registry of Health Professionals maintained by the CNIPH collects basic information on the health care workforce, such as sex, age, place of work, services provided, as well as basic information on health institutions (whether these are owned by the State, counties, privately owned, etc.). Information on the available infrastructure (for example, on the number of beds and facilities) is also collected by the CNIPH and published periodically.

Data for national registries are collected at various levels of care (e.g. primary or inpatient care), depending on the type of registry. The requirements for health care providers to report data (types of data and frequency of reporting) are regulated by the Official Statistics Act of 2003 (and its amendments of 2009 and 2012). For example, all primary care physicians and specialists treating diabetic patients are obligated to report data annually to the Vuk Vrhovac Clinic for Diabetes, Endocrinology and Metabolic Diseases at the Medical Faculty of the University of Zagreb. Despite these legal obligations, there is an ongoing problem of not reporting on time, or not reporting at all, by the responsible subjects.

The use of health data for scientific or any other public analysis (for example, technical accessibility, procedures for data processing, data quality and ethical issues) is still not properly regulated. The results of the Performance Assessment Tool for Quality Improvement in Hospitals (PATH) programme conducted on a voluntary basis in hospitals in 2009 suggested the existence of many problems and limitations in data collection at the hospital level, such as incompatibility of the information technology (IT) systems (see Section 4.1.4), and limitations in their analysis (Bodiroga-Vukobrat, 2012). Overall, there are more than 60 registers in the health care system. However, these registers are neither linked nor standardized and a large number of health reports are still produced by manual data processing (Government of the Republic of Croatia, 2012).

2.7.2 Health technology assessment

The need to establish a HTA body in Croatia was recognized at the national level in the National Health Development Strategy 2006–2011, which called for assuring a "faster and controlled introduction of new technologies in everyday clinical practice". The 2007 Act on Quality of Health and Social Care established the Agency for Quality and Accreditation in Health Care and Social Welfare, with HTA as one of its responsibilities (Agency for Quality and Accreditation in Health Care and Social Welfare, 2012).

Formal activities of the Agency in the field of HTA began in October 2009 within its Department for Development, Research and Health Technology Assessment. In theory, the Department is responsible for establishing a system for the assessment and evaluation of new and existing health technologies, and establishing a database of assessed technologies. However, in practice, the key activity of the Agency is accreditation and quality control of hospitals and there is hardly any activity in the area of HTA. This is because of limited regulation, budget and staff (for example, in 2011, the HTA Department had only one permanent member of staff) (Agency for Quality and Accreditation in Health Care and Social Welfare, 2012). In February 2011, the Agency issued the first Croatian Guideline for HTA Process and Reporting.

Currently, decisions on the pricing and reimbursement of drugs and medical devices are taken by the CHIF. Since early-2013, a group of six experts at the CHIF, who were trained in England, including at the National Institute for Health and Care Excellence (NICE), has started cooperating with the Agency for Quality and Accreditation in Health Care and Social Welfare on preparing HTA reports for the CHIF (Poslovni dnevnik, 2013b).

2.8 Regulation

The Ministry of Health is the main regulatory body for the health care system. It regulates standards of health services; the training of health care professionals; and capital investments in public health care providers. General public health issues, such as food and environment safety, are regulated in cooperation with other Ministries. The regulation of health care financing is coordinated with the Ministry of Finance. Monitoring and enforcement of regulations are often delegated to other bodies, such as the Agency for Medicinal Products and Devices (HALMED) or the Agency for Quality and Accreditation in Health Care and Social Welfare.

2.8.1 Regulation and governance of third-party payers

Mandatory health insurance

The CHIF is the single payer in the MHI system and is overseen by the Governing Council (see Section 2.3). In addition, the Ministry of Health monitors its activities and the State Audit Office performs regular audits. Mandatory health contributions are paid into the single State Treasury account and, as such, constitute the revenues of the State budget. The State is therefore responsible for any deficits incurred by the CHIF. Furthermore, the CHIF collects the complementary VHI premiums, which are then transferred to the State Treasury. Although the State supports supplemental insurance for socially vulnerable groups, it is not responsible for the deficits in the portion of the CHIF's budget related to its complementary insurance activities.

Because there are no explicit positive lists of services and goods covered under the MHI scheme, the CHIF plays a key role in determining which basic health services are purchased and thus covered under the MHI scheme (see Section 3.3). All these decisions are made in cooperation with the Ministry of Health. The CHIF pays for services according to contracts agreed with health care providers. These contracts determine the services to be provided, their scope and quality. Privately owned providers can enter into contracts with the CHIF and become part of the publicly funded system. The CHIF does not differentiate between private and public providers as long as they meet the criteria for participation in the Health Care Network. The Health Insurance Standards adopted by the CHIF's Governing Council in 2010 regulate, among others, the rights of insured persons to drugs and medical devices paid for by the CHIF under the MHI scheme (see also Section 2.8.2 for more information on Health Insurance Standards).

Voluntary health insurance

Provision of VHI, both by the CHIF and private insurers, is regulated by the Voluntary Health Insurance Act of 2006 (and its amendments). The CHIF must keep the funds for supplementary health insurance separate from the MHI funds. All private health insurers must be approved by the Ministry of Health and are supervised by the Croatian Financial Services Supervisory Authority (HANFA). For more information on VHI see Section 3.5.

2.8.2 Regulation and governance of providers

Organization

The key legal acts[3] regulating the organization of health care provision are the Health Care Act of 2008, the Mandatory Health Insurance Act of 2013, the Voluntary Health Insurance Act of 2006, the Act on Safety and Health at Work of 1996, the Act on Institutions of 1993 (non-profit health care institutions), the Companies Act of 2011 (for profit) and the Concessions Act of 2012.

Health care institutions

Several types of health care institution (university hospitals, university hospital centres, national institutes of health, specialist clinical hospitals) can only be established by the Ministry of Health. Counties can establish general and special hospitals (special hospitals may also be established by cities and other legal persons); primary health centres (there must be at least one primary health centre per county and at least three in the city of Zagreb); County Institutes of Emergency Medicine; County Institutes of Public Health; outpatient clinics; spas; health care facilities providing home care; palliative care institutions; and pharmacies[4].

Each institutional health care provider has a Governing Board (composed of representatives of the founders, e.g. a local council in the case of a general hospital, and employees); a director (appointed and dismissed by the Governing Board with the approval of the Minister of Health); and a deputy director – one of whom is required to be a medical doctor with at least five years' clinical experience (directors and deputy directors have an obligation to attend Board meetings but have no right to vote). In addition, each health care institution has an Expert Council, composed of heads of organizational units, which advises on professional and technical issues related to the institution's activities. Expert councils participate in the planning of health care provision and supervise the implementation of clinical standards. Furthermore, all health care institutions must have an Ethics Committee, a Committee for Medicinal Products and a Committee for Quality, functioning as advisory bodies to the director. Hospitals must also have a Committee for Hospital Infections.

The Ministry decides whether a health care institution meets the requirements with respect to premises, staff, and medical and technical equipment. Institutions that meet these criteria are included in the register of health care institutions.

[3] And their amendments.

[4] Clinics, spas, health care facilities providing home care, palliative care institutions and pharmacies can also be established by other legal and natural persons.

Health care companies operating on a for-profit basis are regulated in the same way as all commercial companies. However, the following types of health care institution cannot operate for profit: pharmacies; university hospital centres; clinical hospitals; specialist hospital clinics; general hospitals; medical institutes; and health centres (however, for-profit companies may perform certain health care services performed by these institutions). For-profit companies are strictly prohibited from performing certain services, such as blood and tissue collections, and organ transplantations.

Private practice

The 1993 health reform (Health Care Act and Health Insurance Act) brought about the privatization of primary care provision. Privatization took two basic forms: private practice in privately owned facilities provided by self-employed doctors (contracted by the CHIF and financed mostly through capitation), and private practice in rented offices of county health centres (which used to have salaried employees and were the exclusive providers of primary care services prior to the reform).

The introduction of concessions in 2009, when the new Health Care Act entered into force, was aimed at reforming the existing solution of rental of premises under privileged conditions and privately contracted physicians (Bodiroga-Vukobrat, 2012). A 'concession' in the context of the Croatian health system is a model of public–private partnership (PPP), whereby county governments organize tenders for the provision of primary health care services for the chosen types of primary care specialties, depending on county-specific needs (see also Section 2.4). Concessions may serve as grounds for performing the following types of health care service: family (general) medicine; dental health care; health care services for infants and children of pre-school age and for women; laboratory diagnostics; pharmaceutical services; occupational medicine; and medical care in the home of the patient. Concessions are granted to primary care teams that operate within the National Health Care Network but outside of primary health care centres where doctors work as salaried employees. In 2012, the Health Care Act was amended to apply market prices to health care centre premises rented by private physicians (until then, rental prices were uniform) (Bodiroga-Vukobrat, 2013). Prices of services provided in private practices are regulated by the relevant chambers. At the end of 2012, there were 5792 registered private practice units, including 2460 doctors' offices. Out of these, 74% were in concession (Bodiroga-Vukobrat, 2013).

Privatization of pharmacies started at the end of 1990, when the first legislative act on private ownership within the health care system came into force. In 1996, legislation on the gradual privatization of the existing

State-owned pharmacies was passed, involving leasing a pharmacy to all employed pharmacists who had continually worked in that pharmacy for at least three years (group practice) (Jakševac-Mikša, 2007). The majority of pharmacies in Croatia (66.5%) are privately owned; just over 21% of pharmacies are owned by the counties and the City of Zagreb (Government of the Republic of Croatia, 2012).

Quality

Regulation of quality standards in health care institutions (both public and private) is the responsibility of the Ministry of Health. The key legal act regulating quality is the Act on the Quality of Health and Social Care of 2007 (and its amendments) and the Ordinance on Health Care Quality Standards and their Application adopted in 2011 pursuant to this Act. According to this Ordinance, all health care providers must continuously evaluate and improve the quality of their clinical and non-clinical procedures. The Ordinance establishes the types and frequency of reviews (e.g. a systematic review of the use of antibiotics must be conducted every six months). It defines which performance indicators must be monitored by various types of providers (e.g. hospitals must track waiting times for certain procedures, duration of hospitalizations, unplanned readmissions, survival rates for patients with certain conditions). It also regulates other aspects of health care quality, such as patient and personnel safety, medical documentation, patient rights and experience, personnel satisfaction, infection control, deaths and autopsies, monitoring of drug side-effects and harmful events related to medical products.

The Health Insurance Standards adopted by the CHIF's Governing Council in 2010 regulate standards such as educational requirements for medical staff and the number of people per medical team. The standards are monitored by the Governing Council of the CHIF and by the Ministry of Health. They are amended every year. Teams of health inspectors from the Ministry of Health visit health institutions to monitor whether health care services are provided in accordance with the relevant regulations on organizational and professional standards; inspections are usually carried out following complaints. Inspections may also be carried out by the professional chambers and the sanitary inspection units in the counties.

The Department for Accreditation of the Agency for Quality and Accreditation in Health Care and Social Welfare sets accreditation standards for health care institutions and health care companies and also conducts accreditation assessment and manages accreditation databases. So far, accreditation standards have only been developed for hospitals (the Ordinance

on Accreditation Standards for Hospital Health Care Institutions was issued in 2011). They cover the following areas: quality assurance; hospital governance; staffing requirements; patients' rights; documentation and statistics; health care services (the requirement to have an organized nursing service operating 24/7); hospital infection control; and safety control. These standards are monitored by the Agency's Working Council. Accreditation is voluntary.

Although the introduction and implementation of external evaluation of the quality of health care institutions is proclaimed as one of the goals of the National Health Care Strategy 2012–2020, as of December 2013, no hospital has been accredited (Poslovni dnevnik, 2013a). It was announced that this process will start in 2014. This is mainly because of insufficient staff capacity at the Agency for Quality and Accreditation in Health Care and Social Welfare and insufficient provisions in the labour law and collective agreements for rewarding high quality and sanctioning poor quality of work. Moreover, there seems to be no clear link between the financing of health care institutions and the quality of the care they provide, while accreditation standards are still not validated[5].

There are many quality improvement programmes for health care institutions in Croatia. The most prominent among them is the WHO European Region PATH, launched in Croatia in 2008 and conducted in 2009 in hospitals that have voluntarily decided to be involved. This offers hospitals a comprehensive and standardized tool (a set of indicators) to evaluate their own performance and development of measures for quality improvement.

European centres of reference for patients with rare diseases[6]

There is currently no official strategy or plan in Croatia regarding rare diseases. However, special funding is available for orphan medicinal products; there is a "list of especially expensive drugs" that are eligible for reimbursement; and, since 2008, steps have been taken towards the development of a national plan for rare diseases (e.g. in 2008, the Croatian Society for Rare Diseases was established as part of the Croatian Medical Association and, in 2010, the National Commission for Rare Diseases was set up).

Currently, there is no national registry for rare diseases in Croatia, nor a national committee dedicated to registries for rare disorders (see Section 2.7). However, many patients are registered through three referral centres for rare

[5] Some other health institutions are accredited either by the Croatian Accreditation Agency (CAA) or by international agencies.

[6] Based on the European Union Committee of Experts on Rare Diseases (EUCERD, 2012).

diseases acknowledged by the Ministry of Health (for Birth Defects, Rare Diseases and Metabolic Disorders, and Medical Genetics and Metabolic Diseases in Children).

Since 2006, there is a dedicated Orphanet team in Croatia, currently hosted by the Zagreb University School of Medicine. This team is in charge of collecting data on resources related to rare diseases (specialized clinics, medical laboratories, ongoing research, registries, clinical trials and patient organizations) for entry into the Orphanet database. Apart from the national Orphanet team there are no official information centres on rare diseases in Croatia.

2.8.3 Registration and planning of human resources

All medical professionals in Croatia have to be registered, licensed and relicensed by their respective professional chamber. Eight categories of medical profession are regulated by medical chambers in Croatia: medical doctors; dentists; pharmacists; nurses; midwives; medical biochemists; physical therapists; and other health care professionals (sanitary monitoring staff, radiology technical staff, occupational therapists, medical laboratory staff). The chambers regulate registration, licensing and continuous medical education (CME), controlling whether CME requirements are being met and imposing sanctions if not (see Section 4.2). They also promote professional ethics.

All health care workers and associates[7] are also registered in the Croatian Health Manpower Registry, established in 1991 at the CNIPH. Every health care provider (including private providers) is obligated to submit information on all the health workers it employs, including their name, age, profession, entry or departure from service, and any change of position or professional level. This information is analysed and then published annually by the CNIPH in the Health Service Yearbooks, and special analyses may be performed upon request from different users (e.g. the CHIF, ministries, Parliament). The Registry is an important tool for human resources planning that reveals trends and points to areas where changes may be needed. The main challenges in maintaining the Registry are to keep it up to date, and that health institutions provide the requested data.

[7] The difference between health care workers and health care associates is that the former complete medical school degrees, such as medicine, pharmacy, dentistry and nursing, while the latter complete other (nonmedical) degrees, such as psychology, but are allowed to perform diagnostic and therapeutic procedures and work with patients.

Higher educational institutions and study programmes offered in the Republic of Croatia are subject to a mandatory accreditation procedure. Accreditation applications are submitted to the Ministry of Science, Education and Sport and decisions are taken by an expert commission within the National Council for Higher Education, in collaboration with the Agency for Science and Higher Education.

According to the National Health Care Strategy 2012–2020, the field of nursing education is insufficiently regulated in Croatia, with unclear qualifications and competencies acquired in various existing forms of education. For certain health professions (medical laboratory, medical radiology, environmental and public health, and occupational therapy) there are significant discrepancies when compared to EU countries in terms of educational standards, as well as of vertical and horizontal educational mobility. Namely, due to insufficiently developed or unavailable formal higher education, these health workers improve their competencies only through informal education, or go abroad in order to acquire additional knowledge and skills (Government of the Republic of Croatia, 2012).

2.8.4 Regulation and governance of pharmaceuticals

The key act regulating pharmaceuticals in Croatia is the Act on Drugs of 2013. It regulates issues such as drug production, registration and marketing, labelling, classification, supervision, pharmacovigilance, and so on.

Wholesalers and pharmacies

The HALMED issues licences for the wholesale and retail distribution of medicinal products. The Croatian Chamber of Pharmacists gives an opinion on whether a pharmacy can be established in a given geographical area and the Ministry of Health decides where a pharmacy is to be established. Pharmacies can be owned by individual persons or institutions. Mail order or Internet trading of pharmaceuticals is not permitted, with the exception of non-prescription pharmaceuticals.

Pharmaceutical products

The HALMED, established as an independent agency at the end of 2003 and supervised by the Ministry of Health, is responsible for granting marketing authorizations for medicinal products and homeopathic medicinal products. The official timeline for the Agency to issue marketing authorization approval for a new medicine is 210 days, with an average length of marketing authorization approval procedure, including clock stops, of 365 days. Marketing authorization approvals for medicines already authorized in the EU following

the Centralized or Mutual Recognition Procedure are largely simplified since the implementation of the nCADREAC[8] regulatory procedures as of 10 January 2006. Since Croatia's EU accession, all marketing authorization approvals following the Centralized Procedure in the EU automatically apply to Croatia as well (Innovative Health Initiative, 2012).

The Agency is also responsible for overseeing the quality, efficacy and safety of medicinal products and for monitoring adverse drug reactions (ADRs) and quality defects (of finished products and products in clinical trials). If necessary, it may carry out urgent recall procedures. It also indirectly controls the quality of medicines by issuing manufacturing licences to manufacturers, and granting good manufacturing practice (GMP) and licences for the import and export of medicinal products.

Pharmacovilgilance

According to the Medicinal Products Act of 2008, pharmacovigilance activities are part of the HALMED mandate. Marketing authorization holders are legally required to continuously monitor the safety of their products and to report to the HALMED. There are also laws regarding the monitoring of ADRs in Croatia. All physicians who observe ADRs in patients are required to report them to the HALMED. An official standardized form for reporting ADRs is used in Croatia and information pertaining to ADRs is stored in a national database. Every year, reports on ADRs in Croatia are published by the HALMED.

A number of steps are being considered in order to enhance the pharmacovigilance system. These include: various forms of reporting for patients and health care professionals; the provision of safety information for patients on the HALMED's web site; and strengthening of periodic safety update report (PSUR) and risk minimization plan (RMP) analysis by the HALMED staff (Ministry of Health and Social Welfare, 2011).

Patent protection

Legal provisions granting patents to manufacturers cover pharmaceuticals, laboratory supplies, medical supplies and medical equipment. Intellectual property (IP) rights are managed and enforced by the State Intellectual Property Office. National legislation implements the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) as Croatia is a member of the WTO.

[8] The New Collaboration Agreement between Drug Regulatory Authorities in Central and Eastern European Countries.

Amendments to industrial and IP legislation introduced between 2003 and 2011 harmonized Croatia's IP laws with EU law. The provisions on supplementary protection certificate (SPC) patent protection were introduced by the Patent Law in 2004 and came into force on the day of Croatia's EU entry. Currently, the effective period of market exclusivity in Croatia is six years plus the time it takes to register and market the generic drug – minimum one year but typically one to three years. Three years from the accession of Croatia's EU accession, the data exclusivity period will be extended to eight years (Patent Lawyer Magazine, undated).

Classification of pharmaceuticals and OTC drugs

Prescription pharmaceuticals are classified into the following categories: prescription drugs (Rp), prescription drugs for restricted use, including prescription drugs containing narcotic or psychotropic substances (Rps), and drugs used exclusively in hospital treatment under direct medical supervision. Over-the-counter (OTC) drugs are classified into those that can be sold in pharmacies only (not approved for the general market) (Br) and those that are approved for general sale (e.g. in a supermarket) (Brx).

Advertising

All applicants to the reimbursement lists are obliged to enter into a uniform Agreement on Ethical Promotion of Medicines and risk substantial financial penalties for unethical promotion (Vončina et al., 2012). Direct advertising of prescription medicines to the public is prohibited. The pharmaceutical inspection department of the Ministry of Health supervises adherence of advertising to the national legislation (Ministry of Health and Social Welfare, 2011).

Generic substitution

Substitution of generic equivalents of the same price or lower than paid by the national insurance company at the point of dispensing is allowed in public and private sector facilities but it is not mandatory (Ministry of Health and Social Welfare, 2011). Incentives for generic promotion are not considered necessary since the CHIF pays the reference prices and, as a consequence, most manufacturers lower their prices to avoid co-payments (Vogler et al., 2011).

Clawback systems

In 2009, the CHIF introduced various types of financial risk-sharing agreements, particularly for expensive products, in order to enable market access for new medicines but keep control over expenditure. In the case of innovative medicinal products, the CHIF usually proposes (a) pay-back agreements in order to meet the maximum price requirement, but also (b) cross-product agreements by

which the marketing authorization holder is obliged to decrease the price of another of its products in order to ensure unchanged expenditures for the CHIF (Innovative Health Initiative, 2012).

Cost-effective use of pharmaceuticals

Cost-effective use of pharmaceuticals is strongly supported by the CHIF through its reimbursement lists. All generic drugs approved for reimbursement are automatically included in the basic list of drugs (100% reimbursement). On the other hand, if an original drug has a generic substitute, it will be included in the supplemental list and will only be eligible for a partial reimbursement. Overall, most drugs included in the basic list are generics. Because of differences in reimbursement levels, patients have a financial incentive to purchase generics. For original drugs included in the basic list, there are also clear guidelines on their application (they should be prescribed only for certain conditions and adherence to these guidelines is controlled by the CHIF).

Pricing of prescription pharmaceuticals

In 2009/2010, Croatia reformed its pricing system for medicines. Maximum prices for reimbursed products are determined at the wholesale selling price level (including wholesaler margin of up to 8.5%) by the CHIF and revised annually based on international price referencing. Calculation of the maximum price for the reimbursed product takes into account prices (original products and generics) in five reference countries. The average wholesaler selling price is calculated from the first three reference countries where the price is available (or at least two reference countries) in the given order: Italy, France, Slovenia, Spain and Czech Republic (or Spain and Czech Republic if no reference prices are available in the former) (Innovative Health Initiative, 2012). Specific pricing policies are applied for generics: the first generic available will have the price set at 30% below the original drug and each subsequent generic will be 10% below the previous generic on the Croatian positive list (Vogler et al., 2011).

Public reimbursement of pharmaceuticals

The CHIF decides on the reimbursement of prescription pharmaceuticals. The official timeline for the CHIF to issue a decision on reimbursement is 180 days, with the shortest real length of the procedure being 365 days. The CHIF sets reimbursement limits for most prescription medicines through therapeutic price referencing. Thirty-eight therapeutic groups are established at the 3rd, 4th or 5th Anatomical Therapeutic Chemical (ATC) classification levels and the therapeutic reference price for each product is subsequently determined based

on the price of the cheapest product within the therapeutic group having at least 5% of the market share over a 12-month period (measured in terms of defined daily dose (DDD)) – with the aim of avoiding market shortages.

In 2006, the government introduced internal reference pricing, setting limits to the reimbursement level for all drugs for which lower-priced generic drugs were available on the market. The reference price for all generically equivalent drugs was fixed at a level that the authorities regarded as acceptable. If the price of any product was higher than the reference price, payment or reimbursement would only be granted up to the level set by the government, and the difference would have to be paid by the patient (Vončina et al., 2012).

For new products applying for reimbursement, there are three maximum reimbursement price levels:

- 100% of the average reference price for innovative drugs with a significant impact on recovery and without a pharmacologically similar (at 3rd ATC level) product registered in Croatia;
- 90% of the average reference price for innovative drugs with a pharmacologically similar (at 3rd ATC level) product already reimbursed by the CHIF;
- 65% of average reference price for generics (every newly reimbursed generic 10% below the cheapest reimbursed generic) (Innovative Health Initiative, 2012).

The new Regulation on Reimbursement introduced in 2009 (Official Gazette 155/09) has significantly increased the reimbursement requirements. Transparency, timeliness and methodology of decision-making by the CHIF's Committee for Medicines in the reimbursement procedure have all been improved. The new requirements include:

- budget impact analysis undertaken according to strict criteria that largely adhere to International Society for Pharmacoeconomics and Outcomes Research (ISPOR) principles of good practice for budget impact analysis;
- cost–effectiveness analysis (voluntarily);
- a report of scientific evidence, particularly demonstrating the advantages of the medicinal product for the suggested indication over comparator treatments, mainly over the medicinal products already included in the basic or supplementary reimbursement lists of the CHIF; and
- comparison of the reimbursement status and financing of the product in all EU Member States.

The final decision on granting reimbursement is primarily driven by the impact of inclusion of the new medicine on the CHIF's budget.

Very expensive medicines are financed from funds for especially expensive products (separate CHIF funds that are excluded from hospital budgets). In 2010, the CHIF defined financial limits to the funds that can be spent on especially expensive products within each therapeutic indication and entered into multilateral volume-cap agreements with the marketing authorization holders supplying such expensive products. Any new product proposed for financing from funds for especially expensive products should first be added to the existing volume-cap agreement with a condition that its price is lower than the price of the cheapest product listed in the existing agreement (Innovative Health Initiative, 2012).

2.8.5 Regulation of medical devices and aids

The HALMED is responsible for granting licences for wholesale distribution of medical devices, retail sale in specialized retail shops, and import and export. It also maintains a register of medical device manufacturers and a register of medical devices, analyses and assesses incidents and safety of patients in clinical trials of medical devices and may carry out urgent recall procedures.

Medical devices can be marketed or put into service only if they fulfil the essential requirements that take into account their intended use (with conformity assessment conducted by a laboratory or independent body appointed by the Ministry of Health), bear the marking of conformity with these criteria and have been entered into the register of medical devices.

Importers may supply medical devices only to wholesalers. Wholesale distribution of medical devices may be carried out only by legal persons holding the HALMED's wholesale distribution authorization. Retail sale of medical devices may be carried out by legal and natural persons with authorization to engage in pharmacist activities, as well as specialized retail stores holding authorization for the retail sale of medical devices. Supervision of the implementation of the provisions of the Medical Devices Act of 2013 and the ensuing regulations is carried out through pharmaceutical inspection by the Ministry of Health.

2.8.6 Regulation of capital investment

The amendments to the Health Care Act of 1993 that came into power on 1 July 2001 decentralized the financing of medical institutions: responsibility for the financing of certain health care institutions (general and special hospitals and primary health care centres) was transferred to the counties and the city of Zagreb (i.e. their owners since 1993). The amendments to the Law on Financing of Units of Local Government and Regional Self-Government (Official Gazette 59/01) determined the sources of funds for decentralized capital investment expenses for institutions in the health care sector and the way they are allocated. Decisions on "minimal financial standards for decentralized functions for medical institutions" issued by the Ministry of Health in 2001–2003 enabled the use of decentralized funds for the maintenance of working premises; medical and non-medical equipment and means of transportation in medical institutions; and new investments. The allocation of funds to various decentralized functions, including capital investments, is described in Section 4.1.

2.9 Patient empowerment

2.9.1 Patient information

There is no central web site or other source that provides general health system information, but web sites and helplines of the Ministry of Health, the CHIF, hospitals and other health care institutions, as well as the institutes of public health and NGOs (including patients' associations) provide key information related to publicly funded health care services and rights, including some technical information, such as information on waiting times and available treatments. The availability of such information, especially after the introduction of e-waiting lists and e-ordering (in 2012–2013) has the potential to improve the quality of care. The online system does not yet provide comparative information on providers. The CHIF's new contracting model is focused on monitoring key performance indicators (KPIs) and quality indicators (QI) (see Section 3.7) and it can therefore be expected that more comparisons will be made among the providers in the future, leading to improved quality and user experience.

2.9.2 Patient choice

The CHIF is the only insurer in the MHI system. Patients have no choice of insurer and no choice of statutory benefits package or co-payment level. Every person covered under the MHI scheme has the right to choose their own GP and

dentist. Women above 15 years old can in addition choose their gynaecologist and parents of preschool children choose the paediatrician for their children. The insured have to register with a GP of their choice but may switch to another as often as they wish and at no charge. A GP can be chosen independently of one's place of residence (and the same applies to dentists, gynaecologists and paediatricians). Public health visitors cover a geographical area of about 5000 inhabitants and cannot be chosen. The choice of medical specialist and hospital is not restricted to one's place of residence[9]. Patients also have the right to be informed about alternative treatments and to consent to or refuse treatment, except for urgent cases when the patient's life and health are at risk, or when refusal may endanger the health of other people. Medical treatment in a foreign country (by providers approved by the CHIF) used to be covered only in the case of emergencies and when the necessary services were not available in Croatia. This right was expanded upon Croatia's EU entry (see Section 2.9.6).

2.9.3 Patient rights[10]

The rights of citizens as patients were already guaranteed in the Health Care Act of 1993, soon after the Republic of Croatia gained independence in 1990. The Act provided for a set of rights, including the right to seek protection for patients who considered that their rights had been violated – they could request protective measures from the health care provider and, if unsatisfied with the measures taken, turn to a relevant professional chamber, the Minister of Health or a competent court. Provisions relating to the rights and duties of citizens as patients in the Act on the Protection of Patients' Rights of 2004 (and its most recent version of 2008[11]) are almost identical with those of the 1993 Act.

The Act on the Protection of Persons with Mental Disorders was adopted in 1997. The Act meets the highest international legal standards of the United Nations Principles for the Protection of Persons with Mental Illness and for the Improvement of Mental Health Care of 1991.

In November 2004, the Act on the Protection of Patients' Rights was adopted, mainly to align the national legislation with the 1997 Council of Europe Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine and to apply in

[9] Insured persons are entitled to claim reimbursement of travel expenses if they have received health services at a contracted health facility or physician more than 30 km away from their residence, provided they are not able to obtain the same treatment in the place of their residence.

[10] Based on Babić-Bosanac, Borovečki & Fišter (2008).

[11] Two articles (22 and 23) of the Health Care Act of 2008 define the key rights and duties of citizens with regards to the provision of health services.

more detail the WHO's 1994 Declaration on the Promotion of Patient Rights in Europe. Additional pressure came from NGOs and from media emphasis on frequent violations of patients' rights. The rights guaranteed by the Act are summarized in Table 2.1.

Table 2.1

Rights guaranteed by the 2004 Act on the Protection of Patients' Rights

Right	Content
Right to information	• Right to complete information about the patient's own health, recommended examinations and procedures (including dates, cost coverage, further course of treatment); about the potential benefits or risks of performing or not performing them; and about possible alternatives.
	• Upon verbal request, right to receive information in a way that is comprehensible and appropriate to the patient's age, level of education and mental capacity (also applies to patients with reduced decision-making capacity).
	• Right to seek a second professional opinion about the patient's own health.
	• Upon giving a written and signed statement, right to refuse to receive information about the nature of the patient's health condition and the expected outcome of the medical procedures and measures proposed and/or conducted, except in cases where he/she must be aware of the nature of his/her ailment so as not to endanger the health of other people.
	• Right to appoint another person to receive information on the patient's condition.
Right to accept or refuse specific diagnostic and therapeutic procedures	• Upon giving a written and signed statement, right to consent to or refuse individual diagnostic or therapeutic procedures except in the case of urgent medical intervention when the life and health of the patient would be at risk if the intervention was not preformed (for patients who are unconscious, have severe mental disturbances, do not have the capacity to exercise their rights or are under age, the consent form is signed by their legal representative or guardian, except in cases of urgent medical intervention or procedures).
Right to protection whilst taking part in clinical trials	• Express consent (written and signed) of the informed patient is needed for scientific research on patients and the inclusion of patients in medical teaching.
Right to access to medical information	• Right to examine all medical documentation relating to the diagnostics and treatment of the patient's own illness, including the right to copy the documents at his/her own cost. In the case of a patient's death, in so far as the patient did not directly forbid it by giving a statement before a public notary, the marital or extra-marital partner, adult children, parents, adult siblings, legal representatives or guardians have the right to examine his/her medical records.
Right to confidentiality	• Right to confidentiality of information relating to the condition of the patient's own health in accordance with the Act on Health Care and Act on Patients' Rights on keeping business secrets and the protection of personal data. The patient has the right to decide, by giving a verbal or written statement, who may or may not be informed about his/her health and his/her admittance to hospital.
Right to maintenance of personal contacts	• During their stay in hospital, patients have the right to receive visitors according to the house rules of the health institution and also the right to prohibit visits by a specific person or persons.
Right to leave the health institution voluntarily	• The patient can leave an inpatient health care facility voluntarily, except in cases prescribed by separate laws and in cases where this would harm his/her health or the health and safety of other persons.
Right to compensation for damages	• Right to compensation for damages pursuant to the prescribed civil obligations laws.

Source: Adapted from Babič-Bosanac, Borovečki & Fišter (2008).

Following the provisions of the 2004 Act on the Protection of Patients' Rights, Commissions for the Protection of Patients' Rights have been founded at both county (in every county) and national levels (at the Ministry of Health). The County Commissions monitor violations of individual patients' rights and propose measures to protect and promote patients' rights in the area of the county. The Ministry of Health Commission monitors the implementation of the realization of patients' rights pursuant to this Act and promotes patients' rights in Croatia, including via cooperation with international bodies.

Due to political and legal as well as cultural and social reasons, legislation has still not had a significant effect on the actual position of patients in the Croatian health care system: international legislation was adopted without taking into account the capacity of the Croatian community to implement it (for example, commissions for the protection of persons with mental disorders in psychiatric institutions, foreseen in the 1997 Act on the Protection of Persons with Mental Disorders, were abolished in 1999 since, due to staffing, organizational and financial factors, it was not possible to establish them); the political will to adopt subordinate implementation regulations to apply the existing legislation in practice was lacking; the work of the competent bodies that should ensure the implementation of the existing legislation is not transparent; citizens and health workers are insufficiently informed and educated about the concept of patients' rights and the existing legislation.

All health institutions in Croatia are obligated to enable physical access for disabled people.

2.9.4 Complaints procedures

A patient who considers that one of his/her rights established by the 2004 Act on the Protection of Patients' Rights has been violated may make a verbal or written complaint to the head of the health care institution in which the alleged violation took place. If the head of the health facility does not inform the patient within eight days of measures that have been taken relating to his/her complaint, or if he/she is not satisfied with the measures taken, the patient has the right to submit a complaint to the competent County Commission for the Protection of Patients' Rights. This Commission is obliged to inform the patient, within a maximum of 15 days, of all measures taken in relation to his/her complaint. The County Commission has the right of access to health care facilities and to examine whether the rights of patients are observed. The Commission is obliged to write a report on the inspection it undertakes and must send it to the competent inspector (health or sanitary), within no more than eight days,

or to the body responsible for inspection of the work of health workers, that is the bodies of individual professional chambers. These bodies must report to the Commission within 30 days of receiving the report, and in urgent cases without delay, on the measures undertaken. If the competent body (inspectors or a chamber) has reason to suspect that a petty or criminal offence has been committed, it must submit a complaint within 30 days from the completion of the inspection and inform the Commission of the outcome of the procedure. The latter has eight days to inform the patient (Babić-Bosanac, Borovečki & Fišter, 2008).

Patients who are not satisfied with the measures taken to protect their rights can seek their rights from a relevant professional chamber (which can sanction its members) or from a competent court (which may award financial compensation) but the burden of proof lies on the side of the patient. There is also a free telephone service, *Bijeli telefon* (white phone), which enables patients to elicit their complaints on health workers or any other complaint in relation to realizing their right to health care. This service used to be run by the Ministry of Health but in 2012 it was improved and moved to the CHIF.

There is currently no "no fault" compensation in Croatia.

2.9.5 Public participation

The first patients' rights association in Croatia, the Croatian Association for Patients' Rights, was founded in 1999 and since then a large number of other NGOs have included the issue of the protection of patients' rights in their programmes. They actively participate in public debates, but their formal influence is limited. In addition, patients are represented in the county and Ministry of Health Commissions for the Protection of Patients' Rights. Patient representatives are also members of the governing board of the CHIF and the county health councils.

There are no regular surveys measuring patient satisfaction with the health care system and it is not clear whether those surveys that have been conducted have had any impact on policy-making (see Section 7.3). In order to enhance public participation and improve patient satisfaction, in 2012 and 2013, the Minister of Health held regular meetings with representatives from patients' associations to discuss patient problems and the obstacles encountered by patients in realizing the right to health care. Up to the end of 2013, the Ministry met with 69 patients' associations (Ministry of Health, 2014).

2.9.6 Patients and cross-border health care

Patient mobility, both inward and outward, is not significant in Croatia. Patients coming from abroad to use health care services in Croatia are mainly motivated by lower prices for some services, such as dental care or cosmetic surgery. No records about patients coming from abroad to use health care services in Croatia on an elective basis are maintained; only the use of emergency care is monitored. The CHIF reimburses the use of health care abroad only when the necessary treatment is not available in Croatia.

From 1 July 2013, Croatian patients have been able to use their European Health Insurance Card to access care in providers from other EU countries with which the CHIF has an agreement – not only emergency care but other types of care as well (e.g. dialysis in the case of patients with chronic conditions). The coordination of the social security systems between EU Member States (which replaced bilateral agreements upon Croatia's EU entry) is determined by Regulation (EC) 883/2004 of the European Parliament and Commission for the Coordination of Social Security Systems, and the implementing Regulation 987/2009, which lays down the procedures for implementing Regulation 883/2004. A great challenge for EU Member States is Directive 2011/24/EU on the application of patients' rights in cross-border health care. The Croatian Parliament accepted the Directive in June 2013. While Regulation 883/2004 only determines treatment and reimbursement of expenses to persons in cases of using health care in health care institutions working under a contract with an insurance fund, the Directive expands such rights to treatment provided in the private sector (Government of the Republic of Croatia, 2012).

3. Financing

The proportion of GDP spent on health by the Croatian government has grown steadily since the early 2000s. In 2012, Croatia spent 6.8% of its GDP on health, a share that was smaller than in most western European countries of the WHO European Region. The per capita purchasing power parity (PPP) health expenditure in Croatia, although higher than in most central and south-eastern European countries, was lower than in nearly all western European countries of the WHO European Region.

While the share of public expenditure as a proportion of total health expenditure (THE) decreased between 1995 and 2012, at around 82% of THE, it is still high compared to most countries in the WHO European Region, reflecting the tradition of solidarity in health care financing and the continued importance of health care on the Croatian policy agenda. Out-of-pocket (OOP) payments account for the majority of private expenditure on health.

In 2013, 17.6% of the total State budget was allocated to health care. The majority of the health care budget (over 91%) is allocated to the CHIF to finance goods and services covered within the MHI scheme. The key sources of the CHIF's revenue are: compulsory health insurance contributions, accounting for 76% of the total revenues of the CHIF, and financing from the State budget (15%). It is estimated that only about a third of the population (consisting of the economically active) is liable to pay full health care contributions. Overall, the financing of the MHI system seems to be regressive.

It is important to note that, while the regular health care expenditures within the health care budget are presented transparently, certain health care costs are "hidden" as an unpaid overdue debt (arrears). Since arrears are substantial (they amount to more than 10% of THE) the expenditure data described above do not provide an exact representation of the reality.

All Croatian citizens and residents have the right to health care through the compulsory MHI scheme. Although the breadth and scope of the MHI scheme are broad, patients must contribute to the costs of many goods and services. There are, however, exemptions for vulnerable population groups (e.g. pensioners, the disabled, the unemployed and those on low incomes). Since 2003, a substantial and systematic reduction of the right to free health care services has taken place, through both increasing co-payments for virtually all services and the introduction of rationing of services. Supplemental health insurance is also available, which mainly covers user charges from the MHI system. Certain population groups (e.g. the disabled, organ donors, frequent blood donors, students, people on low incomes) have the right to free supplemental health insurance membership in the CHIF and their respective contributions are financed from the State budget (over 60% of people with supplemental VHI in the CHIF). Croatia also provides one of the most generous sick leave and maternity compensation packages by international standards, and there are indications that the system may be subject to abuse.

Except for pharmaceuticals, no explicit positive lists of services and goods are in place. The CHIF plays a key role in determining which basic health services are covered under the MHI scheme. Health care providers contracted by the CHIF, both private and public, are automatically included in the National Health Care Network.

The CHIF contracts with individual and institutional health care providers for the provision of health care services within the scope of the MHI. A new contracting model is in place for the 2013–2015 period. This was introduced to incentivize health care providers to raise the quality of care and patient satisfaction and to incentivize the provision of certain types of care (e.g. prevention) through a mixture of provider payment mechanisms. As regards paying for hospital care, Croatia uses a modified version of the Australian Refined-DRG (AR-DRG) system, which was fully implemented on 1 January 2009 (replacing fee-for-service payments).

3.1 Health expenditure

In 2012, Croatia spent 6.8% of its GDP on health (Table 3.1). After a decline in 2001 and 2002 following the reforms implemented in 2000 (largely under the influence of the IMF and the World Bank) (Vončina, Džakula & Mastilica, 2007), the proportion of GDP spent on health has grown steadily (Table 3.1 and Fig. 3.1). However, the overall public budget has grown faster than the health spending and, since 2000, health expenditure as a share of GDP has been lower in Croatia than in most comparator countries[1] (Fig. 3.2). This may be partly explained by the fact that the overall public budget grew faster than the health expenditure.

Table 3.1

Trends in health expenditure in Croatia, 1995–2012, selected years

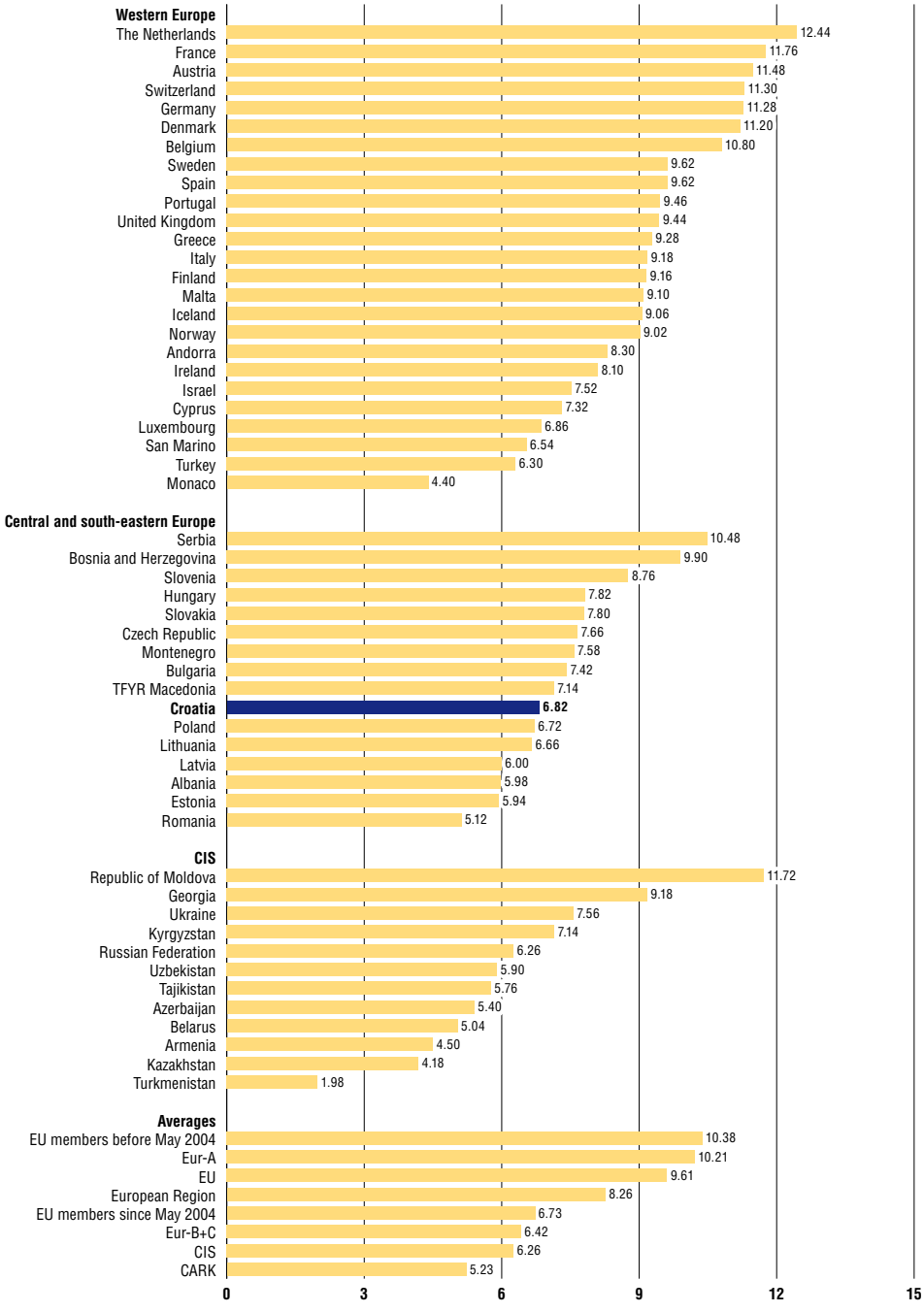
Expenditure	1995	2000	2005	2010	2011	2012
THE as % of GDP	6.9	7.8	7.00	7.82	6.82	6.82
THE in US$ PPP per capita	546.04	847.08	1 071.04	1 461.7	1 361.72	1 409.78
Public sector expenditure on health as % of THE*	86.46	86.14	86.02	84.8	82.5	82.32
Private expenditure on health as % of THE[a]*	13.54	13.86	13.98	15.2	17.5	17.68
OOP payments as % of THE[a]*	13.54	13.86	13.41	14.58	13.75	13.89
OOP payments as % of private expenditure on health*	100	100	95.92	95.92	78.56	78.56
VHI as % of THE[a]*	0.00	0.00	0.57	0.62	3.75	3.79
VHI as % of private expenditure on health[a]*	0	0	4.08	4.08	21.44	21.44

Source: WHO (2014).
Note: [a] Authors' calculations based on other data in Table 3.1; * health expenditure data reported in CNIPH (2014) differ from those reported in Table 3.1. Public sector and private sector expenditures in 2012 accounted for, respectively, 80.96% and 19.94% of THE according to the CNIPH. This is because expenditure on supplemental health insurance in the CHIF is included in the private sector expenditure data of the CNIPH. However, some population groups receive free supplemental insurance cover in the CHIF and their contributions are financed from the State budget (i.e. public expenditure) (see Section 3.3.2). GDP = gross domestic product; OOP = out of pocket; PPP = purchasing power parity; THE = total health expenditure; VHI = voluntary health insurance.

[1] The following countries were chosen as comparator countries: Denmark, Finland, Hungary, Slovakia, Slovenia.

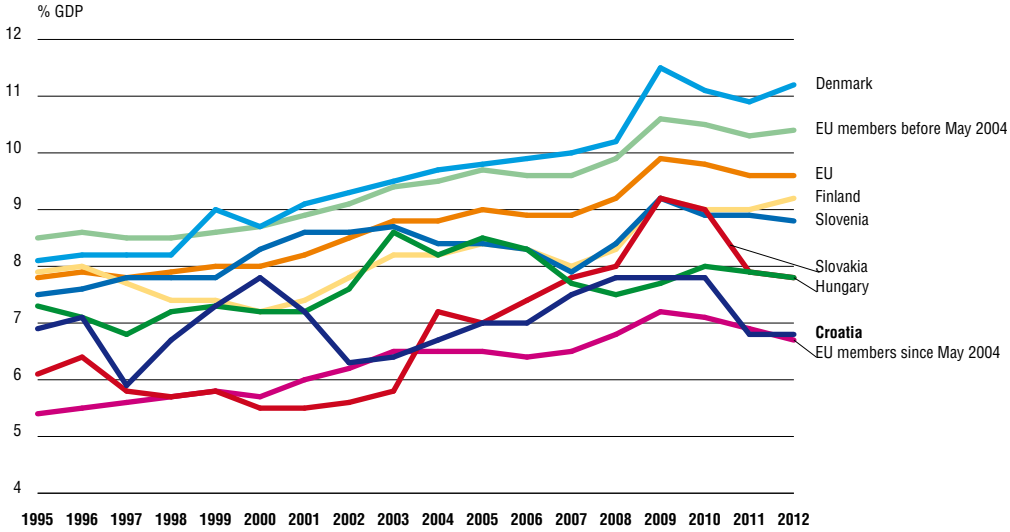
Fig. 3.1

Health expenditure as a share (%) of GDP in the WHO European Region, 2012



Source: WHO (2014).
Notes: European Region: the 53 countries in the WHO European Region; Eur-A: 27 countries in the WHO European Region with very low child and adult mortality (see WHO definition); Eur-B+C: 26 countries in the WHO European Region with higher levels of mortality (see WHO definition).

Fig. 3.2
Trends in health expenditure as a share (%) of GDP in Croatia and selected countries, 1990–2012



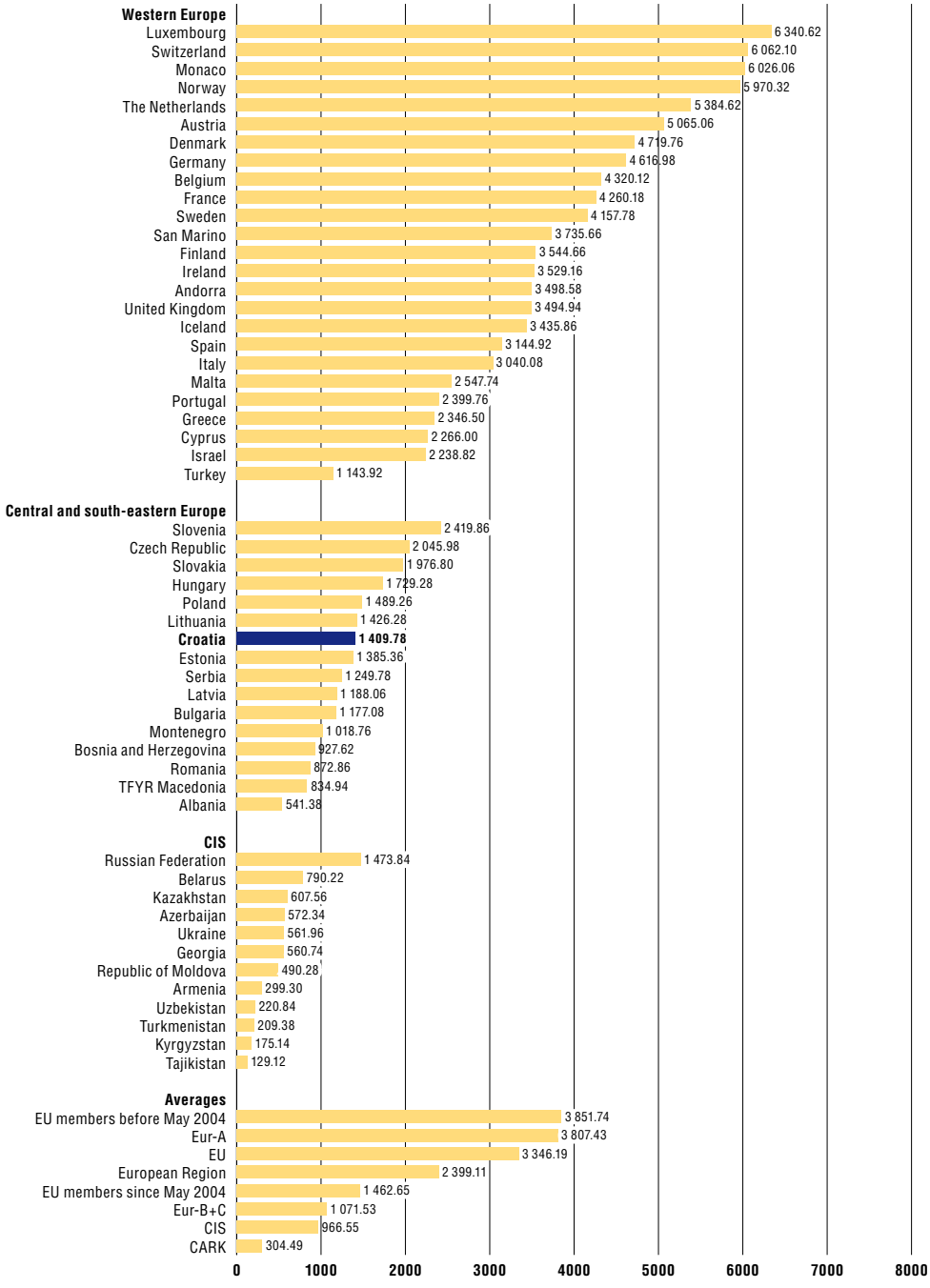
Source: WHO (2014).

In 2012, per capita PPP health expenditure in Croatia, although higher than in most central and south-eastern European countries, was lower than in all but one western European country of the WHO European Region (Turkey) (Fig. 3.3). While the share of public expenditure as a proportion of THE decreased between 1995 and 2012 (Table 3.1), at around 82% of THE, it is still very high compared to other countries in the WHO European Region (public expenditure as a percentage of THE was only higher in San Marino, Denmark, Norway, Czech Republic, Luxembourg and the United Kingdom; Fig. 3.4), reflecting the tradition of solidarity in health care financing and the continued importance of health care on the Croatian policy agenda. However, the role of private financing has increased slightly in recent years to just under 18% of THE in 2012[2], from 13.5% in 1995 (Table 3.1). Out-of-pocket expenditure accounted for all private health spending until the early 2000s as VHI was not available. But even today, OOP payments account for the majority of private health expenditure and constitute the second most important source of health care financing.

[2] This share may be even higher if supplemental insurance in the CHIF is included in the private expenditure data. See notes under Table 3.1 for more information.

Fig. 3.3

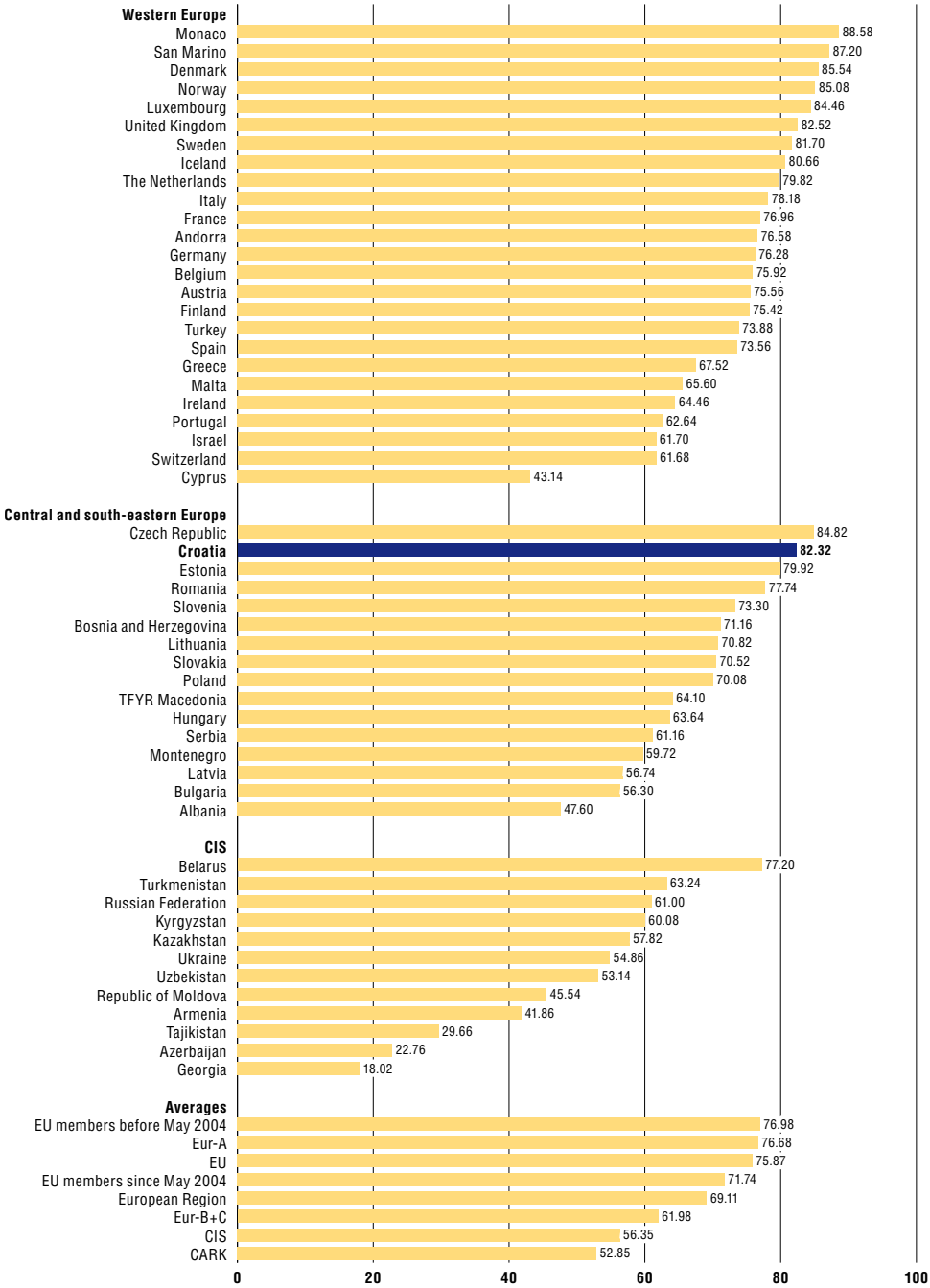
Health expenditure in PPP per capita in the WHO European Region, 2012



Source: WHO (2014).
Notes: European Region: the 53 countries in the WHO European Region; Eur-A: 27 countries in the WHO European Region with very low child and adult mortality (see WHO definition); Eur-B+C: 26 countries in the WHO European Region with higher levels of mortality (see WHO definition).

Fig. 3.4

Health expenditure from public sources as a share (%) of total health expenditure in the WHO European Region, 2012



Source: WHO (2014).
Notes: European Region: the 53 countries in the WHO European Region; Eur-A: 27 countries in the WHO European Region with very low child and adult mortality (see WHO definition); Eur-B+C: 26 countries in the WHO European Region with higher levels of mortality (see WHO definition).

In 2012, the CHIF's expenditure amounted to HRK 22.6 billion (around €3 billion)[3] (CHIF, 2013). It accounts for more than 91% of public health expenditure, while the budget of the Ministry of Health accounts for 8.7% of the total health care budget (see Section 3.3). Most of the CHIF's expenditure is spent on health care goods and services (around 80% on the provision of health care services within the MHI, while supplemental insurance accounts for about 7% of the CHIF's spending), while spending on illness and disability, maternity and other compensations made up almost 11% of CHIF expenditure (CHIF, 2013). These shares have remained fairly stable since 2007. Inpatient care, at approximately 35% of total CHIF expenditure in 2012, accounts for the largest proportion of the CHIF's health care spending, followed by prescription drugs (almost 15%) and primary care (just over 13%) (Table 3.2).

Table 3.2

CHIF expenditures by service programme, % of total CHIF expenditure, 2007–2012

	2007	2008	2009	2010	2011	2012
Primary health care	15.78	14.17	14.85	13.58	13.65	13.14
Emergency care [a]	0.03[d]	0.03[d]	0.03[d]	2.59	2.69	2.98
Hospital/inpatient care	39.7	39.72	38.11	37.93	38.13	35.01
Specialist/outpatient care	3.28	3.00	3.04	3.08	3.14	2.80
Home care	n.a.	0.68	0.67	0.64	0.66	0.62
Early detection of malignant diseases	0.14	0.13	0.11	0.14	0.08	0.06
Drug abuse prevention	n.a.	0.05	0.07	0.07	0.09	0.08
Institutes of public health and other programmes	0.14	0.14	0.12	0.12	0.12	0.12
Vaccines	0.44	0.46	0.46	0.39	0.40	0.30
Prescription drugs	17.08	16.36	14.86	13.05	14.17	14.61
Supplemental insurance	n.a.	n.a.	n.a.	n.a.	4.62	7.12
Other	n.a.	n.a.	n.a.	n.a.	8.44	10.49
Total health care	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**86.19**	**87.33**
Specializations and internships	0.38	0.53	0.49	0.49	0.54	0.45
Other compensations [b]	n.a.	n.a.	n.a.	n.a.	11.55	10.50
Total compensations	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**12.09**	**10.95**
Other expenditure [c]	n.a.	n.a.	n.a.	n.a.	1.72	1.72

Source: CHIF (2008–2013).
Notes: [a] includes patient transport covered by the CHIF; [b] illness and disability, maternity and other compensations; [c] salaries of CHIF employees, material costs, etc.; [d] emergency care on State roads; n.a. = not available.

The budget of the Ministry of Health is mainly used for funding investments (see Section 4.1) and public health programmes.

Some key data limitations have to be noted. While the regular health care expenditures within the health care budget are presented transparently, certain health care costs are "hidden" as arrears (unpaid overdue debt). Since arrears are substantial – they amount to more than 10% of THE – the expenditure

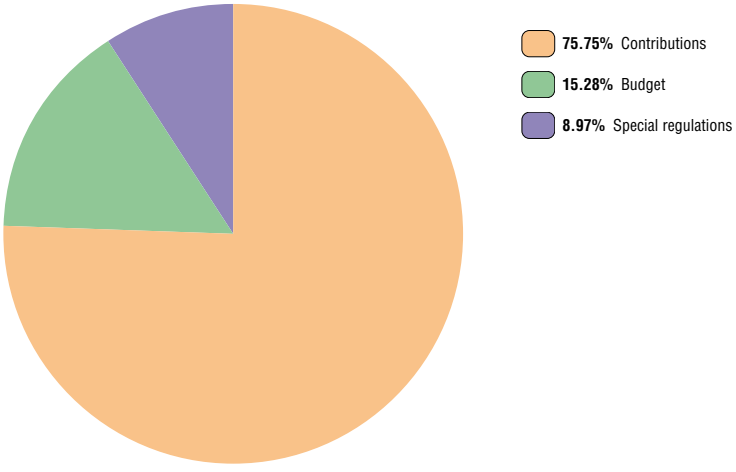
[3] Historical exchange rates used in this HiT profile were taken from www.oanda.com.

data described above do not provide an exact representation of the reality. The consolidation of health care accounts, which started in 2011 and is planned to be concluded in 2014 (see Section 3.3.2), will improve the transparency of health expenditure data. Approximately HRK 3 billion (around €0.4 billion) has been allocated to capital debt repayment in 2013 only.

3.2 Sources of revenues and financial flows

The key sources of the CHIF's revenue are: compulsory health insurance contributions, which account for about 75% of the total revenues, and funding from the State budget (taxation), which accounts for about 15% of the CHIF's revenues (Fig. 3.5). Revenue from compulsory health insurance contributions and from the State budget is used to finance the CHIF's so-called "regular activities", i.e. the financing of health care, compensations and administration of the CHIF. Revenue from the so-called "special regulations", which comprise supplemental health insurance in the CHIF, co-payments from patients who do not have supplemental health insurance, contributions from mandatory automobile insurance and payments from foreign countries (for services rendered to foreign citizens), accounts for around 9% of the CHIF's revenue.

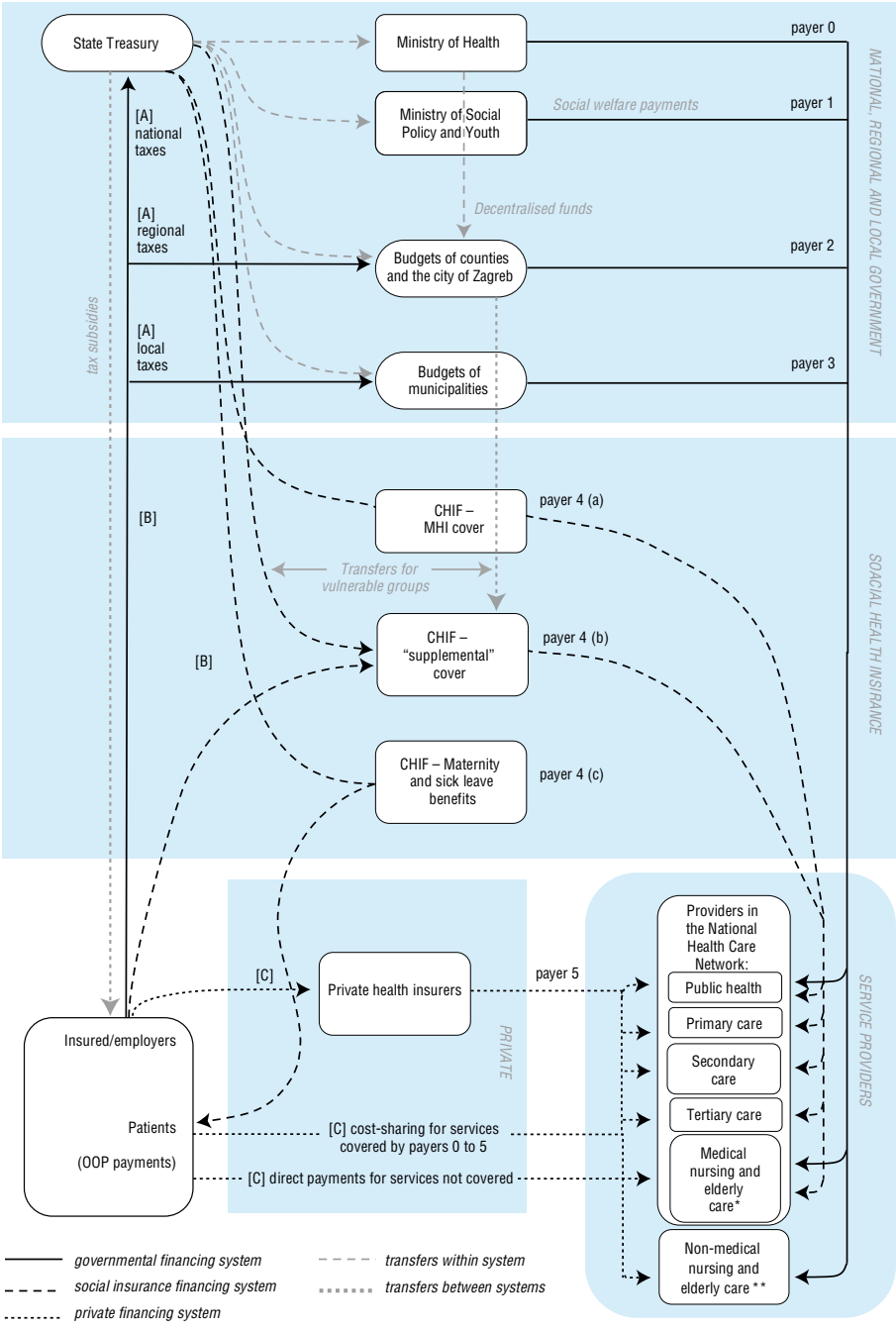
Fig. 3.5
CHIF revenue according to source, 2012



Source: CHIF (2013).

Key financial flows in the health system are presented in Fig. 3.6 (overleaf).

Fig. 3.6
Financial flows



[A] taxes [B] social insurance contributions [C] private payments

Note: *nursing and elderly care provided within the health care sector; **nursing and elderly care provided within social welfare sector.

3.3 Overview of the statutory financing system

Basic health insurance, also known as mandatory health insurance, covers virtually the whole population. Co-payments are applied to certain statutory services within the MHI package. These have either to be paid OOP or covered by complementary health insurance. Certain groups, including people under 18 years old, students, the military, war invalids, the unemployed, the disabled and blood donors (with more than 35 donations for men and 25 donations for women), are exempt from paying co-payments and the CHIF is compensated from the State budget for the amount equivalent to the value of the exemptions.

The Croatian health care system is a mixed system financed from both public (insurance contributions and taxation) and private (OOP payments and VHI) sources. Insurance contributions account for the majority of the funds. These are collected in the State Treasury account. The key contributors are employees, the self-employed and farmers, and only about a third of the population is liable to pay full health care contributions. Certain vulnerable categories of the population are financed from the payroll contributions of contributing members and transfers from the central government budget and county budgets.

The Treasury redistributes the CHIF's funds to providers, according to the contracts signed by the CHIF. The CHIF also collects premiums for complementary VHI, but revenue from these premiums is separate from the MHI revenue. It is planned that, from July 2014, the CHIF will operate separately from the State Treasury (the CHIF was consolidated under the Treasury account in 2002; see Section 2.3) – i.e. the CHIF will have more autonomy.

3.3.1 Coverage

Breadth

According to the Health Care Act, all Croatian citizens have the right to health care. Since 2002, opting out of the MHI scheme, previously allowed for individuals with incomes above a certain threshold, is no longer possible. It was recognized that opting out threatened the long-term financial sustainability of the mandatory scheme as it tended to attract younger and healthier people (Vončina, Džakula & Mastilica, 2007). All persons with residence in Croatia and foreigners with permanent residence permits must be insured in the MHI scheme, unless an international agreement on social insurance states otherwise. Membership is also compulsory for temporary foreign residents (residing in Croatia for more than three months) who are employed by an employer based in Croatia, or employed by an employer based outside Croatia and performing

economic or professional activities in Croatia. Membership in the MHI scheme is a prerequisite for being granted a temporary residence permit in Croatia. Foreigners with temporary residence are required to possess MHI coverage for all family members who are settled with them in Croatia. Insured persons coming from countries that have concluded agreements on social security regulating health care delivery during their stay in Croatia have access to health care services on the basis of the certificate of entitlement issued by the insurance carrier from abroad. Since Croatia's EU accession, this now applies to all EU Member States.

Dependent family members are covered through the contributions made by working family members. Self-employed citizens must pay their own contributions in full. Vulnerable groups, such as old age pensioners, the disabled, the unemployed and low-income earners, are exempt from payment. War veterans and military personnel are also exempt; their MHI coverage is financed from the State Treasury (payroll contributions and general tax revenues) or the Ministry of Defence (in the case of active members of the military forces and other employees of the Ministry of Defence[4]). Insurance contributions for persons under 18 are covered by the State. Students and unemployed persons between 18 and 26 years old are insured through their parents' insurance. In 2012, more than 99.7% of the population had compulsory health insurance (CIHF, 2013). All insured persons are issued an insurance card, which they must show as proof of their insurance status when accessing health care. Their insurance status can also be verified, at the primary care level, through the Central Health Information System of the Republic of Croatia (CEZIH) (see Section 4.1). If a citizen is not formally insured in the CHIF, the latter will limit their coverage to emergency care.

Supplemental health insurance is voluntary and is purchased individually from either the CHIF or a private insurer (see Section 3.5). It mainly covers user charges in the MHI system. However, the following population groups have the right to free supplemental health insurance membership in the CHIF and their respective contributions are financed from the State budget: 100% disabled (physical or mental disability), unable to independently perform age-appropriate activities; human organ donors; blood donors with more than 35 (men) or 25 (women) donations; regular students between 18 and 26 years old; and persons whose total annual income (calculated per family member per month) does not exceed 45.59%[5] of the budgetary salary base defined by the government (the budgetary salary base was about HRK 2000 in 2012 (approximately €265) and HRK 3300 in 2013 (approximately €435)). In 2012, approximately 1.55 million

[4] The Ministry of Defence also covers their supplementary insurance premiums.

[5] Or 58.31% for a one-person household.

people, or more than 35% of the population, had supplemental health insurance with the CHIF, with approximately 61% of them subsidized from the State budget (CHIF, 2013).

Scope

Legal provisions regulating the MHI scheme (the Act on Mandatory Health Insurance) give the insured the right to health care and to compensation. Although the Act (Article 15) mentions broad categories of health care services and medical goods that are covered, and those services are more clearly defined in the Plan and Programme of Health Care Measures (see Section 2.5), no explicit positive lists of services and goods are available apart from for pharmaceuticals (i.e. there is no definition of the basic benefits basket).

As the main purchaser of health services, the CHIF (specifically, its Department of Health Care Contracting) plays a key role in determining which basic health services are covered under the MHI scheme. Decisions are made in cooperation with the Ministry of Health. Although HTA is so far not used in practice (see Section 2.7.2), the HTA Department of the Agency for Quality and Accreditation in Health Care and Social Welfare provides support to the decision-making process. There are two positive lists of pharmaceuticals provided within the statutory system: a basic list (with pharmaceuticals provided free of charge to the patient) and a supplemental list (with pharmaceuticals provided at partial reimbursement). These lists are published by the CHIF and can be updated several times a year. Decisions on the inclusion of drugs and medical appliances in the reimbursement lists are made by the CHIF (Commission for Drugs and Medical Appliances and Department of Drugs and Medical Appliances) and are supported by budget impact analyses, which are usually prepared by the pharmaceutical companies that apply for reimbursement or by consultants contracted by the CHIF.

The following services are excluded from MHI coverage: reconstructive cosmetic surgery, except for aesthetic reconstruction of congenital anomalies, breast reconstruction after mastectomy, cosmetic reconstruction after severe injury; treatment of voluntarily acquired sterility; surgical treatment of obesity, except for cases of morbid obesity; and treatment of medical complications arising from the use of health care beyond care covered under the MHI scheme. Not covered are also the costs of accommodation and meals in hospitals (but there is a cap on all cost-sharing per episode of illness; see *Depth* below).

Croatia continues to provide one of the most generous sick leave and maternity compensation packages by international standards (Vončina, Džakula & Mastilica, 2007). Since the State takes on almost the entire risk of added

labour costs due to illness or maternity, there is little incentive for 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 employers and employees, who may use the sick benefits for other purposes, e.g. in lieu of unemployment benefits. Moreover, this contributed to the CHIF's accumulating net financial losses in all consecutive years between 1998 and 2001 (Vončina, Džakula & Mastilica, 2007). Under the 2002 amendment to the 1993 Health Insurance Act, some modest reductions in the level of compensation were introduced, but the benefits remained essentially unchanged. Recent years have seen slight decreases in the CHIF's spending on maternity and sick leave benefits (CHIF, 2013). As sick leave and maternity benefits are more appropriately regarded as employment rather than health care benefits, their administration is being shifted away from the CHIF, allowing the sick leave benefits to be integrated into labour and social welfare programmes and the CHIF to concentrate on its core functions. This decision was made in 2012, but as of the end of 2013 had still not been implemented.

Depth

Since 2003[6] a substantial and systematic reduction of the right to free health care services has also taken place, both through increasing co-payments[7] to virtually all services provided and through the introduction of the rationing of services (Vončina, Džakula & Mastilica, 2007).

Certain health care goods and services provided to specific population groups are covered in full (100%) by the CHIF. These are: preventive and curative health care services for children, pupils and regular students; orthopaedic devices and other medical aids for children up to 18 years old (as defined in the CHIF's by-laws); preventive and curative health care services for women in the area of family planning, pregnancy monitoring and child delivery; compulsory vaccinations; immunoprophylaxis and chemoprophylaxis; prevention and treatment of infectious diseases; laboratory, radiological and other diagnostic tests within primary care; preventive measures for people aged 65 and older; complete treatment for chronically ill psychiatric patients; complete treatment of patients with malignant diseases; treatment of consequences of professional diseases and injuries; chemotherapy and radiotherapy; organ transplantations; emergency care (medical assistance, dental care, medical transportation); home visits and home care; community health care; sanitary transportation for special categories of patients, for example, the disabled (CHIF, *undated*).

[6] VHI was introduced in 2003.

[7] Co-payments have been in place since the 1990s.

For all other services covered by the MHI scheme, a uniform co-insurance of 20% applies. For certain goods and services, the minimum contribution (as a percentage of the budgetary salary base) is specified (Article 16 of the Mandatory Health Insurance Act); for example, 3.01% of the budget base per day for hospital care (i.e. HRK 100 per day (approximately €13)), 30.07% of the budget base for dental health care (mobile and fixed prosthodontics) of adults aged between 18 and 65 years. There is also a co-payment for all primary care services (HRK 10 per visit (approximately €1) – reduced from HRK 15 on 1 October 2013) and for prescription medicines (currently HRK 10 per prescription – reduced from HRK 15). Drugs on the basic list according to the recommended standard therapy are reimbursed in full. Patient co-payments are applied to drugs on the supplemental list (10% or 35%) (see Section 2.8.4). All drugs provided in hospitals are free of charge. All cost-sharing is capped at HRK 2000 (approximately €264) (reduced from HRK 3000) per episode of illness (CHIF, *undated*). For people who have a VHI policy, all these co-payments, except for co-payments for drugs from the supplemental list (i.e. mostly branded drugs), are covered.

3.3.2 Collection

The shift to collection of all State revenues through a single account (the State Treasury) in 2002 improved the allocation of funds and control over public finances. Prior to that, resources were collected in various public accounts and there was little transparency about the total amount of resources and their distribution, leading to a situation where some parts of the public sector ran deficits, while others accumulated surpluses. The consolidation was also intended to improve the fiscal discipline and debt management of the CHIF, as well as provide greater liquidity for the fund itself, but this has not yet been achieved. Only since 2012, payment deadlines for the CHIF have been shortened and the financial situation of the hospitals and liquidity of the system have started to improve.

In 2013, 17.6% of the total State budget was allocated to health care (Ministry of Finance, 2013). As explained earlier (see Section 3.1), the CHIF accounts for more than 90% of public expenditure on health, with almost 76% of its revenue coming from health insurance contributions and around 15% from the State budget, while the Ministry of Health accounts for around 9% of public expenditure on health.

Taxes account for 60% of the State budget (revenues from value added tax (VAT) and excise duties accounting for approximately 80% of tax revenues or about 50% of the State budget). Contributions (health insurance, social security, labour market contributions) account for 35% of the State budget and other sources (aid money from international organizations and governments, revenue on state property, administrative taxes, donations, revenue from fines) for the remaining 5% (Ministry of Finance, 2013).

Health insurance contributions

Health insurance contribution rates are negotiated between the Ministry of Health, the Ministry of Finance and the CHIF and ratified by the Parliament. The State Treasury collects contributions from:

- employees: 13% of gross salary since 1 May 2012 (down from 15% previously; the aim of this reduction was to increase the competitiveness of the economy) and an additional special contribution of 0.5% of gross salary for injuries and occupational diseases;
- self-employed: 13.5% of gross incomes, including the special contribution for injuries and occupational diseases;
- farmers: 7.5% of a proportion of the average salary in the country (this proportion was 35% in 2013);
- pensioners: 3% of pension income above the average net wage;
- State budget: contributions on behalf of the unemployed (5% of the prescribed base budget); 1% of the health contribution of pensioners if the amount of pension is below the average net wage.

It is estimated that only about a third of the population (consisting of the economically active) is liable to pay the full health care contributions (Table 3.3).

Table 3.3

Composition of persons insured in the CHIF, 2012

	Number of the insured	% of all insured in the CHIF
Active workers	1 471 662	33.78
Active farmers	32 205	0.74
Pensioners	1 047 191	24.04
Insured family members	1 135 747	26.07
Other	669 681	15.37
Total	**4 356 486**	**100%**

Source: CHIF (2013).

As in most other countries with social health insurance systems, the rate of MHI contributions in Croatia is uniform for the working population regardless of their salary (13%). This means that the burden of contributions is proportional to salary incomes. However, as in other countries, MHI contributions in Croatia are applied only to salaries and not to overall incomes. As individuals may possess other non-salary incomes, such as capital gains and rent, the burden of contributions will be lower for richer individuals (Vončina, Džakula & Mastilica, 2007).

Taxation

According to the Mandatory Health Insurance Act (Article 32), 32% of the total revenue from the excise tax on tobacco products and 4% of the insurance premium from compulsory automobile liability insurance are earmarked to cover the cost of care due to traffic accidents. Taxes collected at local levels (county, municipality) include taxes such as income surtax and a municipal real estate tax. Local governments are free to allocate these local revenues according to their priorities.

According to an analysis by Kosi and Bojnec (2009), except for single parents with two children, taxation of wages in Croatia exhibits relatively low tax progressivity. However, since the majority of State budget revenues come from VAT and excise duties, and indirect taxation is usually regressive, it seems that, overall, health care financing from taxation is regressive.

Overall, the financing of the MHI (comprising health insurance contributions and taxation) seems to be regressive (Vončina, Džakula & Mastilica, 2007).

3.3.3 Pooling of funds

The State Treasury both collects and pools health care funds. The Ministry of Health and the Ministry of Finance jointly decide what proportion of the State budget is allocated to health care. The agreed share is then ratified by Parliament and allocated to the CHIF and the Ministry of Health. Within the CHIF, hard budgets are set for drugs, health care goods and services, and compensations. Calculations of these hard budgets are mostly based on previous expenditures.

Some of the Ministry of Health's funds are transferred to the local level (decentralized funds). Allocations are determined within the National Health Care Network (see Section 3.3.4). The key determinants are: morbidity, mortality and demographic characteristics of the county populations (see Section 2.5).

3.3.4 Purchasing and purchaser–provider relations

Health care providers contracted by the CHIF, both private and public, belong to the National Health Care Network[8]. Every three years (or more often, e.g. every year recently) the CHIF conducts a competition for contracts with individual and institutional health care providers for the provision of health care services within the scope of the MHI. The CHIF pays for health care services according to the agreed contracts. These contracts specify which services are to be provided, their scope and quality, requirements for cost accounting and payment terms (fixed and variable components). Contracts are designed in conformity with the guidelines set in the government's National Health Plan (see Section 2.5).

During the contract period, the CHIF supervises the execution of contractual obligations of health care institutions, private medical professionals and contracting suppliers of pharmaceuticals and medical aids. Both financial and medical (e.g. the scope of services provided, adherence to clinical guidelines when prescribing therapy) aspects of contracts are monitored.

3.4 Out-of-pocket payments

OOP payments account for the majority of all private health expenditure in Croatia (Table 3.1). They include payments for health care services provided by private providers (not contracted by the CHIF) and payments from patients who do not have complementary VHI cover for services that are not fully covered or not covered at all by compulsory health insurance (provided by providers contracted by the CHIF).

3.4.1 Cost-sharing (user charges)

User charges have explicit objectives to raise revenues for the CHIF. Decisions on cost-sharing are taken by the CHIF (Department of Health Care Contracting and Department of Finance and Accounting). Direct methods of cost-sharing include co-insurance and co-payments (for primary care services and prescriptions) (see Section 3.3.1). Indirect methods of cost-sharing include reference pricing for pharmaceuticals (see Section 2.8.4).

[8] The Network does not list the names of health care institutions, with the exception of hospitals, outpatient clinics and institutes of public health, but rather the required number of primary care teams (i.e. teams consisting of one medical doctor and one nurse) in the Network. A health care provider becomes part of the Network upon the signing of a contract with the CHIF.

3.4.2 Direct payments

No data are available on the extent of direct payments for goods and services that are not covered by the MHI scheme or by the supplemental insurance scheme of the CHIF.

3.4.3 Informal payments

Although informal payments are illegal and thus not shown in THE data, there is some evidence of their existence in Croatia (Mastilica and Božikov, 1999), as in some other countries in central and eastern Europe (Lewis, 2010). According to a recent EBRD study (EBRD, 2011), although perceived necessity for unofficial payments or gifts for public services is relatively low in Croatia compared to other transition countries, corruption in health care remains relatively high: 15% of the respondents reported having to make irregular payments to get a necessary service. According to a United Nations Office on Drugs and Crime (UNODC) study (UNODC, 2011), the highest percentage of bribe-payers gave bribes to doctors (56%) and nurses (36%). The main reasons for getting involved in bribery are to receive better treatment and/or speed up procedures or avoid long waiting times (UNODC, 2011; Bodiroga-Vukobrat, 2012).

3.5 Voluntary health insurance

3.5.1 Market role and size

Provision of VHI is regulated by the Voluntary Health Insurance Act of 2006 (see Section 2.8.1). There are two types of VHI scheme in Croatia: complementary VHI covering user charges in the MHI scheme (in Croatia called supplemental insurance); and supplementary VHI covering a higher standard of care (called additional insurance). Substitutive VHI for people not insured in the MHI scheme (called private insurance) is available in theory but not offered in practice.

Supplemental health insurance may be provided by the CHIF or by private insurers. While everybody may purchase supplemental insurance from private insurers, only persons who have membership in the MHI scheme are entitled to purchase supplemental VHI cover from the CHIF. Additional and substitutive covers are provided by private insurance companies (the 2010 amendment of the Voluntary Health Insurance Act gave the CHIF the possibility of offering additional VHI cover but the CHIF has not yet entered this market). VHI plays

a small role in financing health care in Croatia, accounting for less than 4% of THE. The prohibition of opting out from the MHI scheme in 2002 constrained the activity of private insurers when VHI was introduced in 2003.

3.5.2 Market structure

VHI plans are offered by six commercial insurers (supplementary and complementary plans) and the CHIF (complementary plans only). The CHIF dominates the VHI market and covers over 2.5 million people out of the total number of 4.3 million people covered under the mandatory scheme (Sagan and Thomson, *forthcoming*). It is not known how many people purchase VHI from private health insurers.

Complementary VHI plans cover all patient co-payments. Supplementary VHI plans provide services targeted at active people in good health (they cover preventive systematic and cardiovascular examinations; direct access to specialists, diagnostic imaging, laboratory tests and physiotherapy; a better standard of hospital accommodation). Supplementary group plans are available to employees at the managerial level (anti-stress programmes, preventive cardiovascular examinations). No VHI plan provides better or faster access to sophisticated therapies needed in case of serious illnesses, for example, oncologic or other major surgery (Sagan and Thomson, *forthcoming*).

3.5.3 Market conduct

The key difference between supplemental VHI cover offered by the CHIF and by private providers is that the CHIF's premiums are community rated, while premiums charged by private insurers are usually age-dependent. Most contracts for supplemental VHI (both with the CHIF and with private insurers) are signed for one year. Benefits are usually provided in cash, i.e. members have to pay for services upfront and are reimbursed after sending receipts to the insurer.

3.5.4 Public policy

Certain population groups have the right to have their supplemental VHI cover in the CHIF covered by the State (see Section 3.3.1). The 2010 Amendment of the Voluntary Health Insurance Act deprived many people of State coverage of supplemental insurance. In 2012, the number of persons covered by supplemental insurance with the premiums paid for by the State was 2.36 million, compared to 2.48 million in 2011 and 2.67 million in 2010 (CHIF, 2011,

2012, 2013). Since 2011, complementary (supplemental) and supplementary health insurance premiums are no longer tax-deductible (tax deduction of premiums was introduced in 2001).

The CHIF enjoys a privileged position in the VHI market: it does not need to have a special company selling supplemental policies; it does not come under the supervision of the HANFA as other insurers do; and it does not have to follow other strict rules (i.e. regarding technical reserves, share capital, mandatory audit, solvency rules, etc.) applying to other insurers (Bodiroga-Vukobrat, 2013).

3.6 Other financing

Other key sources of health care financing in Croatia are funds provided by the World Bank and the EU. Since 1993, when Croatia joined the World Bank, the Bank has provided it with financial support, technical assistance, policy advice and analytical services. The World Bank has been actively involved in health sector reforms and has provided assistance through its country-specific analytical studies and investment lending.

Croatia's preparations for EU accession opened up possibilities for receiving support from EU funds, including for projects in the health care sector. Examples of projects funded by the EU are the epSOS project (European Patient Smart Open Service) for the implementation of Patient Summary (see www.epsos.eu for more information), the mHealth project (provision of medical services through the use of portable devices) and Instruments for Pre-Accession (IPA) funds for 2007–2011 (in the area of health and safety at work). Since the accession, Croatia can tap into post-accession funding.

The amount of health financing provided by other sources of funding, such as philanthropic charitable organizations, is negligible. The activities of such organizations focus on supporting the civil society (patient-centred NGOs) and on developing humanitarian programmes.

3.7 Payment mechanisms

3.7.1 Paying for health services

Public health services
Public health services provided by the county public health institutes (e.g. epidemiology) are financed from the CHIF's budget. Other public health services (e.g. services provided within public health programmes) are financed mainly from the State and county budgets and paid for depending on activity or programme. Some services are charged directly to users (see Section 3.7.2).

Primary/ambulatory care
Payments for primary/ambulatory care amount both to reimbursement for services and to the income of the individual delivering the service.

The reform of primary care in 2008 entailed a change in the primary care provider payment mechanism. Until 2008, primary care doctors received capitation payments per patient. Since then, GPs have been remunerated via a combination of capitation (80% of their revenues) and activity-based payments (fee for service; FFS) (20%). The activity-based payments were introduced to increase the provision of preventive medicine and to incentivize the opening of family medicine centres on a 24/7 basis.

On 1 April 2013, a new payment model was put in place for the 2013–2015 period, with the share of activity-based payments increased to 30% and with performance being monitored and evaluated by the use of performance and quality indicators (KPIs and QIs). The goals were to incentivize health care providers to increase the provision of certain types of care (e.g. preventive care) and to increase quality of care and patient satisfaction. GPs may also receive bonus payments (the so-called "five star" model) of up to an additional 30% as part of the variable portion of remuneration, depending on their KPIs and QIs. This model is meant to incentivize primary care physicians to provide additional services for insured persons, such as the provision of phone consultations, e-scheduling of appointments, e-ordering and other e-health services (Bodiroga-Vukobrat, 2013).

Specialized ambulatory/inpatient care
Hospital services provided by hospitals that belong to the National Health Care Network (i.e. that are contracted by the CHIF) are paid for through a comprehensive prospective case-adjusted payment system based on DRGs; hospitals outside the Health Care Network set their own fee schedules. Croatia uses a modified version of the Australian Refined-DRG system (version 5.1),

known in Croatia under the abbreviation DTS (in Croatian: *Dijagnostičko terapijske skupine*). The DTS payment system was fully implemented on 1 January 2009 (replacing FFS payments). Parameters related to the DTS payment system (such as length of stay or cost per DRG) have since then been published monthly for all hospitals on the CHIF's web site, enabling benchmarking. The main goals behind introducing the DTS payment system were cost reduction and rationalization of resources, as well as improvement of certain performance indicators such as shortening hospitalization time (average length of stay (ALOS) per hospitalization) and thus achieving higher patient turnover and reduced waiting times for certain procedures.

The new payment system introduced on 1 April 2013 (see above) will also be applied to specialized ambulatory and inpatient care. However, at the time of writing (31 December 2013) the implementation has not yet started.

According to a report on the financial audit of 30 hospitals (seven state-owned clinical hospitals, one clinical hospital owned by the City of Zagreb and 22 county-owned hospitals) published in 2013 by the State Audit Office, all of the audited hospitals had a weak financial position. Their total deficit amounted to HRK 385 million (approximately €51 million). According to Dr Maja Vehovec from the Economic Institute Zagreb, cited in Bodiroga-Vukobrat (2013), this deficit is caused by the model of financing based on monthly hospital limits set by the CHIF (90% of the hospital budgets are dependent on the CHIF). Since limit categories and the setting of limits are not transparent, hospitals are bound to realize a loss. They cannot know in advance how many patients, and with what diagnoses, to expect but they have to keep on sending the bills for services provided to the CHIF, even though they will be financially covered only up to the limit set by the CHIF. As a result, hospitals try to improve their financial status and increase limits by charging more and more services; meanwhile the CHIF decreases the limits assuming that the hospitals have indeed increased the limits. In addition, physicians in hospitals are still inaccurately applying the DTS system, which results in increased costs.

Pharmaceutical care

Pharmaceuticals prescribed at the primary care level are either partly or fully reimbursed by the CHIF, depending on whether they are included on the basic or the supplemental list (see Section 3.3). The cost of pharmaceuticals administered in hospitals are included in the DTS payments or, in certain cases, covered from separate CHIF funds for very expensive medicines.

Table 3.4
Provider payment mechanisms

Provider	Payment type
Public health services	S/C/FFS
GPs	C/FFS/P4P
Ambulatory care	C (primary care); FFS (specialized care)
Acute hospitals	DRG
Other hospitals	PD (chronic care)
Hospital outpatient	FFS
Dentists	C/FFS (with CHIF contract); FFS (without CHIF contract)
Pharmacies	FFS

Notes: C = capitation; CHIF = Croatian Health Insuance Fund; DRG = diagnosis related group; FFS = fee for service; GP = general practitioner; P4P = pay for performance; PD = per diem; S = salary.

3.7.2 Paying health workers

Public health workers
Personnel working in county public health institutes are paid a salary. Compulsory immunizations are usually carried out by primary care doctors and school medicine services and are paid by way of capitation. Some services, such as educating employers on preventive health measures and the monitoring of environmental safety standards and food safety, are paid on a FFS basis and charged directly to users.

Primary/ambulatory care workers
Payments for primary/ambulatory care amount both to reimbursement for services and to the income of the individual delivering the service (for more information see Section 3.7.1).

Specialized ambulatory/inpatient care workers
Doctors and other health workers working in public hospitals (university hospitals and clinical centres and county hospitals) earn a salary. In 2011, the unions representing doctors in hospitals signed a collective agreement with the Government on the calculation of supplements to salaries for on-call duty and readiness (Bodiroga-Vukobrat, 2013). This agreement was cancelled in mid-2013 and, following a strike, is currently being renegotiated (as of December 2013).

Pharmacists
Pharmacists employed in pharmacies receive a salary. Owners of private pharmacies earn incomes related to the profits.

4. Physical and human resources

In 2012, there were 76 hospital institutions and treatment centres in Croatia. The majority of these were owned either by the State or by the counties, with only nine hospitals and five sanatoriums privately owned. The largest number of hospitals and hospital beds is located in continental Croatia, mainly in the city of Zagreb. Both the counties and the State are responsible for funding capital investments in the facilities they own, although investments are largely uncoordinated and lack strategic planning, and no real assessment of needs and HTA are conducted. The technical condition of hospitals varies and information in this area is scarce. A Hospital Master Plan project (funded by the World Bank) aims to determine the future configuration of the hospital system in Croatia (including capacities, network, internal organization, financing, etc.) and was under public debate at the time of writing.

The number of acute beds in Croatia fell by around 11% between 1995 and 2011, and the number of acute beds per 100 000 population, at 351 in 2011, was lower in Croatia than the EU27 average of 383. At the same time, the average length of stay and bed occupancy rates in acute hospitals in Croatia are generally significantly higher than the respective indicators in some of the comparator countries, such as Slovenia and Hungary, as well as in other EU countries. The introduction of the DRG system seems to have been successful in further decreasing the length of stay in both university and general hospitals.

Data on the exact number of nursing and elderly home beds are not available, but according to a recent analysis, homes for the elderly and infirm persons operate at close to maximum capacity.

The use of IT in health care is increasing, at both primary and secondary care levels. Since 2001, Croatia has been developing an e-health information system, with its aims being interoperability between the IT systems of health care providers, the CHIF and public health bodies, and the provision of real-time

data on each patient and provider. Although integration of IT in primary health care has been completed, 80% of hospitals still have independent IT systems that are not fully integrated into the national hospital information systems.

The number of physicians per 100 000 inhabitants increased from around 212 in 1990 to 299.4 in 2011, but this is still substantially lower than the EU27 average of 346. There is a perceived shortage of physicians, especially in family medicine, and shortages are also observed in rural areas and on the islands. The number of nurses per 100 000 inhabitants in Croatia in 2011 was 579, well below the EU average of 836, and the ratio of nurses to physicians, at approximately 2:1 in Croatia, was lower than the same ratio in the EU15 (2.3:1). Nevertheless, unemployment was recorded among this category of medical professionals. An increase in migration of health workers to other EU countries was expected after Croatia's EU entry. This related particularly to nurses, due to the lack of employment opportunities in Croatia. At the time of writing, no information on the actual trends was available.

4.1 Physical resources

4.1.1 Capital stock and investments

Current capital stock

In 2012, there were 76 hospital institutions and treatment centres in Croatia: five clinical hospital centres (two in Zagreb, and one each in Rijeka, Split and Osijek), three clinical hospitals, five clinics, 22 general hospitals, 34 special hospitals and treatment centres, and seven health resorts. The majority of hospital institutions and treatment centres were either owned by the State or by the counties; only nine hospitals and five sanatoriums were privately owned (CNIPH, 2013).

According to estimates, less than 10% of the Croatian population lived more than 40 km away by air from the closest hospital in 2005 (Ministry of Health, 2006). The average distance from one hospital to another in Croatia is 36 km, whereas the European standard is 77 km (Bodiroga-Vukobrat, 2010). However, large disparities exist in the regional distribution of health care institutions and, in some areas, such as southern Dalmatia, access may be more difficult. The largest number of hospitals and hospital beds is located in continental Croatia, mainly in the city of Zagreb, where there are 6878 hospital beds (27.2% of the total) (CNIPH, 2013).

Geographical distribution of various types of care, in terms of the number of beds per 1000 inhabitants, reveals large disparities (Table 4.1).

Table 4.1

Number of beds per 1000 inhabitants, by county, 2012

	Total	Acute patient treatment	Subacute and chronic patient treatment	General hospital infirmaries and outpatient maternity wards	Clinical teaching hospitals, clinical hospitals and clinics	Special hospitals and natural spas
Croatia	**5.89**	**3.97**	**1.92**	**1.65**	**2.33**	**1.92**
City of Zagreb	8.67	6.91	1.77	0	7.62	1.05
Zagrebačka	0.78	0.20	0.58	0	0	0.78
Krapinsko-zagorska	9.18	3.25	5.92	1.92	0	7.25
Sisačko-moslavačka	7.69	4.11	3.58	2.65	0	5.04
Karlovačka	5.51	4.27	1.24	4.27	0	1.24
Varaždinska	11.37	3.11	8.26	2.77	0	8.60
Koprivničko-križevačka	3.49	3.49	0	3.3.49	0	0
Bjelovarsko-bilogorska	5.01	2.971	2.30	2.71	0	2.30
Primorsko-goranska	8.63	4.48	4.15	0.05	4.36	4.22
Ličko-senjska	2.72	2.72	0	2.72	0	0
Virovitičko-podravska	3.55	3.55	0	3.55	0	0
Požeško-slavonska	8.24	5.07	3.17	5.07	0	3.17
Brodsko-posavska	5.68	4.77	0.90	4.77	0	0.90
Zadarska	6.57	3.12	3.46	2.68	0	3.71
Osječko-baranjska	4.64	4.31	0.33	0.51	3.80	0.33
Šibensko-kninska	4.09	3.36	0.73	4.09	0	0
Vukovarsko-srijemska	3.27	3.27	0	3.27	0	0
Splitsko-dalmatinska	4.41	3.42	0.99	0.09	3.31	1.01
Istarska	4.03	2.74	1.30	2.74	0	1.30
Dubrovačko-neretvanska	4.78	2.74	2.04	2.74	0	2.04
Međimurska	3.07	3.07	0	3.07	0	0

Source: CNIPH (2013).

In 2011, a property condition survey was conducted in 55 public hospitals and health resorts in Croatia (10 clinical hospitals, 22 general hospitals, 21 specialist hospitals and two health resorts). According to the survey results,

which were reported in the National Health Care Strategy 2012–2020, specialist hospitals and health resorts had the best bathroom facilities as the majority of their rooms had sanitary blocks. Access for the disabled was available for an average of 80% of basic activities at the hospital and it was better in general hospitals (84%) compared to clinical hospitals (70%). About 40% of operation rooms have not been renovated since 2000 (Government of the Republic of Croatia, 2012).

Although a quality control structure has been established in most hospitals (assistant director for quality, quality unit, quality committee), implementation tends to be weak or uneven. At the level of primary health care, there are no clear standards for office equipment. In general, standards and norms (concerning time, staff, number and duration of tests, space and location) are not always feasible in practice and some are obsolete. There is no predetermined set of QIs that must be systematically and continuously collected on all levels of health care, and those indicators that do exist indicate uneven quality in different health care institutions (see Sections 2.7 and 2.8).

Investment funding

The war precipitated changes in legislation that prohibited the amortization of long-term property of medical institutions in accordance with the Regulation on Bookkeeping and Account Planning for Non-profit Organizations (Official Gazette 20/94). This had a strong influence on all investments in health care up to the end of 2001. The legislative changes had effectively prevented medical institutions from ensuring that necessary investments were made in the maintenance of working premises and medical equipment, and also inhibited the acquisition of new equipment and facilities. All investments were funded from the budgets of the CHIF and the Ministry of Health. The amendments to the Health Insurance Act that came into power on 1 July 2001 decentralized the financing of medical institutions, shifting the responsibility for the financing of investments in certain health care institutions to the counties and the city of Zagreb (see Sections 2.4 and 2.8), with the State retaining responsibility for the financing of investment in clinical hospitals and clinical hospital centres.

The State allocates 2.5% of its income tax revenues to investment funding, for both the institutions owned by the Ministry and for allocation to the counties (the so-called "decentralized funds"). If those funds are insufficient to cover the yearly determined obligations, the shortfall in financing is covered from the State budget, with the aim of preserving equity between the worse-off and better-off counties. Allocations depend on the size of the counties' respective populations, and the number of facilities and beds (criteria are set out in the

Decision on Minimal Financial Standards for Decentralized Functions of Health Institutions (Official Gazette 114/05)). However, the effectiveness of this measure may be disputed as the allocation does not take into account morbidity and mortality data, demographic structure, and so on. The counties then decide how to divide the funds among the medical institutions in their geographical areas; however, they have to take into account criteria set out in the Ministry's decision and the Ministry also approves the allocations. Funds from the county budgets may additionally be used for further capital investments in county-owned hospitals. If they are unable to meet these requirements from their tax revenues, central government may cover the shortfalls in funding.

The CHIF may also allocate some funds for investments in infrastructure and technical equipment, but these amounts are marginal. For example, in 2012, it spent HRK 34 311 768 (approximately €0.1 million), or 0.15% of its total expenditure, on capital investments in publicly owned health care facilities, mainly on IT infrastructure (CHIF, 2013).

Public–private partnerships in health care are still quite rare in Croatia. The first PPP project was launched for the reconstruction and extension of the current Department of Forensic Psychiatry at the Neuropsychiatric Hospital "Dr Ivan Barbot". The agreement was signed in February 2013 between the hospital, the Ministry of Health, the Sisačko-Moslavačka county and the Centre for Monitoring of the Energy Sector and Investments. The Ministry of Health provides 90% of financing and the Sisačko-Moslavačka county the remaining 10%. The private partner will be selected through a tendering process (Sisačko-Moslavačka County, 2013).

4.1.2 Infrastructure

Acute beds

The number of acute beds in Croatia fell by around 11% between 1995 and 2011 (WHO, 2014) and the number of acute beds per 100 000 population, at 351 in 2011, was lower in Croatia than the EU27 average (383) (Fig. 4.1). This trend can be explained by the reforms introduced since the early 1990s, such as changes in the financing of hospitals (see Section 3.7), and by a more efficient use of physical resources.

The number of beds per 1000 population in hospital-type facilities by specialty in 2012 was highest for physical medicine and rehabilitation in specialty hospitals and spas (with 0.97 beds per 1000 people), followed by internal medicine (0.94 beds) and surgery (0.71 beds) (Table 4.2).

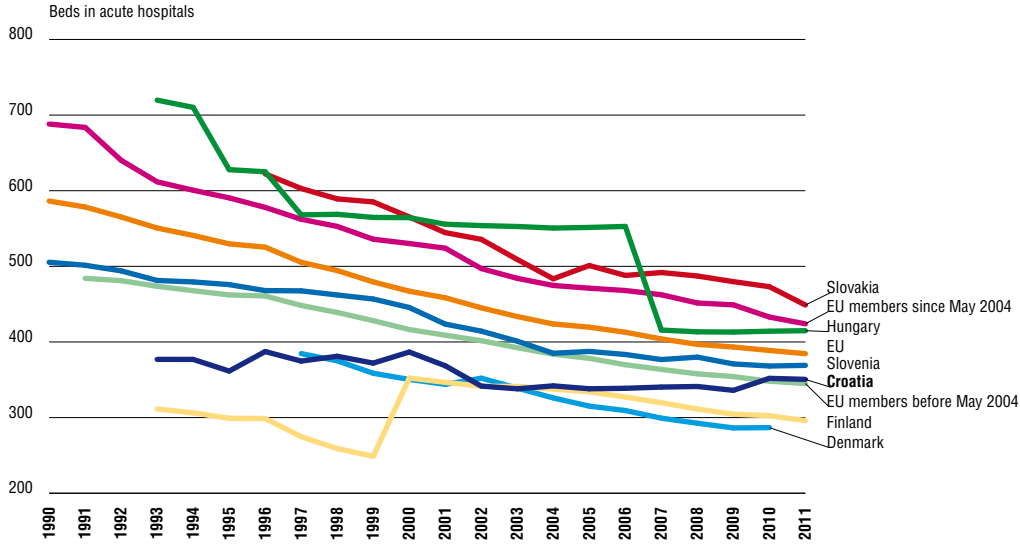
Table 4.2

Beds per 1000 population and average length of stay (ALOS) in hospital-type facilities by specialty, Croatia, 2012

Specialty	No. of beds per 1000 population	ALOS
Internal medicine	0.94	8.23
Infectology	0.11	7.90
Oncology and radiotherapy	0.09	6.98
Dermatovenerology	0.06	11.63
Physical medicine and rehabilitation	0.06	12.49
Neurology	0.20	9.01
Psychiatry	0.32	12.36
Paediatrics	0.28	6.07
Surgery	0.71	6.79
Paediatric surgery	0.04	4.32
Neurosurgery	0.05	8.07
Maxillary surgery	0.03	6.66
Urology	0.09	5.68
Orthopaedics	0.13	6.72
Otorhinolaryngology	0.13	5.05
Ophthalmology	0.10	2.96
Gynaecology and obstetrics	0.50	4.91
Resuscitation and anaesthesia	0.10	4.11
Maternity ward	0.00	2.95
General infirmary	0.03	9.31
Sub-total: acute care	**3.97**	**6.92**
Long-term treatment	0.16	29.02
Chronic mental illness	0.68	59.62
Physical medicine and rehabilitation in specialty hospitals and spas	0.97	21.13
Chronic child diseases	0.03	48.74
Chronic lung diseases	0.07	25.05
Palliative care	0.01	25.30
Sub-total: subacute and chronic care	**1.92**	**31.35**
Total	**5.89**	**9.07**

Source: CNIPH (2013).

Fig. 4.1
Beds in acute hospitals per 100 000 population in Croatia and selected countries, 1990–2011*

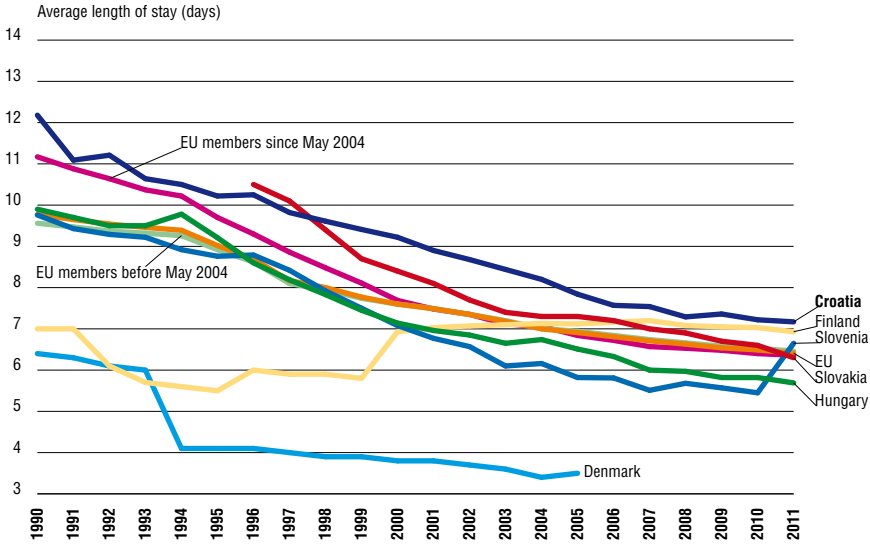


Source: WHO (2014).
Note: *2012 data were not available,

The ALOS and bed occupancy rates in acute hospitals in Croatia are generally significantly higher than the respective indicators in some of the comparator countries, such as Slovenia and Hungary, as well as in other EU countries (Fig. 4.2 and Fig. 4.3). The introduction of the DRG/DTS system, which was fully implemented in 2009 (see Section 3.7), seems to have been successful in further decreasing the length of stay in both university and general hospitals in Croatia (Vončina et al., 2012).

Fig. 4.2

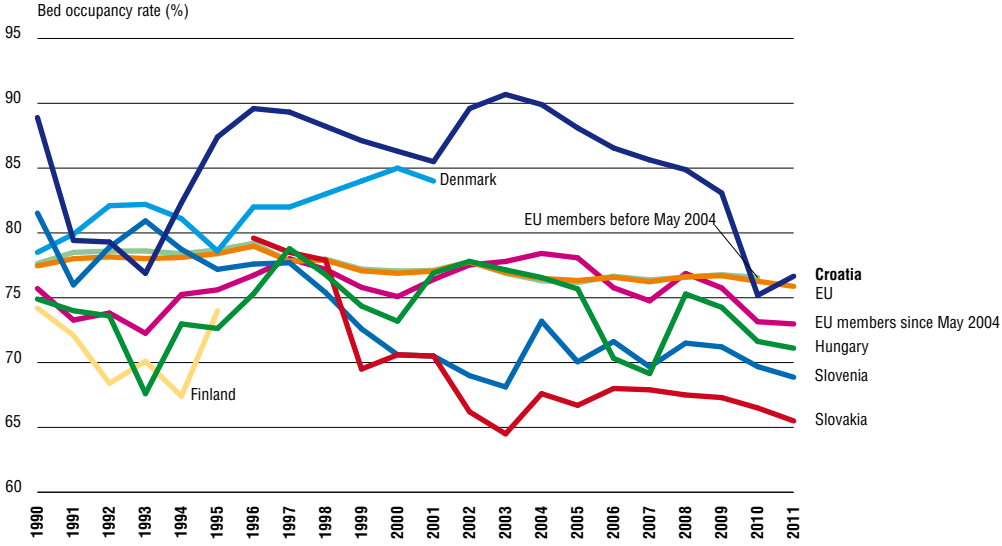
Average length of stay in acute hospitals in Croatia and selected countries, 1990–2011*



Source: WHO (2014).
Note: *2012 data were not available.

Fig. 4.3

Bed occupancy rate (%) in acute hospitals in Croatia and selected countries, 1990–2011*



Source: WHO (2014).
Note: *2012 data were not available.

Nursing and elderly home beds[1]

In Croatia, elderly care is provided mostly within the social sector rather than the hospital system. Institutional and non-institutional care is available.

At the end of 2012, there were 231 social welfare homes (73 owned by the State or the counties, and 158 by other owners): 131 were homes for the elderly and infirm; 27 homes for mentally ill adults; 17 homes for children without adequate family care; 11 homes for children and youth with behavioural disorders; 41 homes for physically and mentally challenged children and adults; one home for addicts; and three homes for children and adults who are victims of family abuse. Altogether, a total of 27 427 beneficiaries received care in these facilities in that year (Croatian Bureau of Statistics, 2013).

An analysis of the 2007 data (Chakraborty, 2010) on the capacity and type of services provided by homes for elderly and infirm persons showed that the actual use of institutional services was close to maximum capacity (95%). County homes seemed to be particularly stretched, operating at 99% of their capacity. There are also private homes for the elderly but the capacity of these is limited; they are monitored by the Centres for Welfare Services.

Non-institutional care and welfare is provided via the Centres for Welfare Services, Centres for Aid and Care, and a wide network of NGOs.

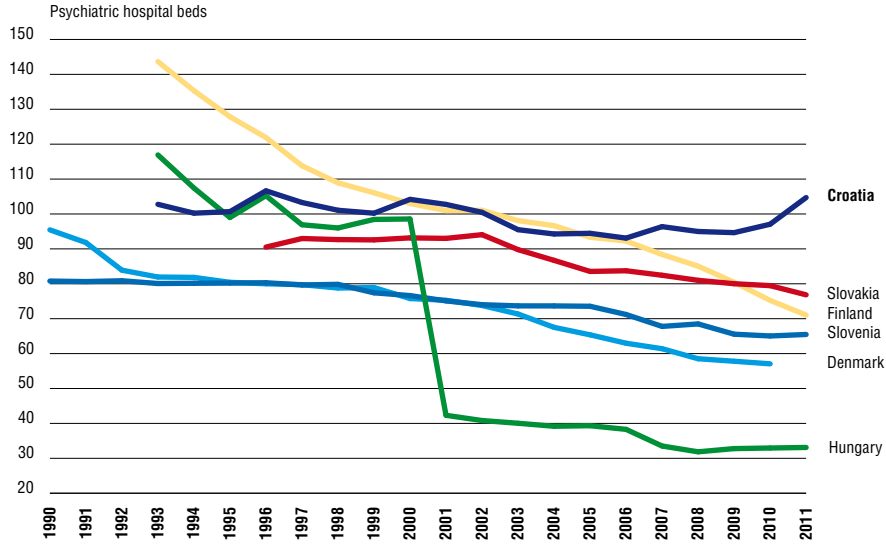
Psychiatric beds

While few hospitals are called "psychiatric hospitals", most psychiatric beds are placed in psychiatric wards in general hospitals and in hospitals with predominantly psychiatric beds. The number of psychiatric beds has been increasing since 2005 and, at 104 psychiatric beds per 100 000 population in 2011, Croatia had the highest number of psychiatric beds per 100 000 population among its comparator countries (Fig. 4.4). This indicates that the shift from institutionalized forms of mental care to community care, which is observed in many countries in western Europe, is still quite weak in Croatia.

[1] Based on Chakraborty (2010).

Fig. 4.4

Beds in psychiatric hospitals per 100 000 population in Croatia and selected countries, 1990–2011*



Source: WHO (2014).
Notes: *No 2012 data were available. Starting from 2009, data on acute hospital beds do not include community care centres providing both inpatient and outpatient services primarily engaged in outpatient services. The big jump in the number of beds in Hungary in 2001 is due to a break in time series data (chronic psychiatric care beds were excluded). No averages were available for the EU12, EU15 or EU27.

4.1.3 Medical equipment

In 2010, Croatia had the lowest number of magnetic resonance imaging (MRI) units, computer tomography (CT) and positron emission technology (PET) scanners among its comparator countries (Table 4.3). The number of PET scanners is particularly low and indicates the need for more investment in radiotherapy equipment. In line with this, investment in this area has been increased since 2013.

Table 4.3

Items of functioning diagnostic imaging technologies (MRI units, CT and PET scanners) in Croatia and selected countries, per million population, 2010

Country	MRI units	CT scanners	PET scanners
Croatia	0.07	0.16	0.01
Denmark	0.18	27.58	5.61
Finland	0.00	21.07	1.49
Hungary	n.a.	7.30	0.40
Slovakia	1.47	13.81	0.55
Slovenia	1.46	12.69	0.98

Sources: Data for Croatia are from a national survey (Government of the Republic of Croatia, 2012); data for other countries are from OECD (2012b).
Notes: CT = computer tomography; MRI = magnetic resonance imaging; n.a. = not available; PET = positron emission technology.

Regional inequalities in access to medical equipment are strongly pronounced and are illustrated by differences in waiting times. For example, in 2010, the waiting time for a CT in Rijeka was 173 days; in clinical centre KBC Osijek hospital it was 120 days; in clinical centre KBC Sestre Milosrdnice hospital in Zagreb 100 days; while in Nova Gradiška county hospital these procedures were not performed at all in the month of September because the device was broken. Even when waiting times are shorter in certain hospitals, not all patients are able to benefit from this because of the distance of the hospital from their place of residence, or because they cannot afford to cover the travel expenses by themselves or are unable to travel (due to illness) (Bodiroga-Vukobrat, 2011). Waiting times are reported daily at the CHIF's web site (http://www.hzzo-net.hr/e_listei.htm).

4.1.4 Information technology

The use of the Internet in Croatia has increased in recent years. According to a household survey conducted in 2011 on a representative sample of individuals aged 15 and older, 58% of the respondents were frequent Internet users; 67% of households had a personal computer; and 38% of the population used the Internet to seek health-related information (Banka.hr, 2011). According to Eurostat data, 65% of the Croatian population aged 16 to 74 had Internet access at home in 2013, compared to the EU28 average of 79% (Eurostat, 2014b). Also, use of the Internet for seeking health-related information, at 25% of the respondents, was lower in Croatia than the EU27 average of 34% (Eurostat, 2014c). The use of IT in health care is increasing, at both primary and secondary care levels, and it has the potential to bring about substantial savings related to improvements in efficiency and quality.

Development of an e-health information system has been underway since the early 2000s with the goals of achieving interoperability between the IT systems of health care providers, the CHIF and public health bodies, and the provision of real-time data on each patient and provider. The implementation started with the introduction of the Central Health Information System of the Republic of Croatia (CEZIH) operated by the CHIF. The CEZIH is an integrated information system that connects and controls all peripheral information systems in primary care doctors' offices, pharmacies and biochemical laboratories, as well as information systems in hospitals used for centralized scheduling of specialist consultations and diagnostic tests. Access to the CEZIH is granted to authorized users only, i.e. health care providers contracted by the CHIF to provide services within the scope of MHI. The system was primarily designed to improve and simplify the delivery of care to patients: for example, patients would no longer

have to collect their laboratory test results as these would be directly accessible (in real time) by doctors; and doctors would be able to access information on the dispensing of prescribed medicines and thus monitor compliance. The main benefits for health professionals potentially include substantial relief from administrative tasks that can be fully automated, and improved communication with other stakeholders in the system. Health care authorities can benefit from significant savings from the printing of prescriptions and referrals; productivity and efficiency gains; and automated checking of insurance data. Moreover, access to real-time information should enable informed decision-making with the aim of increasing the efficiency and equity of health care provision (for example, through monitoring prescribing and referral patterns).

Although, integration of IT systems in primary health care has been completed, 80% of hospitals still have independent IT systems that are not fully integrated into the national hospital information systems. Most hospitals send information and invoices to the central health care information system on a daily basis. However, there is no mutual connection among hospitals, and the data monitored varies from hospital to hospital. There is no IT system for unified procurement, joint use of medical equipment or human resources exchange, and there is also no IT connection between primary health care and hospitals. Development of an integrated hospital information system is currently a reform priority (Government of the Republic of Croatia, 2012).

Complete national coverage of e-prescriptions was achieved on 2 January 2011; e-waiting lists were implemented in 2012–2013; full national coverage of e-referrals in biochemical laboratories was achieved on 15 January 2011; and the implementation of e-referrals to consultations started in 2013. Other priorities include the full implementation of e-medical records and centralized scheduling of specialist consultations and diagnostics. There is no clear timeline for the implementation of these tools.

Currently, the public health system manages more than 60 registers, which are neither linked nor standardized by their data model (see Section 2.7.1). Funding from the World Bank and the EU supports the development of integrated information systems in the health care sector. The Integrated Health Registers project, which is funded by the World Bank and due to be completed in April 2014, aims to provide the framework for integrating registers. The World Bank also funds the construction of a central IT system for all 21 county medical emergency centres, with a central call centre and an advanced system of data exchange with ambulance vehicles (currently, only three county centres for emergency medicine (Rijeka, Karlovac and Zagreb) have IT systems).

Croatia also participates in EU cross-border interoperability projects, such as epSOS, aiming to design, build and evaluate a service infrastructure that demonstrates cross-border interoperability between electronic health record systems in Europe, and PARENT (the PAtient REgistries iNiTiative) with the goal of developing a "pilot metadata registry of EU patient registries" which would complement all other e-health cross-border interoperability projects.

4.2 Human resources

4.2.1 Health workforce trends

At the end of 2012, Croatia's health care system had a permanent workforce of 74 241. Of these, 56 598 (77%) were health professionals and associates, and the remainder worked as technical (12 470 or 17%) or administrative (5173 or 7%) staff. There were also 7149 part-time employed health workers, of which 830 were physicians (out of a total of 13 640 physicians) (CNIPH, 2012).

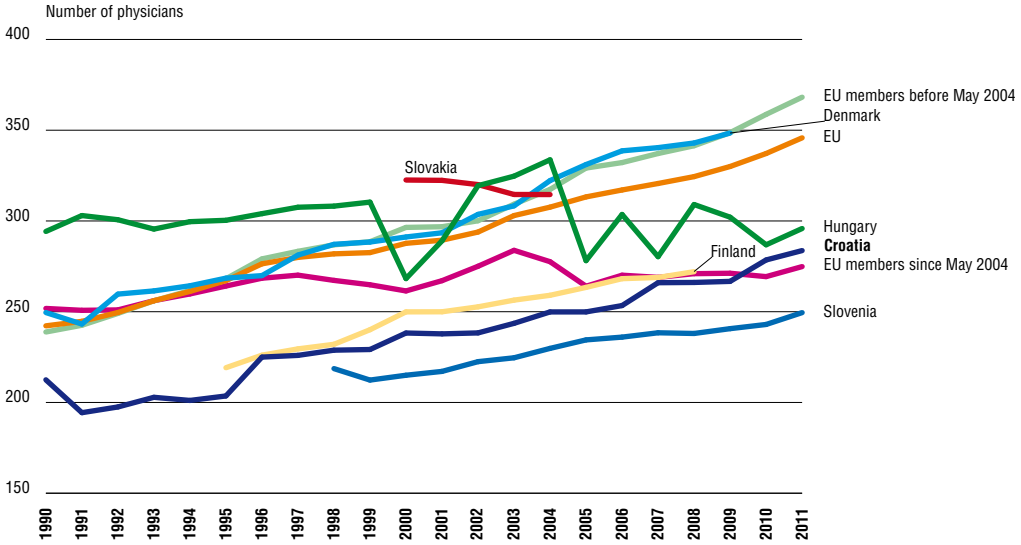
Physicians

In 2012, full-time physicians accounted for 12 810 or 17.3% of the permanent workforce in the health sector or 22.6% of the number of permanent health professionals and associates. The majority of permanently employed physicians (75.8% of the total number of 12 810 physicians) worked in public health care institutions; 5.1% in private health care institutions; and 19.1% in private doctors' practices. The majority of doctors working in private doctors' practices (73.5%) worked in rented facilities (i.e. concessions). Most doctors working in (public and private) health care institutions other than private practice worked in hospitals (58.7% of all permanently employed physicians), followed by health centres (8.9%), state health institutes (4.5%) and emergency medical care stations (3.4%). Other physicians worked in independent (i.e. not contracted by the CHIF) private polyclinics and health care companies (5.1%) (CNIPH, 2013).

The majority of permanently employed medical doctors (61%) were female, and 70.6% of permanently employed doctors had a specialization. About 14.7% of specialists specialized in internal medicine, 6.6% in paediatrics and 6.1% in psychiatry. Only 2.8% specialized in family medicine and 0.3% specialized in public health (CNIPH, 2013).

The number of physicians per 100 000 inhabitants increased from around 212 in 1990 to 299.4 in 2011 but is still substantially lower than the EU27 average of 346 (Fig. 4.5). There is a perceived shortage of physicians, especially in family medicine. Shortages are also observed in rural areas and on the islands.

Fig. 4.5
Number of physicians per 100 000 population in Croatia and selected countries, 1990–2011*



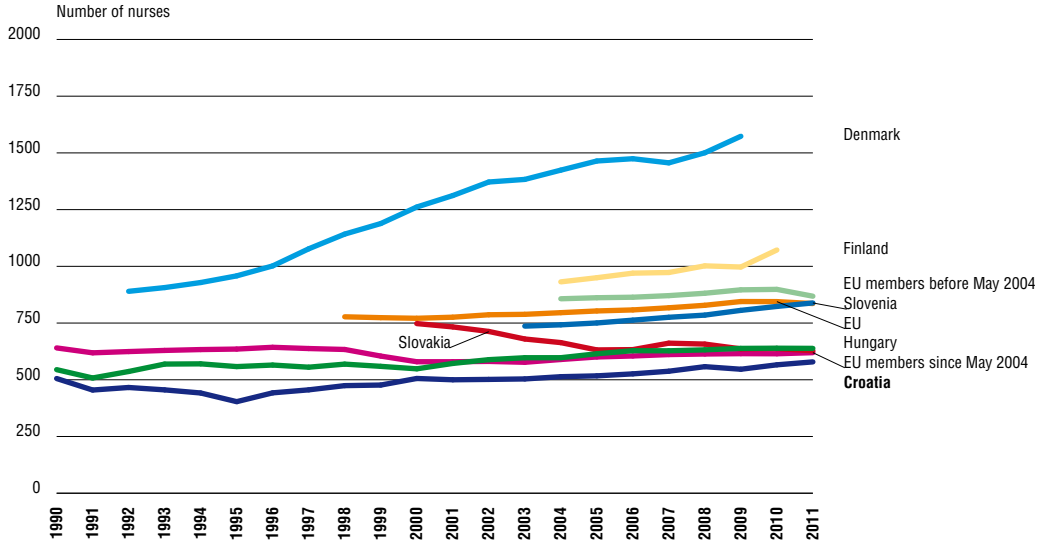
Source: WHO (2014).
Note: *2012 data were not available.

According to a study on the regional distribution of physicians in Croatia conducted in 2006, there were significant differences in the number of physicians per 100 000 inhabitants between the counties. For example, the number of GPs per 100 000 inhabitants ranged from 47.1 in Pozeško-Slavonska County to 61.8 in Primorsko-Goranska County (the national average was 54.2). There were also significant differences in the number of specialists per 100 000 inhabitants between the counties (Drakulić, Bagat & Golem, 2009).

Nurses and midwives

The number of nurses in Croatia has been rising continuously over recent years, from 506 per 100 000 in 1990 to 579 per 100 000 in 2011. The number of nurses per 100 000 inhabitants in Croatia in 2011 was well below the EU average of 836 (Fig. 4.6. and Fig. 4.7.) and the ratio of nurses to physicians, at approximately 2:1 in Croatia, was lower than the same ratio in the EU15 countries (2.3) (Fig. 4.7). Nevertheless, unemployment was recorded among this category of medical professionals.

Fig. 4.6
Number of nurses per 100 000 population in Croatia and selected countries, 1990–2011*



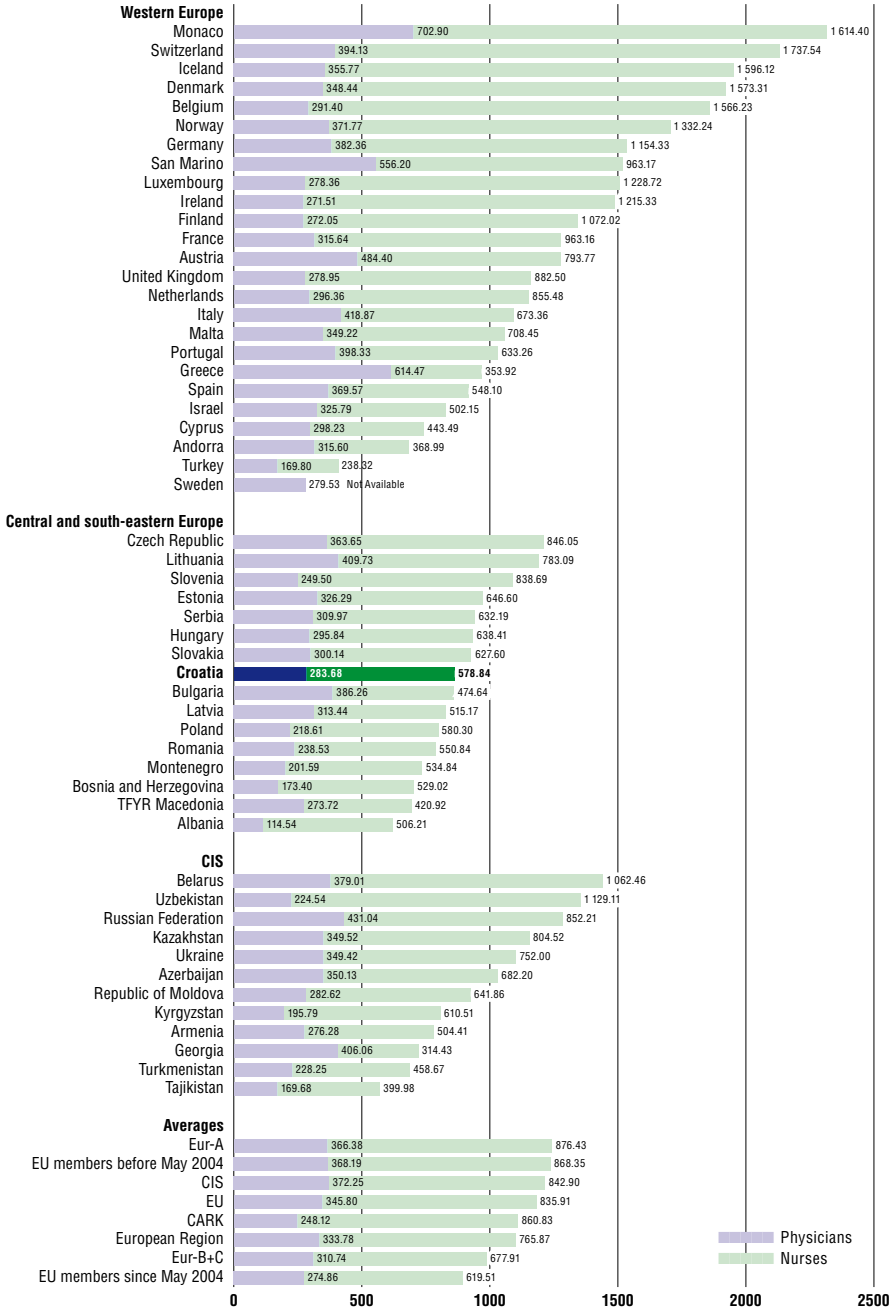
Source: WHO (2014).
Note: *2012 data were not available.

The majority of nurses and medical technicians (71%) have at least college and high school qualifications; the remaining 29% are mostly health care engineers and technicians. According to data from the Croatian Chamber of Nurses, in 2010 there were 6147 nurses/medical technicians with a university degree in nursing (Government of the Republic of Croatia, 2012). Most nurses and technicians work in clinical hospital centres, clinical hospitals and clinics, and general hospitals.

In 2012, there were 38 midwives per 100 000 inhabitants in Croatia, which is slightly more than the EU27 average of 33 (CNIPH, 2013). However, according to data from the Croatian Chamber of Midwives, about a third of all registered midwives do not work in their profession but are employed as nurses, laboratory technicians and dental assistants (Croatian Chamber of Midwives, 2011).

Fig. 4.7

Number of physicians and nurses per 100 000 population in the WHO European Region, 2012*



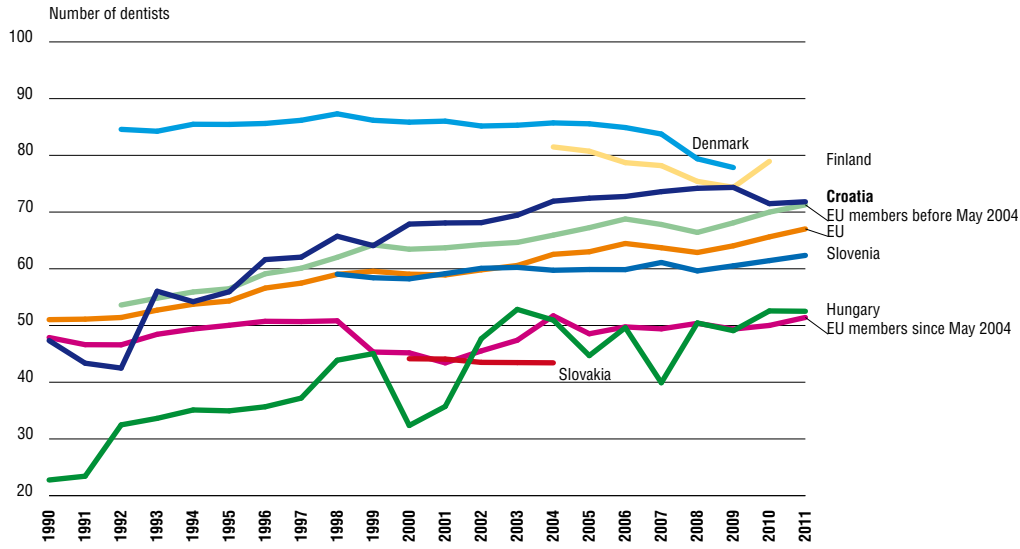
Source: WHO (2014).
Notes: *2012 data were available for 20 out of the 53 countries in the WHO European Region. European Region: the 53 countries in the WHO European Region; Eur-A: 27 countries in the WHO European Region with very low child and adult mortality (see WHO definition); Eur-B+C: 26 countries in the WHO European Region with higher levels of mortality (see WHO definition).

Dentists

The number of dentists in Croatia has risen substantially over the years, from 47 per 100 000 in 1990 to 72 per 100 000 in 2011 – above the EU27 average of 67 (Fig. 4.8). In 2012, out of the total of 3185 dentists, 698 worked in State health institutions, 189 in private health institutions, and 2298 in private dentists' practices. About 14.7% of dentists (467) had a specialization (CNIPH, 2013).

Fig. 4.8

Number of dentists per 100 000 population in Croatia and selected countries, 1990–2011*

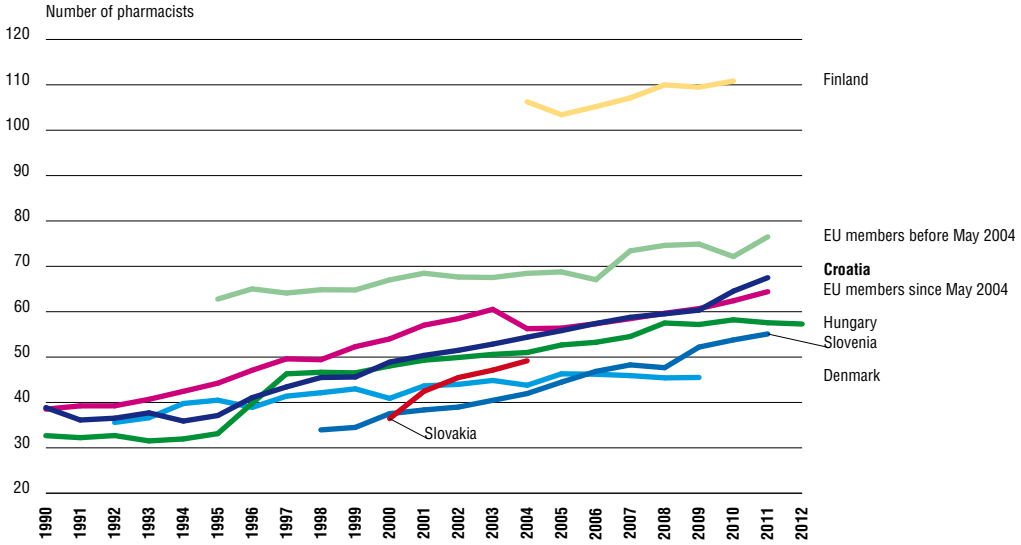


Source: WHO (2014).
Note: *2012 data were not available.

Pharmacists

The number of pharmacists in Croatia rose substantially from 39 per 100 000 in 1990 to 70 per 100 000 in 2012. This is much less than the EU15 average of 76 (Fig. 4.9) and there is currently a shortage of pharmacists in Croatia. One of the reasons for this shortage is the fact that foreign pharmaceutical companies that open offices in Croatia offer well-paid jobs to pharmacists, particularly in the marketing of finished products.

Fig. 4.9
Number of pharmacists per 100 000 population in Croatia and selected countries, 1990–2011*



Source: WHO (2014).
Note: *2012 data were not available.

4.2.2 Professional mobility of health workers

There is no systematic surveillance or reporting of migration trends in the health sector. The key destination countries of health workers trained in Croatia are Slovenia, Italy (particularly nurses), other western European countries and the United States. Some doctors that are residents of other countries (especially of Bosnia and Herzegovina or Serbia) but have Croatian citizenship immigrate to Croatia, but data on such flows are scarce. It is expected that the number of foreign students coming to Croatia to study will increase (following Croatia's EU accession), especially from countries with less developed medical education. There is no migration strategy on the national level but efforts have been made to harmonize Croatian policies on professional mobility with the EU policies (in the area of recognition of diplomas and licences) (amendment to the Health Care Act of 28 June 2013).

Apart from the outward migration, there are several other migratory pathways in Croatia. These trends are not systematically measured (Babić-Bosanac & Džakula, 2006) but, according to anecdotal evidence, some (especially unemployed) health care workers leave the medical profession to work in other professions, for example, as sales representatives for pharmaceutical companies

or in medical trade companies. Regional migration occurs within the country, with health care workers moving from less developed rural areas to city centres (which results in medical staff shortages in the rural areas). Doctors undergoing internships also prefer to work in the City of Zagreb rather than move to other Croatian regions. The main reasons why health workers leave rural areas are family commitments and lack of technical support in the rural areas.

An increase in migration of Croatia's health workforce to other EU countries was expected after Croatia's EU entry. This related especially to nurses, due to the lack of employment opportunities in Croatia. At the time of writing, no information on the actual trends was available (however, the number of medical doctors collecting documents from the Medical Chamber allowing them to seek employment in the EU appears to be increasing). Long-term measures to increase the number of health workers are: increased enrolment quotas and encouraging young people to study medicine, primarily through financial incentives and the improvement of physicians' living standards (mainly through salary increments) (Drakulić, Bagat and Golem, 2009).

4.2.3 Training of health workers

Five types of medical professionals (medical doctors, nurses, dentists, pharmacists and midwives) fall within the system of coordination of minimum training conditions according to Directive 2005/36/EC on the recognition of professional qualifications. Croatia meets these minimum training conditions for all five categories of medical professionals. However, according to the National Health Care Strategy 2012–2020, the field of nursing education is insufficiently regulated, and there are discrepancies in the educational standards of several types of health worker (see Section 2.8.3).

Medical doctors

Four universities offer medical education in Croatia (in Zagreb, Osijek, Rijeka and Split). It takes six years to complete the medical degree for doctors (Doctor of Medicine). After completing the degree, students must complete a one-year supervised (and paid) internship programme at the hospital of their choice and pass the State examination, the Croatian Medical Licensing Exam, organized by a special commission at the Ministry of Health. Doctors who pass the examination must apply for a licence with the Croatian Medical Chamber in order to be able to practise. All medical doctors practising medicine in the Republic of Croatia must register with the Chamber.

The internship and the state examination are not obligatory for medical doctors who are nationals of EU Member States. Since the EU accession, EU rules on the recognition of medical education also apply in Croatia.

Specialization programmes are offered in 46 areas. These are competency based and doctors undergoing specialization training maintain log books detailing completed interventions and procedures. Doctors obtain generic competencies (skillful communicator, collaborator, scholar, manager, health advocate and professional) and specific competencies that comprise medical skills, knowledge and attitudes particular to each area of specialization. All specialities with a common trunk (e.g. internal medicine and surgery) have the same competencies for the common trunk segment. The National Commission for the Specialist Training of Physicians is responsible for defining the generic and specific competencies, and for evaluating, assessing and improving the quality of specialist training of physicians. Each specialty training programme defines the specific criteria required for a health care institution (hospital) to be accredited as a training institution. The Ministry of Health grants accreditations and supervises specialization programmes.

The duration and content of each specialization programme must meet the minimum requirements set by EU Directive 2005/36/EC. In addition to training at accredited specialty training institutions, a resident trainee attends a full-time three-month postgraduate specialty course at a medical school. Training ends with a specialist medical examination and those who pass this obtain a specialist diploma and are registered by the Chamber as a specialist.

Compulsory relicensing of all medical doctors was introduced in 1996. In order to be relicensed, a medical doctor must collect 120 credit points (through continuing medical education (CME), publications, etc.) over a period of six years and apply for a renewal of their licence with the Chamber. If the applicant fails to earn a sufficient number of points, he or she will have to take a re-assessment examination in front of the Chamber Examination Commission.

A medical doctor's licence may be temporarily or permanently revoked subject to a Decision of the Chamber Court. The Chamber Court may also temporarily or permanently restrict the licence with respect to the scope and type of medical treatment and services the doctor is allowed to provide.

Nurses

Nurses complete either a course at a vocational high school for nurses or a Bachelor's degree in nursing at a university, followed by a compulsory internship and a State examination. Those who pass the examination are eligible to apply

for a licence with the Croatian Nursing Council and are subsequently entered into the register. After passing the State examination, nurses can attend one of the two postgraduate specialist programmes, in public health or management. A number of specializations are also available in psychiatry, paediatrics, internal medicine, intensive care, surgery and emergency medicine.

Nurses are required to participate in continuing education and collect 90 points during a six-year period (a minimum of 15 points a year). If a nurse fails to earn a sufficient number of points, he or she will have to take a re-assessment examination in front of the Croatian Nursing Council.

Dentists

Dentists complete a six-year university programme in dental medicine, followed by a compulsory internship and a State examination. Those who pass the examination may apply for a licence with the Croatian Dental Chamber and can be subsequently entered into the register of doctors of dental medicine. Dentists may then choose one of eight specializations.

Dentists are required to participate in continuing education (a minimum of 10 points a year) in order to have their licence renewed.

In 2009, the Chamber recognized two categories of auxiliary dental staff: dental technicians (working independently) and dental assistants (working under the direction and supervision of a doctor of dental medicine). Dental technicians and dental assistants complete a degree (four years) in vocational schools and are registered by the Chamber (registration gives them the right to practice).

Pharmacists

Pharmacists complete a university degree in pharmacy (five years), followed by a compulsory internship and State examination. Those who pass the examination are eligible to apply for a licence with the Croatian Chamber of Pharmacists, and will subsequently be entered into the register of pharmacists. The licence has to be renewed every six years and to achieve this they need to collect a minimum of 5 points a year.

4.2.4 Doctors' career paths

After passing the State examination, doctors can choose either to pursue a career in academia or to work as a clinician and seek promotion to different managerial grades within the hospitals. A doctor choosing the academic path will begin as a research assistant and may then be promoted to the level of assistant, assistant professor and, eventually, full professor. Doctors choosing

clinical careers will first undergo specialist training (as resident doctors). After passing the specialization examination, they can be promoted to the position of chief of department or chief of staff and ultimately to that of hospital director. These decisions are taken internally at the hospital level and are based on merit.

4.2.5 Other health workers' career paths

Nurses can advance professionally in hospitals to become head of department nurses and, eventually, hospital head nurses. According to the Health Care Act, nurses are members of the governing bodies in hospitals and participate in the decision-making.

5. Provision of services

The provision of public health services is organized through a network of public health institutes, with one national institute and 21 county institutes. A number of national programmes are currently in place. The Mandatory Vaccination Programme, in place since 1948, is the most important and most successful preventive health programme in the country. The Early Cervical Cancer Detection Programme, launched in late 2012, is one of the most recent national public health programmes.

Primary care physicians (GPs, paediatricians and gynaecologists) are usually patients' first point of contact with the health system. Each insured citizen is required to register with a GP (adults) or a paediatrician (children), whom they can choose freely. Reflecting an EU recommendation, all practising GPs are required to specialize in family medicine by 2015. However, patients often skip the primary care level and seek health care services directly at hospitals and, so far, there have been no attempts to establish integrated care pathways. The share of specialized consultations among all CHIF-contracted ambulatory care consultations (i.e. primary and specialized care) was 23% in 2012, which may be an indication that some specialized care was used inappropriately. The introduction of "concessions" aimed at reforming the existing solution of rentals and privately contracted physicians seems to have weakened the continuity of care. There are not many group practices and interdisciplinary teams in primary health care. However, since 2013, GPs have been encouraged by the CHIF to create group practices (with financial incentives).

Before the reorganization of emergency care, which started in 2009, the provision of outpatient emergency medical services (EMS) was fragmented. The reform introduced a model of a country-wide network of County Institutes for Emergency Medicine. The next important reform step is the integration of all hospital emergency services into one emergency care hospital department.

In about a third of general hospitals, emergency services are not yet integrated in one department; it is difficult to provide hospital EMS for patients with multiple symptoms and waiting times for patients are longer.

There is currently one pharmacy per 4000 inhabitants in Croatia, compared to one pharmacy per 3000 inhabitants in the EU on average. Pharmaceuticals are available free of charge for certain population groups and particular conditions; otherwise, co-payments are applied.

Rehabilitation services cover three types of care: orthopaedics, balneology and physical medicine. Although both the number of rehabilitation beds and physical and rehabilitation medicine specialists per 100 000 inhabitants is very high in Croatia compared to other EU Member States, the ratio of physiotherapists and other rehabilitation professionals is relatively low. There have also been shortcomings in education, which has been focused on rheumatology rather than rehabilitation, and in the quality and efficiency of rehabilitation medicine.

Long-term care (LTC) is mainly organized within the social welfare system. It is currently mostly provided in institutional settings. There is a considerable coverage gap regarding the estimated number of dependent people and those who have actually received some type of care, with shortages of formal services in the institutionalized context. Croatia is among the top three countries in Europe with the greatest scale of informal care, with the age cohort 50–64 bearing the greatest burden of caring for the elderly. Virtually no services are available for informal carers. Waiting lists for county nursing homes are long, while private providers are financially unaffordable to many. The 2013 Social Care Act includes provisions for generational solidarity, the objectives of which are to keep the elderly in their own homes and with their family; to promote their social inclusion; and to improve their quality of life by developing and expanding non-institutional services and volunteering. A new draft, currently under public debate, proposes, among other features, a guaranteed minimum income as a new form of social welfare compensation.

There is no adequate system of palliative care and only a few institutions provide some forms of palliative care. The Strategic Plan for Palliative Care in Croatia, adopted in July 2013, plans to increase the availability of palliative care resources in the country (both infrastructure and human resources).

Mental health services are mainly provided in institutions and the number of psychiatric beds has been increasing in recent years. Community mental health care (except for certain programmes such as addiction prevention) remains underdeveloped, and specific and well-organized programmes of mental health care in the community are lacking.

Croatia has no defined legal framework for complementary and alternative medicine (CAM). Only acupuncture is recognized as a medical treatment and may be reimbursed by the CHIF, but only under certain conditions.

5.1 Public health

The provision of public health services is organized through a network of public health institutes: one national institute (CNIPH), owned by the Ministry of Health, and 21 county institutes, owned by the counties. The activities of the county institutes are coordinated and supervised by the CNIPH.

The CNIPH is responsible for the collection, analysis and publication of public health statistics (e.g. information on disease incidence or mortality) and epidemiological data, and for health promotion and health education at the national level. It also maintains a number of public health registers, such as the Croatian Cancer Register, Croatian Register for Psychoses and Register of Suicides, Register of HIV/AIDS, Register of Health Care Workers and others. CNIPH's Department of Epidemiology is the centre for disease control and prevention in Croatia. It maintains the central information system for reporting and monitoring the incidence of infectious diseases, and proposes and supervises the implementation of key preventive and anti-epidemic measures by various actors in the health care system, from family doctors to clinical hospitals, including specially trained and equipped epidemiology service units within the county institutes of public health. The Department also supervises compulsory immunizations and pest control; monitors environmental pollution and waste management; sets standards; and tests food and drinking water safety.

The county public health institutes provide services (for their respective populations) in the following areas: epidemiology and quarantine of communicable diseases; epidemiology of noncommunicable diseases; water, food and air safety services; immunizations (including overseeing the compulsory immunization programmes); mental health care (prevention and out-of-hospital treatment of addictions); sanitation; health statistics; and health promotion.

Compulsory immunization programmes are carried out by primary care doctors (family doctors and primary care paediatricians) and the school medical service (affiliated with the county institutes of public health) for school-age children. Non-compulsory vaccination programmes are delivered through family doctors or county institutes of public health. Some of the non-compulsory vaccinations, recommended by the CNIPH for certain high-risk populations are free of charge for these populations (e.g. influenza vaccine for older people and patients with chronic diseases). Physicians may also offer opportunistic screening (e.g. cervical smear tests or mammograms) to patients attending for something else.

The Mandatory Vaccination Programme (also called the Childhood Vaccination Programme), which started in 1948, is the most important and most successful preventive health programme in the country. It covers the following vaccines: BCG (against tuberculosis) (administered with hepatitis B); DTaP/IPV/Hib (combination vaccine against diptheria, tetanus, pertussis, polio and Hib disease) (administered with hepatitis B); measles, mumps and rubella; diphtheria, tetanus and pertussis (combination vaccine); polio; and tetanus for people over 60 years old. Participation in this programme is obligatory for the target population, for doctors responsible for administering the vaccinations, and for the bodies responsible for its organization and funding (CHIF and CNIPH). The programme is improved every year on the basis of best practice evidence. The programme and other public health activities, such as surveillance and early response system, have been successful in keeping infectious diseases under control. Diseases preventable through vaccination have either totally disappeared (diphtheria, poliomyelitis) or their incidence has been drastically reduced.

Key public health programmes in Croatia are summarized in Table 5.1. They are all national programmes and are developed and approved by the Ministry of Health.

Table 5.1
Public health programmes in Croatia

Programme	Duration
Mandatory Vaccination Programme	1948 (ongoing)
Breastfeeding Promotion Programme	1992 (ongoing)
National Programme for Roma	2003 (ongoing)
National Plan of Preparedness for Flu Pandemic	2005 (ongoing)
National Programme of Prevention and Early Detection of Breast Cancer	2006 (ongoing)
National Programme of Prevention and Early Detection of Colorectal Cancer	2007 (ongoing)
Programme of Psycho-social Aid at Children's Oncology Wards	2007 (ongoing)
National Programme of Health Care of Persons with Diabetes	2007 (ongoing)
Programme of Protection Against Domestic Violence	2009 (ongoing)
National Programme for Control of Antibiotic Resistance of Bacteria	2009–2014
System of Prevention and Treating Addictions and Mental Health in County Institutes of Public Health	2009 (ongoing)
Prevention of Injuries in Children	2010 (ongoing)
Prevention of Obesity (Action Plan)	2010–2012
National Programme for Prevention of HIV/AIDS	2011–2015
Prevention of Suicide in Children and Youth	2011–2013
National Programme of Prevention and Early Detection of Cervical Cancer	2012 (ongoing)

The National Programme for the Early Detection of Breast Cancer, established in 2006, was the first national programme for the early detection of malignant diseases in Croatia. The programme encompasses a mammography examination every two years for all women aged 50–69. In addition, women aged 20–40 are recommended to undergo a clinical breast examination every three years, and women over 40 annually. The National Programme for the Early Detection of Colorectal Cancer was started in 2007 and includes an occult blood test for all persons over the age of 50. The Early Cervical Cancer Detection Programme was launched in December 2012 and will include a Pap smear every three years for women aged 25–64. A later phase of the programme foresees the introduction of new technologies, such as liquid-based cytology and human papilloma virus (HPV) testing. No evaluation of these programmes is yet available.

Occupational health services are provided through occupational medicine specialists, mainly working in private primary care practices or county health centres. Until 2011, all registered employers were required to register their companies and employees with the Croatian Institute for Health Insurance of Health Protection at Work, which was established at the end of 2007 and which directed them, on the basis of location, to occupational medicine specialists for periodic examinations (Lalić, 2008). In 2011, this Institute was annexed to the CHIF and no longer exists as an independent entity.

The National Centre for Addiction Prevention is part of the CNIPH and is responsible for the monitoring of addictions, and planning and evaluation of preventive measures. The National Register of Treated Psychoactive Drug Addicts was established in 1978 and is maintained by the National Centre for Addiction Prevention. Since 2003, county centres for addiction prevention form a part of the county institutes of public health. In 2010, the National Strategy against Disorders caused by Excessive Consumption of Alcohol for 2011–2016 was passed. It targets prevention of alcohol abuse, and treatment and rehabilitation of persons with alcohol-related problems, as well as promoting a socially engaged approach to the problems of excessive alcohol consumption. Operational plans for the Strategy are yet to be elaborated and adopted.

The Croatian Adult Health Survey (CAHS) was initiated in 2001 as part of a project for the prevention of cardiovascular diseases and was implemented jointly by the Croatian Ministry of Health, Statistics Canada, the Central Bureau of Statistics of Croatia and the Andrija Štampar School of Public Health (Vuletić et al., 2009). The survey was carried out in 2003. The aim was to provide comprehensive health data for the Croatian population, including health status, use of health services and health determinants (nutrition, smoking, alcohol consumption, physical activity, and body mass index (BMI) calculated from self-reported height and weight data). The Croatian Adult Health Cohort Study (CroHort) was carried out in 2008 as a follow-up study to the 2003 CAHS survey (and involved re-interviewing the respondents surveyed in 2003); another follow-up survey was planned for 2013 but was not carried out due to the lack of financial resources (Ivičević Uhernik et al., 2012).

There are currently no specific government measures for controlling tobacco consumption. The much debated Act on the Use of Tobacco Products was passed in 2008. It introduced a complete smoking ban in public places, with the intention of protecting non-smokers from tobacco smoke and changing the habits of smokers. The financial crisis that started in 2008 prompted a revision of this law in 2009 and, according to the new regulations, smoking is again allowed in bars.

The basic accessibility of public health services is good and is maintained through a well-developed network of public health institutions and professionals. However, accessibility is not equal for all citizens – access to public health services is more difficult in rural/underdeveloped areas and on the islands. The shortage of medical professionals in such areas, poorer socioeconomic characteristics of their populations and transport problems are the main root causes of inequities of access. Some populations are offered additional services;

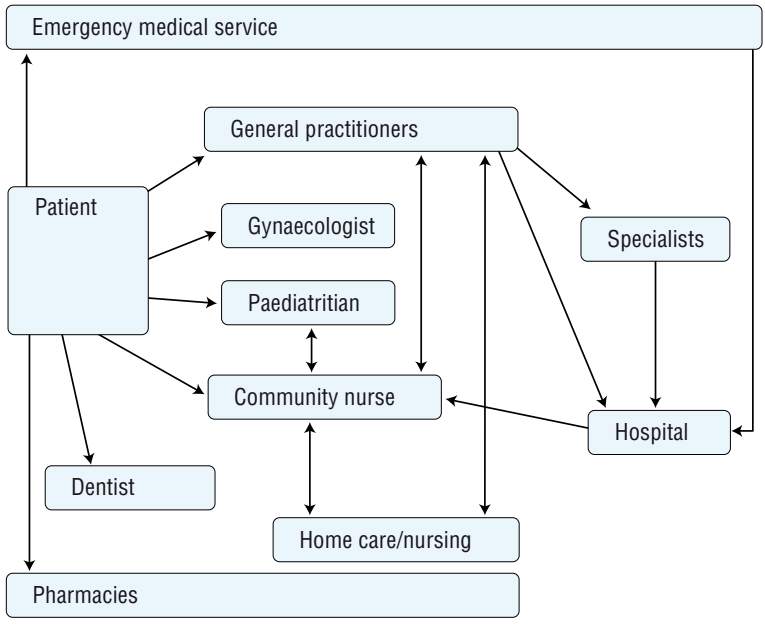
for example, free vaccinations are offered to high-risk groups and the National Programme for Roma (see Table 5.1) aims to improve health care for the Roma population.

5.2 Patient pathways

Primary care physicians (GPs, paediatricians and gynaecologists) are usually patients' first point of contact with the health system. They serve as gatekeepers to more complex medical care[1]. Patients can also see community nurses first or, in the case of sudden threat to their health or life, access medical emergency services. Patient pathways are the same across the whole country (Fig. 5.1). Continuity of care is described in Section 5.3.

Patient pathways are the same across the whole country (Fig. 5.1). A typical patient pathway is described in Box 5.1. Continuity of care is described in Section 5.3.

Fig. 5.1
Patient pathways



[1] Gatekeeping can also be performed by specialists employed by the county institutes of public health (e.g. adolescent medicine specialists, mental health and addiction specialists).

Box 5.1

Patient pathways

In Croatia, a woman in need of a hip replacement because of arthritis would take the following steps:

- During a free visit to the GP with whom she is registered, the GP prescribes any necessary medication and refers her to a hospital orthopaedic department or to an orthopaedic polyclinic.
- She has free access to any public hospital in Croatia and her GP advises her which hospital to go to on the basis of information about her special needs and waiting times (information on waiting times is available on the CEZIH and CHIF web sites as well as on the web sites of health care facilities). Together with her GP, she chooses the most suitable facility and date for a consultation (the implementation of e-referrals started in 2013).
- After referral, the patient sometimes may have to wait for a few weeks or a few months for an outpatient hospital appointment for examination by a specialist.
- If she does not want to wait at all, she can choose to go to a private hospital (the number of private beds in Croatia is limited), but she must pay for treatment in a private hospital out of her own pocket.
- After this she will have to wait for inpatient admission and surgery.
- Following surgery and primary rehabilitation at the hospital, she is discharged and either goes home or to a specialist hospital for rehabilitation (or long-term care). Her GP receives her discharge summary from the hospital and is responsible for further steps, such as referral to a physiotherapist or for hospital rehabilitation (a co-insurance of 20% will apply for these services under the MHI scheme).
- If she needs home care after hospital treatment or rehabilitation (such as home nursing) and/or home assistance, it will be prescribed by the hospital (and approved by her GP) and provided free of charge.
- A follow-up hospital visit is likely to take place, but will only be free of charge if she obtains a GP referral.

5.3 Primary/ambulatory care

Primary care services are provided via a network of first-contact doctors and nurses contracted by the CHIF. Each insured citizen is required to register with a GP (adults) or a paediatrician (children), whom they can choose freely. The first-contact doctor can be changed at any time (at no fee).

Upon EU recommendation, a project aimed at ensuring that all family medicine doctors have a specialization in family medicine was started in 2003 (the goal being to improve the quality of primary care). The programme of GP specialization started at the Andrija Štampar School of Public Health in 1961 and was the first such programme in the world. All practising primary care physicians are required to specialize in family medicine by 2015 (Katić, Jureša & Orešković, 2004). In 2012, out of the total of 2581 primary care teams, 1547 had a physician specialist, including 1099 teams with a physician specializing in general/family medicine (CNIPH, 2013).

Primary health care comprises the following services:

- general practice/family medicine;
- dental care;
- paediatric care for infants and young children;
- primary care gynaecology;
- community nursing;
- home care services;
- emergency medical care;
- public health services (hygiene and epidemiology, school health services) (see Section 5.1).

Primary care services are provided in the following settings: individual practices; larger units comprising several offices[2] (some including small laboratories); and county health centres (*Dom zdravlja*) that provide general medical consultations, primary care gynaecology services, care for pre-school children, dental care and community nursing care[3]. GPs are also required to provide home visits if necessary. Privatization of primary care provision is described in Section 2.8.2.

[2] Group practices are being developed in Croatia.

[3] Community nursing services comprise various preventive interventions provided in home settings and focus on chronic patients, pregnant women and mothers with infants. They are organized by the health centres and are delivered through nurses in cooperation with GPs.

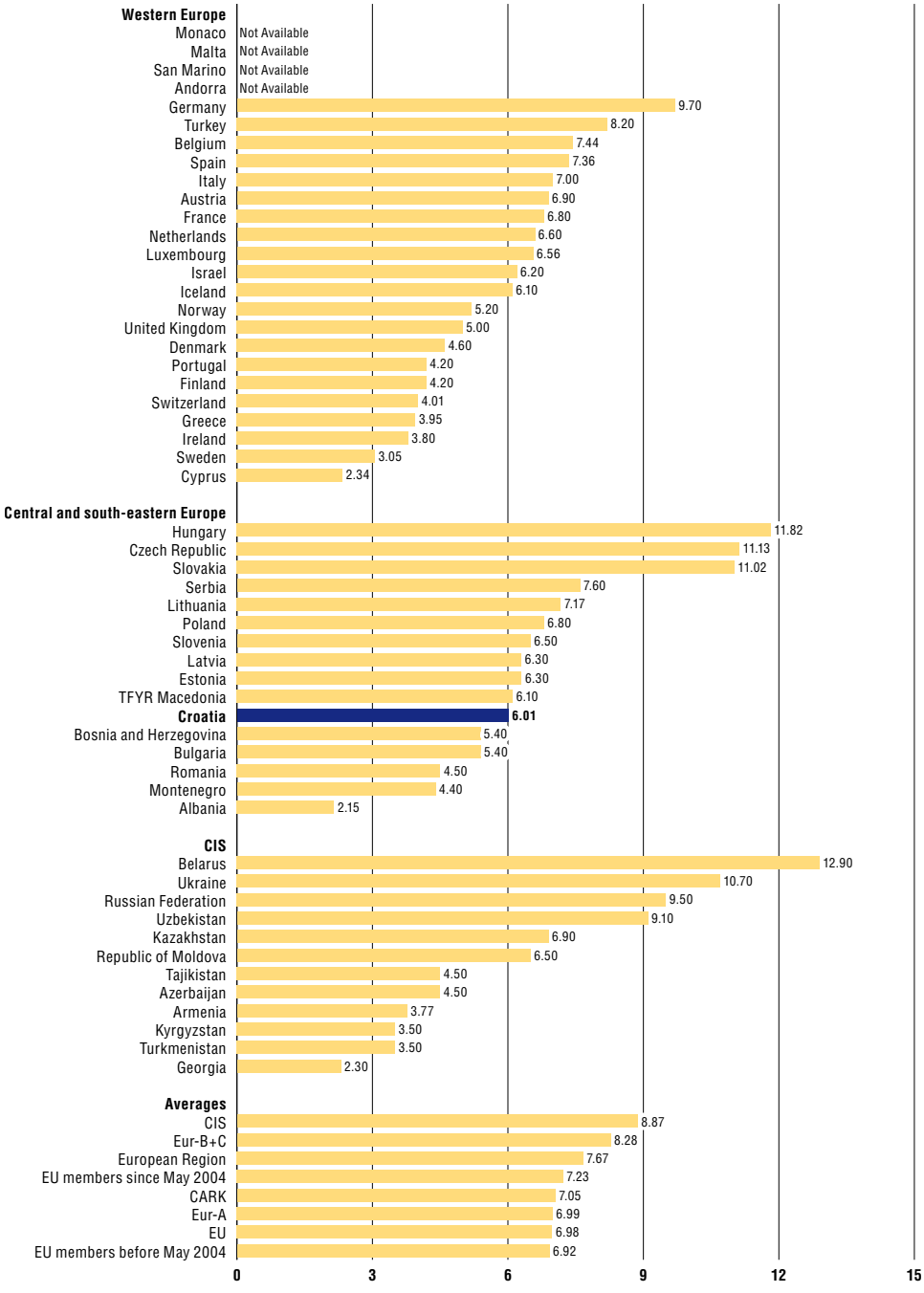
Each GP contracted by the CHIF is expected to have at least 1275 registered patients on their roster. This is low compared to 2000–2500 patients per GP in most European countries but was established deliberately in order to encourage physicians to work in under-served areas (a decreased capitation fee is applied to discourage excessive patient lists) (Oleszczyk et al., 2012). Services are usually provided by teams consisting of a GP and a nurse. Primary care for infants and pre-school children is delivered by teams consisting of a paediatrician and a nurse, each with an average of 1200 patients on their roster. They provide preventive care (vaccinations) and general paediatric care. Depending on the parents' decision, children are registered with a paediatrician until the age of six or fifteen, when they are taken over by a family physician. Primary care gynaecology services include health maintenance examinations and treatment of disorders of the female reproductive system, as well as maternity care. A primary care gynaecology team (gynaecologist and a nurse) has on average 6000 women on the roster.

According to WHO data, there were approximately six outpatient visits per person per year in Croatia, lower than the EU27 average of seven (Fig. 5.2). During the war years (1990–1995), the number of outpatient visits in Croatia was lower than in the EU. It rose after the war and started to decline in the mid-2000s, converging to the EU average.

According to the National Health Care Strategy 2012–2020, continuity of care is insufficient in Croatia (Government of the Republic of Croatia, 2012). Since the introduction of concessions in primary health care in 2010 (see Section 2.8.2), the continuity and universality of health care services, which was previously an important characteristic of community health centres, has been weakened. There are not many group practices and interdisciplinary teams in primary health care, but since 2013 GPs have been encouraged by the CHIF to create group practices (with financial incentives). In many areas, there are difficulties in organizing continuous provision of primary care and in finding replacements for health care workers during annual leave or sick leave. Often there is no appropriate communication among the family medicine doctors and patronage nurses (i.e. community nurses visiting patients in their homes – usually chronically ill patients, newborns or patients after major surgery or other invasive procedures or serious illness), pharmacists and other workers in the health care system. Also, due to long waiting times, patients often 'skip' primary care to access specialists directly, mainly in emergency departments. So far, there have been no attempts to establish integrated care pathways.

Fig. 5.2

Outpatient contacts per person in the WHO European Region, 2012



Source: WHO (2014).
Notes: No data were available for Andorra, Malta, Monaco and San Marino. European Region: the 53 countries in the WHO European Region; Eur-A: 27 countries in the WHO European Region with very low child and adult mortality (see WHO definition); Eur-B+C: 26 countries in the WHO European Region with higher levels of mortality (see WHO definition).

5.4 Specialized ambulatory care/inpatient care

Specialized outpatient care

Specialized outpatient health care services, such as consultations provided by secondary care specialists, are mostly delivered in hospital outpatient departments. Other settings include specialized ambulatory care units in public polyclinics (usually linked to general and clinical hospitals) or private polyclinics and private practices in county health centres. Provision of services is subject to contract with the CHIF. Patients need a referral from a primary care physician to access specialized ambulatory care.

In 2012, 10 304 515 specialist consultations were provided, 9 795 283 in CHIF-contracted polyclinics and 509 232 in polyclinics that had no contract with the CHIF (CNIPH, 2013). The share of specialized consultations among all CHIF-contracted ambulatory care consultations (i.e. primary and specialized care) was 23% in 2012, which may be an indication that some specialized care was used inappropriately (CNIPH, 2013). The introduction of a new model of referrals and a new payment system for primary care in 2013 (see Section 3.7) is aimed at improving the appropriate use of care. According to the new model of referrals, establishing a diagnosis, treatment and follow-up of chronic patients is transferred to primary health care physicians. Preoperative diagnostics should be conducted in community health care centres, not in hospitals. Only primary health care physicians are able to prescribe sick leave, whereas hospital doctors may only recommend it or recommend therapy (Bodiroga-Vukobrat, 2013).

Inpatient care

Inpatient (secondary) care facilities include hospitals, polyclinics and special hospitals for rehabilitation. Hospitals are divided into general hospitals and specialist hospitals. All general, and the majority of specialist, hospitals are owned by the counties. While general hospitals primarily serve the populations of their respective counties, specialist hospitals serve the entire population of Croatia. All general hospitals must have the following departments: obstetrics and gynaecology, internal medicine, surgery and inpatient paediatric care. Other departments are optional and depend on the needs of the county populations and on the availability of hospitals or polyclinics offering those services in neighbouring counties. Specialist hospitals are organized around specific acute diseases, chronic illnesses or population groups.

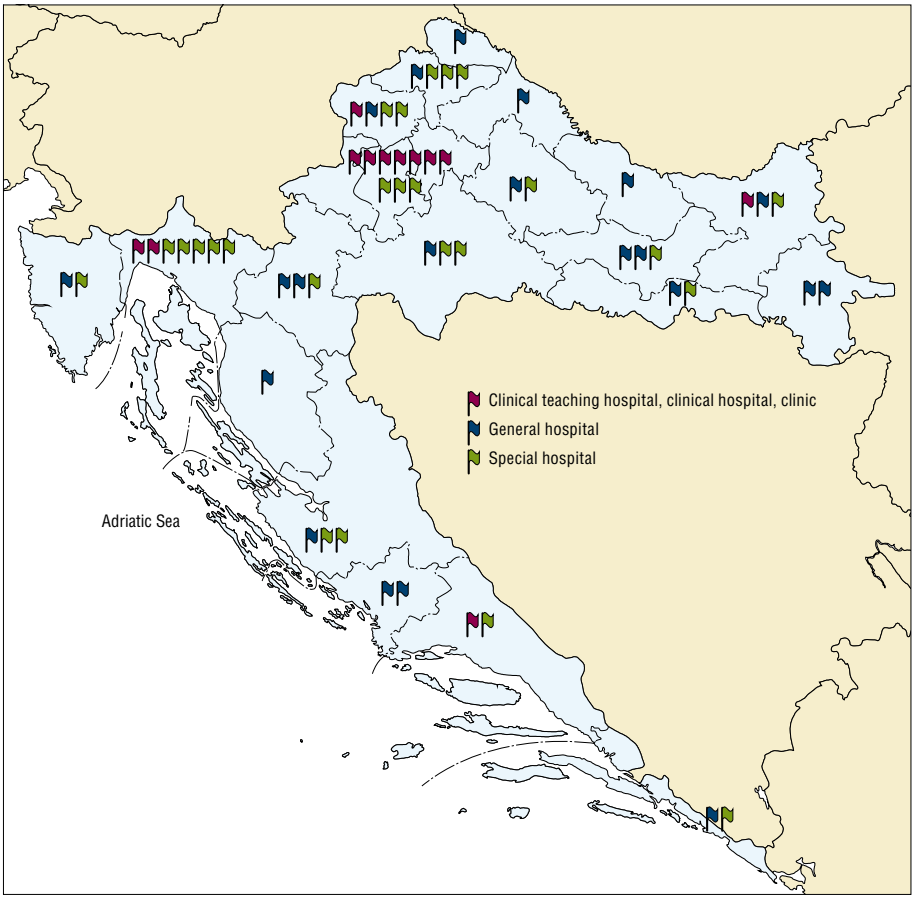
Tertiary care is provided in State-owned clinical hospitals and clinical hospital centres. The Minister of Health determines which institutions are classified as a clinical hospital or a clinical hospital centre, according to the

criteria set in the Health Care Act. Besides providing care of the highest complexity, tertiary care institutions also engage in medical education and research. Clinical hospitals are general hospitals that provide specialist care at a teaching hospital level in at least four specialties. Clinical hospital centres are general hospitals in which more than half the departments are at teaching hospital level, and which provide medical education in at least half the teaching programmes taught in the faculties of medicine, dentistry, pharmacy and biochemistry.

In order to access secondary or tertiary hospital care services contracted by the CHIF, patients need a referral from their primary care doctor, except for medical emergencies in which case no referral is needed. Waiting times for certain elective treatments in hospitals are long (e.g. more than 12 months for hip and knee replacements) but significant efforts have been made in this area (a survey of waiting times was carried out in 2004, 2005 and 2006, and a package of measures aimed at reducing waiting lists was prepared based on these indicators) and waiting times are declining (Slobodna Dalmacija, 2009). The implementation of e-waiting lists (see Section 4.1.4) is likely to contribute to a further reduction in waiting times.

Distribution of hospitals is uneven, with the largest number of hospitals located in central Croatia, mainly in the Zagreb county and the city of Zagreb (see Fig. 5.3). A recent (2009) analysis of a pilot PATH project in Croatia, conducted on a sample of hospitals that volunteered to take part in the pilot, indicated the existence of marked differences in the quality of care in the hospitals. For example, the mortality rate for myocardial infarction ranged from 1.9% to 21.4%, while the mortality for stroke ranged from 12.5% to 45.5% (Bodiroga-Vukobrat, 2012). It is not known whether there are any measures in place aimed at improving the quality of hospital care.

Fig. 5.3
Distribution of hospitals in Croatia



Source: Institute of Economics Zagreb (2012).

5.4.1 Day care

Day care is provided in day care hospital wards and hospital haemodialysis wards. In 2012, 278 840 patients received day care services (up from 199 052 in 2009), with 813 840 hospital days. These mainly comprised haemodialysis (69 217 episodes of care) and day care in the following areas: internal medicine (92 637 episodes of care), paediatrics (30 956), infectious diseases (19 291), psychiatry (24 497), and oncology and radiology (4625) (CNIPH, 2013).

It is unknown what proportion of hospital care is provided in day care settings. It seems that there are currently no measures in place that are aimed at shifting more care from inpatient to outpatient settings.

5.5 Emergency care

Before the reorganization of emergency care, which started in 2009, the provision of outpatient EMS was fragmented. There were four regional EMS institutions (in Zagreb, Rijeka, Split and Osijek), which had jurisdiction over a total of 17% of the surface area of Croatia and provided care for 37% of the population. The remaining surface area and population were catered for by 63 EMS units in health centres and 59 units of family physicians on duty and standby, who worked on an out-of-hospital basis in health care centres that were exceptionally far away or located in scarcely populated areas (CNIPH, 2010).

The national EMS reform, which started in 2009, introduced a model of a country-wide network of County Institutes for Emergency Medicine (each with a dispatch unit) under the umbrella of the Croatian Institute for Emergency Medicine. A County Institute for Emergency Medicine was established in each county, i.e. 21 in total. These are responsible for maintaining county call centres and for the provision of first aid/emergency medical care (in the area of the county). Care is provided by two types of mobile team (using an ambulance vehicle with a driver): Team 1 consists of a medical doctor and a nurse or technician; Team 2, dispatched to less severe cases than Team 1, consists of two specialist nurses or technicians (this type of mobile team was introduced because of the lack of doctors). It is planned that the network will cover the entire country and the goal is to have at least one emergency team in each 25 km radius. By introducing this network, for the first time, the number, composition and type of EMS teams operating in specific areas will be prescribed. The targeted average response time should be reduced to 10 minutes in urban areas and 20 minutes in rural areas in 80% of cases. Another goal is to reduce the time from the call to the arrival of the patient in the EMS department and beginning of the intervention to less than one hour (from two hours presently).

In 2012, there were 79 EMS units operating on a 24/7 basis, with at least two type 1 teams and one type 2 team, and 49 units (in rural areas) on duty and standby. About 80% of the population was covered by the EMS units and 20% by on-duty family physicians. The number of permanently employed EMS physicians was 567, including 91 EMS specialists (CNIPH, 2013).

The next important step in the EMS reform is the integration of all hospital emergency services into one emergency care hospital department; however, the implementation schedule for this part of the reform is not well defined. At the end of 2012 there were nine hospital departments of emergency medicine. In about a third of general hospitals, emergency services are not yet integrated into

one emergency care hospital department; it is difficult to provide hospital EMS for patients with multiple symptoms and waiting times for patients are longer. Also, there is a plan to separate medical transport from emergency transport so that medical transport for the so-called "cold" transport of patients will stay with the medical centres, whereas emergency transport will be transferred to the County Institutes for Emergency Medicine (Bodiroga-Vukobrat, 2011).

The EMS reform is supported by greater use of telemedicine (the Croatian Institute of Telemedicine was established in 2005 and, following the 2010 amendments to the Health Care Act, telemedicine activity has been systematically introduced in Croatia); the introduction (in 2010) of specialization in emergency medicine for medical doctors and additional specialist professional training in EMS for nurses; standardization of medical equipment (equal distribution and standards of equipment); and the ongoing development of emergency protocols/algorithms (these are developed by the National Institute for Emergency Medicine in order to assure quality of EMS). The concentration of EMS teams is greater in larger cities since the number of teams that may be contracted (according to the standards of contracts signed with the CHIF) depends on the size of the population (eight teams may be contracted to cover a population of 74 000–150 000).

Box 5.2

Patient pathway in an emergency care episode*

In Croatia, a man with acute appendicitis on a Sunday morning would take the following steps:

The man (or someone else) calls the 112 emergency number (covering, since 2008, all emergency services**). His call will be answered by a triage assistant who decides if he can come for further investigation (the diagnosis is not made yet) at the hospital emergency department or if a mobile team should be dispatched to his home. If a mobile team is dispatched, they make the diagnosis and bring the patient to the nearest emergency department.

At the hospital emergency department, a specialized nurse does the triage and estimates the urgency of the complaint. If the county hospital has no emergency department, the patient will be admitted by a surgery department or other department to which he is referred by a medical doctor from the County Institute of Emergency Medicine.

The waiting time depends on the urgency of the case.

Notes: *The emergency care pathway may be different in rural areas or on the islands;
**Prior to the introduction of the 112 emergency number, there were three separate emergency numbers (for the police, fire brigade and EMS).

5.6 Pharmaceutical care

Distribution and provision

In 2011, there were 16 licensed pharmaceutical manufacturers in Croatia. Domestic manufacturers held 20% of the market share by value produced and 33% by volume produced (Ministry of Health and Social Welfare, 2011). The major domestic pharmaceutical companies are Pliva, Belupo and Jadran Galenski Laboratorij (Jakševac-Mikša, 2007).

Pharmaceuticals can be sold in public pharmacies contracted by the CHIF[4] (1199 non-hospital pharmacies and 57 hospital pharmacies were contracted by the CHIF in 2012) (CNIPH, 2013). The sale of prescription drugs is restricted to pharmacies and dispensing can only be done by a pharmacist. OTC medicines are dispensed mainly through pharmacies (dispensing can also be done by a pharmaceutical technician), but some OTC drugs can also be sold in specialized retail shops (with special permission from the HALMED) (Jakševac-Mikša, 2007).

There is currently one pharmacy per 4000 inhabitants in Croatia, compared to one pharmacy per 3000 inhabitants in the EU on average (Government of the Republic of Croatia, 2012). New pharmacies are set up in the largest towns, while the pharmacy network in rural and underdeveloped areas remains poorly developed.

Accessibility

Pharmaceuticals covered by the CHIF are classified into two lists: the basic list with all essential medicines covered within the MHI scheme, and the supplemental list with medicines covered in part by the MHI scheme and in part by OOP payments. Medicines are free of charge if they are on the basic list, regardless of the patient's situation (age, financial status, inpatient or outpatient setting, etc.). There is a prescription fee for all reimbursable medicines of HRK 10 (approximately €1) per prescription. Private health insurance schemes do not cover medicines.

Concessions are made for certain groups (patients who cannot afford them, persons under the age of 18, pregnant women) and particular conditions (all malignant diseases, chronic psychiatric diseases, haemodialysis, malaria, tuberculosis, sexually transmitted diseases and HIV/AIDS, Expanded Programme on Immunization (EPI) vaccines for children) – in these cases, pharmaceuticals are free of charge (Ministry of Health and Social Welfare, 2011).

[4] OTC sales points are not contracted by the CHIF.

Consumption

The HALMED is in charge of overseeing and monitoring consumption of medicinal products and promotion of their rational use. A national programme and committee have also been established to monitor and promote rational use of medicines. Public education campaigns on rational medicine use have been conducted in the last few years and there are legal provisions in place governing the licensing and prescribing practices of prescribers. Furthermore, dispensing by prescribers is restricted by legal provisions (Ministry of Health and Social Welfare, 2011). According to recent OECD data, consumption of antibiotics in Croatia is similar to the average consumption in the 23 EU countries surveyed (21 DDDs per 1000 people per day in Croatia in 2010 compared to 20 in the 23 EU countries) (OECD, 2012c).

Major changes in recent years

In 2009–2010, Croatia substantially reformed its pricing and reimbursement system for medicines, with the aims of maximizing value for invested funds; increasing efficiency and transparency in high-level decision-making; and ensuring ethical pharmaceutical marketing practices (Innovative Health Initiative, 2012). The new regulatory framework is described in Section 2.8.4.

5.7 Rehabilitation/intermediate care

Rehabilitation as a medical specialty was introduced in the mid-1950s. Physiatrists (physicians who completed their specialization in rehabilitation) organized themselves in the Croatian Society for Physical Medicine and Rehabilitation established in 1947 (renamed Croatian Society of Physical and Rehabilitation Medicine in 2005). Its functions include organization of CME in the area of physical medicine and rehabilitation, and proposing measures for improving the organization of scientific and professional work in this area.

Rehabilitation services in Croatia cover three types of care: orthopaedics, balneology and physical medicine. At the end of 2011, there were 3954 physical medicine and rehabilitation beds in 13 specialist hospitals and health resorts (CNIPH, 2012).

Croatia has a number of sanatoria (spas) and medicinal mud baths, which provide prevention, treatment and rehabilitation services using natural mineral springs. Some sanatoria are registered as special hospitals, due to the additional medical services they provide. Most offer services to tourists, generating additional income.

Although the number of both rehabilitation beds and physical and rehabilitation medicine (PRM) specialists per 100 000 inhabitants is very high in Croatia, compared to other EU Member States, the ratio of physiotherapists and other rehabilitation professionals, such as occupational and speech therapists, psychologists, social workers, nurses and others, who form an important part of the rehabilitation team, is relatively low. There have also been shortcomings in education, which has been focused on rheumatology rather than rehabilitation, and in the quality and efficiency of rehabilitation medicine. These efficiencies are now being addressed, including the introduction of a new curriculum, imposed as part of the process of updating all specialty training in Croatia following EU Directive 2005/36/EC (Vlak et al., 2014).

5.8 Long-term care

LTC in Croatia is mainly organized within the social welfare system. Most of it is financed from the State budget (96%), while the remainder comes from OOP payments of the beneficiaries and from local and regional self-governing units. In 2009, financing the social welfare system amounted to 0.89% of GDP (Bodiroga-Vukobrat, 2012) but it is not known how much of it was spent on LTC.

Health protection for the elderly and infirm is provided through the health care system (CHIF) and includes sanitary transportation and home care. However, some non-LTC medical services may actually be LTC services in disguise as about one third of all hospital patients are over 65 (Bodiroga-Vukobrat, 2013).

LTC within the social welfare system [5]

LTC is currently mainly provided in institutional settings. The legal framework for social benefits includes the 2013 Social Care Act, the 2009 Foster Families Act and numerous by-laws. The Social Care Act includes provisions on generational solidarity, the objectives of which are to keep the elderly in their own homes and with their family; promote their social inclusion; and improve their quality of life by developing and expanding non-institutional services and volunteering. The aims of the Foster Families Act are the deinstitutionalization of LTC and to increase the number of foster families and their professionalization.

Recipients of social assistance and welfare are divided into two basic categories: (1) those who earn no income or whose income is below a certain threshold; and (2) persons who receive assistance (financial and other) in

[5] Based on Bodiroga-Vukobrat (2012).

order to satisfy their personal needs, resulting mostly from disability, old age, psychological conditions, addiction, etc. (including children and young persons without parental care; children and young persons with behavioural disorders; and victims of family violence). Social welfare beneficiaries are entitled to cash benefits, benefits in kind and social services.

There are currently eight types of cash benefits according to the Social Care Act, including an allowance for assistance and care that is granted to persons unable to care for themselves, on a permanent or temporary basis, and personal disability allowance. Means-testing is applied. Large cities and cities which are the seats of counties are obliged to provide other types of material support and assistance, including the promotion of volunteering and the work of civil society organizations.

There are 10 categories of social services (benefits in kind), including in-home assistance and care. In-home assistance and care typically includes delivery of meals, housework and assistance with personal hygiene. It is awarded to persons with secured housing but who are, due to old age, disability or other grave health conditions, unable to take care of their personal needs alone or with the help of their family. The condition for receiving this social service is that the assistance cannot be obtained from their parents, spouse or children, nor based on life maintenance and support agreements or other regulations.

A range of institutionalized forms of care, such as permanent or temporary accommodation, or even daily or shorter stays in care centres, is also available (see Section 4.1).

The role of civil-sector associations in LTC arrangements is mostly concentrated on the promotion of active ageing, healthy living and overall social inclusion of disabled persons and the elderly. There are various pensioners' associations organized at national, regional and local levels. The National Pensioners' Convention of Croatia is one of the oldest civil society organizations in Croatia, with around 270 000 members, 300 associations and 800 branches and clubs at the local level.

The continuing problem of LTC in Croatia is that it is dispersed between the health and social welfare systems, which has a negative impact on the accessibility, recognizability and adequacy of the provided services. According to the World Bank, LTC for many elderly people is provided at high cost,

involving long waiting lists at hospitals and other facilities within the health system even though social services would better satisfy the needs of such persons than medical services (Bodiroga-Vukobrat, 2013).

There is a considerable coverage gap regarding the estimated number of dependent people and those who have actually received some type of care and the shortages of formal services in institutionalized context. Waiting lists for county nursing homes are long, while private providers are financially unaffordable for many. This will likely increase the demand for institutionalized types of care (Bodiroga-Vukobrat, 2013) and may also increase the burden borne by family carers.

According to the second European Quality of Life Survey (EQLS), conducted in 2007–2008, Croatia is among the top three countries in Europe (after Italy and Estonia) with the greatest scale of family care. The age cohort 50–64 bears the greatest burden of caring for the elderly in Croatia: 24% of female respondents and 13% of male respondents in that age group reported having to care for elderly relatives at least several times a week (European Foundation for the Improvement of Living and Working Conditions, 2010) (see also Section 5.9).

The new Draft Social Care Act is currently in the process of public debate. If enacted, it will be the third, completely new legislative instrument in this area in the last three years. The aim of the Act is to increase efficiency, transparency, access to information, professionality and to raise awareness of beneficiaries and other members of society of their rights. It therefore proposes: new criteria of eligibility for social welfare assistance and services; the establishment of quality standards for social services; measures for further deinstitutionalization and the creation of new non-institutional high-quality types of service that will enable social inclusion of beneficiaries; and the establishment of a unified registry of beneficiaries of social services and compensations. Guaranteed minimum income as a new form of social welfare compensation will be introduced, which will be determined by authorities each year in accordance with available resources. Each person or household with insufficient means of livelihood will be entitled to this and in order to establish eligibility, income will be assets-means tested, meaning that new criteria for the determination of personal assets will be established. Public debate on the Draft Act was open until 13 October 2013 (Bodiroga-Vukobrat, 2013).

5.9 Services for informal carers

Informal care refers to the provision of unpaid activities, typically by a family member to an individual who requires help with basic activities of daily living (e.g. people with dementia, physical disabilities, the terminally ill and those with mental problems).

Despite changes in the social structure, including changes to the family structure and the weakening of traditional intergenerational support, spouses still play an important role in the provision of informal LTC. In Croatia, spouses, especially wives, are the primary caregivers for the elderly. Nevertheless, there is still a large number of the elderly population who live alone and who are at risk of having unmet LTC needs. Informal care is also provided by friends and neighbours. Recent research findings show that help and support that the elderly receive from friends is similar in cities and in villages, although neighbourly help is somewhat greater in non-urban areas. The elderly who reside in rural and semi-urban areas, however, have fewer opportunities for LTC because of the weak network, organization and availability of both informal and formal LTC services overall (Chakraborty, 2010).

Virtually no services are available for informal carers in Croatia. Financial compensation or an extended period of maternity leave during the first year after giving birth is available to parents of ill or disabled children. Care provided by mothers taking care of disabled children is regulated through the system of social welfare.

5.10 Palliative care

There is no adequate system of palliative care in Croatia. There are only several institutions that provide some forms of palliative care (in Zagreb, Rijeka, Novi Marof, Duga Resa and Knin). Palliative beds are also available in some hospitals, and some counties have palliative care teams visiting patients at home and providing medical and social welfare services. These teams often rely on volunteers. The quality of palliative care is not monitored as there are no quality parameters in place.

In 2011, amendments to the Health Care Act enabled the performance of palliative care at secondary level and the establishment of departments for palliative care within hospitals. According to the Strategic Plan for Palliative Care 2014–2016 there are currently 142 contracted hospital palliative beds (Bodiroga-Vukobrat, 2013).

The Plan was adopted by the Croatian Government in December 2013. The goal of this Plan is to assure equal availability of palliative and social care services in all parts of the country. The Plan is based on estimates that only a few hundred out of more than 50 000 persons who die each year receive palliative care. The needs exceed capacity, since it is estimated that a minimum of 20% of tumour patients and 5% of non-oncological patients need palliative care in the last year of their life. According to the Plan, the goal is to organize palliative care on three levels: home care (provided by family medicine physicians, community nurses and home care); extended palliative care (provided by social services); and hospital care. The Plan envisages the opening of five regional centres for palliative care in the next four years, with the goal being at least 175 palliative beds per clinical hospital and 85 beds per special hospital by 2016, with another 85 beds allocated in children's and psychiatric wards, health facilities at the primary level, prison hospitals, and so on (Bodiroga-Vukobrat, 2013). It also assumes that 1500 palliative care health professionals will be educated and that the number of volunteers will increase from the current 50 to 500 in 2015.

5.11 Mental health care

The Act on Protection of Persons with Mental Disorders was approved by the Croatian Parliament in 1997, defining the rights of persons with mental disorders to protection and care. It also specifies the conditions (i.e. diseases) under 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 Act, written consent was required from any person admitted to a psychiatric hospital, and compulsory hospitalizations were subject to court supervision (Kozumplik, Jukić & Goreta, 2003) but this was abolished in 1999. Furthermore, the period in which the hospital was obliged to inform the court about an involuntarily admitted person was prolonged from 12 to 72 hours (for technical reasons, such as admittance on weekends).

In 2010, the Ministry of Health developed the Mental Health Care Strategy for 2011–2016. Its main objectives are the promotion of mental health in terms of improving the mental health of the population but also promoting awareness of mental health issues in the population; improved preventive activities in the area of mental health care; early intervention and treatment of mental disorders; improvement of the quality of life of the mentally disabled through social inclusion and protection of their rights and dignity; harmonization of the Strategy with other specific strategies and programmes addressing mental health; and the development and improvement of information systems and research in the area of mental health.

Mental health services are mainly provided in institutions and the number of psychiatric beds has been increasing since 2005 (see Section 4.1). This is impairing the quality of life of patients and preventing them from being properly reintegrated into society. Psychiatric beds are located in general and clinical hospitals as well as in specialist psychiatric hospitals. Community mental health care, except for certain programmes such as addiction prevention, remains underdeveloped, and specific and well-organized programmes of mental health care in the community are lacking. Since August 2009, centres for mental health protection and addicition prevention form part of the county institutes of public health.

There are geographical differences in accessibility of mental health services across the country. There are also deficiencies in the quality of mental health care – this is because of the lack of the right curriculum in the area of mental health and the lack of practical experience of mental health care professionals.

5.12 Dental care

The basic package of dental services provided by the CHIF ensures almost all basic dental procedures (restorative, endodontic, basic periodontal, oral surgery, oral diseases, orthodontics up to 18 years, and some prosthodontics) and emergency dental care. The CHIF sets the list, content and price of each service provided within the MHI scheme and actively checks billing to ensure that bills reflect the amount of work done. The Croatian Dental Chamber sets standards for the services and is also responsible for monitoring the quality of dental care.

Dental services are delivered through a network of dental offices with teams consisting of a dentist and a dental assistant. In 2012, dental care was provided in 1845 teams with 1722 dental medicine teams, 44 preventive and paediatric dentistry specialist teams and 79 other specialist teams. In addition, dental services were also provided by 683 teams without a contract with the CHIF (CNIPH, 2013).

The basic accessibility of dental services is good but is not equal for all citizens – access is more difficult in rural/underdeveloped areas and on the islands.

5.13 Complementary and alternative medicine

Croatia has no defined legal framework for complementary and alternative medicine (CAM). Only acupuncture is recognized as a medical treatment and reimbursed by the CHIF under the MHI scheme – and this only if it is provided by a medical doctor with the purpose of relieving pain in a health care institution contracted by the CHIF. The Medical Chamber and the Ministry of Health supervise the quality of acupuncture.

CAM therapists are organized in the Croatian Federation for Natural, Energy and Spiritual Medicine (HUPED). The HUPED was established in 2000 and provides its members (currently more than 10 000) with legal and institutional support, with the final goal of establishing regulation of CAM in Croatia following the example of other EU countries.

5.14 Health services for specific populations

Military personnel are entitled to the same care and have the same rights as civilian patients. In addition, they also receive specific medical care (check-ups, monitoring, basic medical care, etc.) in their military units.

Prisoners receive primary medical care (GP services) in prisons and more complex care either within the regular health care system or, if they need hospitalization, in a special prison hospital established and run by the Ministry of Justice.

Health care for asylum-seekers includes emergency medical care and necessary treatment of illness. Asylum-seekers who had been subjected to torture, rape or other serious forms of violence, as well those with special needs, will be given treatment adequate to their needs.

6. Principal health reforms

The focus of reforms that were implemented between 2006 and 2013 was the financial stabilization of the health care system. The key reform, implemented between 2008 and 2011, contained a number of measures: diversification of public revenue collection mechanisms through the introduction of new mandatory and complementary health insurance contributions; increases in co-payments; and measures to resolve accumulated arrears. Other important reforms included changes in the payment mechanisms for primary and hospital care; pharmaceutical pricing and reimbursement reform; and changes to health care provision (e.g. emergency care reform).

The launch of many of these reforms was not difficult as for many of them policy options were not publicly discussed and no comprehensive implementation plans were developed. However, as a result, many of them soon faced serious implementation problems and some were only partially implemented.

Little research is available on the policy process of health care reforms in Croatia. However, it seems that reforms often lack strategic foundations and/or projections that can be analysed and scrutinized by the public, and there is little evaluation of the outcomes of reforms.

Planned reform activities for 2014–2016 will mainly be directed at achieving cost–effectiveness in the hospital sector.

6.1 Analysis of recent reforms

This chapter looks at reforms that were introduced between the publication of the last HiT report for Croatia (Vončina et al., 2006), i.e. 2006, and the end of 2013. The key reform implemented in this period was the financial stabilization

and rationalization reform. It spans between 2008 and 2011 and comprises a number of measures. The chapter also provides a brief discussion of the current debates and reform proposals discussed in late 2013 (with the cut-off date being 31 December 2013).

Little research is available on the policy process of health care reforms in Croatia. There is also hardly any evaluation of the reform outcomes. According to the recent report by the European Commission's expert network on the socioeconomic impact of social reforms[1], health care reforms introduced in recent years in Croatia lacked strategic foundations (reforms were often presented as a series of PowerPoint presentations) and/or projections that could be analysed and scrutinized by the public. Not enough attention was paid to the professional opinions and experiences of those directly involved in the provision of health care during the drafting and implementation of the reforms. In addition, the health care reforms were frequently riddled with scandals and controversies, which undermined their efficiency (Bodiroga-Vukobrat, 2011 and 2012).

6.1.1 Financial stabilization reforms 2008–2013

The 2008–2011 reform

According to the Ministry of Health, financial reform of the health care system was necessary for several reasons: an overreliance on one source of financing (with just one third of the population contributing and the indebtedness of both the CHIF and health care providers) was threatening the medium- and long-term sustainability of the health system; there was a perception of corruption and the popularity of the medical profession was on the decline, which was contributing to a shortage of doctors; and the accessibility of medical care was questionable (Bodiroga-Vukobrat, 2009). Although the reform was launched in order to address long-standing problems of deficits in the health care system and had been planned before the start of the economic crisis (see Section 1.2), since its launch happened to coincide with the deterioration of the economic situation, it came to be promoted as part of an antirecessionary package.

On 11 December 2008, the government announced on its web pages that the Proposition for Reform of the Health System had been accepted following a programme of public presentations and debates. Some of the stakeholders, such as the World Bank, had been asked to give their (non-binding) opinion during this process. During the public debate the Minister changed the proposal, removing the introduction of a parallel private basic medical insurance, which

[1] Analytical Support on the Socio-Economic Impact of Social Protection Reforms: www.socialprotection.eu.

was the most debatable element (both the political opposition and public opinion had been against it). Moreover, although the shortage of doctors had not initially been mentioned, the creation of a special fund to address this problem (based on a loan from the World Bank) was announced (Bodiroga-Vukobrat, 2009).

The 2008 reform contained a number of measures and focused on financial stabilization (see Table 6.1) and increasing system efficiency (see Section 6.1.2). The main features of the financial stabilization component of the reform were the diversification of public revenue collection mechanisms; a more explicit determination of the State's obligations on behalf of the non-contributing insured; aligning the public–private split in funding to those of other central European countries through increasing co-payment levels and reducing the extent of the population categories exempt from co-payments; and introducing stringent financial discipline and the resolution of accumulated arrears.

Table 6.1

Financial stabilization measures of the 2008–2011 reform

Measure	Specific actions
Diversification of public revenue	• MHI contributions for the retired with pension under the average salary paid from general taxation: rate 1% of gross pension
	• retired with pension over the average salary pay MHI contributions: rate 3% of gross pension
	• MHI contributions for the unemployed paid from general taxation: rate 5% of fixed sum
	• MHI contributions for pupils, students, war veterans, soldiers, asylum-seekers, etc. paid in bulk from the State budget
	• hypothecated cigarette taxation: 32% of excise duty
	• tax on mandatory car insurance premiums: 7% (to cover the cost of health care provided due to traffic accidents)
	• MHI contributions for 100% disabled, organ donors, multiple blood donors, pupils, students and all individuals with income per household member under the national poverty census threshold: paid from general taxation
	• CHI contributions: price increase from HRK 50 to HRK 80 per month for the retired and HRK 80 to HRK 130 for the employed with high salaries
Changes in co-payment policy	• inpatient and outpatient hospital services: 20% of price (previously 15–50%)
	• dentistry: 20% of price (previously 15–50%)
	• primary care family medicine and gynaecology: deductible of HRK 15* per visit
	• prescriptions – deductible of HRK 15* per prescription
	• price cap for all co-payments (maximum): HRK 3000** per episode of illness
	• reduced number of people exempt from co-payments
Measures to resolve accumulated arrears	• stringent control of expenditure on all levels of the system
	• monitoring of debts and arrears
	• ban on increasing arrears for health care providers

Source: Vončina et al. (2012).
Notes: *HRK 10 (€1) from 1 October 2013; **HRK 2000 (€264) from 1 October 2013; CHI = complementary health insurance; MHI= mandatory health insurance.

The financial stabilization measures were opposed by the Social Democratic Party (the leading opposition political party) and the unions of all medical professionals, who criticized the transfer of financing to citizens and the cuts in entitlements. On the other hand, the World Bank has welcomed the proposed reforms, which were in line with its recommendations set out in the published Country Partnership Strategy for 2009–2012 (Bodiroga-Vukobrat, 2010). The reforms were also supported by the Ministry of Finance.

Implementation of the measures caused dissatisfaction among patients (for example, the new financial limits caused extended waiting lists for elective hospital care) as well as providers; and the organizational changes and decreases in salaries led to many conflicts and public debates between health care workers and the Ministry of Health. As a result, some of the measures (e.g. 8-hours shifts for the provision of 24/7 services) have been withdrawn. At the time of writing, no formal assessment of the reform measures was available.

Improving the financial position of public hospitals

Joint hospital procurement

While initially the health care sector was largely unaffected by the austerity measures implemented in response to the financial crisis, since 2012 (after the new centre-left government took office), it has faced more pressure to rationalize health care costs. One of the measures that was meant to achieve significant savings was the implementation of a joint hospital procurement programme for public hospitals.

Public hospitals, which previously procured all medical products and other goods individually, were directed to form joint purchasing bodies for items that account for the largest share of expenditure, such as medicines, medical devices and energy. A decentralized approach was adopted, whereby a number of hospitals were assigned to procure categories of goods for all participating hospitals. Hospitals that had previously achieved best value for money for certain procurement categories were selected to be the central purchasers. Central procurement was launched for 15 groups of goods and services in October 2012.

Despite substantial opposition from manufacturers and retailers, a number of joint procurement tenders have been successfully concluded. So far, the reform is proving to be successful in reducing prices and achieving savings, and in standardizing the quality of procured goods.

Sanation of public hospitals

The problem of poor hospital finances has persisted over many years (see Section 3.7.1) and in the last 15 years, there were more than 10 cases where hospitals had to be financially reorganized in the short term (Bodiroga-Vukobrat, 2013). In 2012, the Act on Sanation[2] of Public Institutions was adopted, mainly with the aim of improving the finances of heavily indebted county-owned hospitals. It was conceived as one of the measures aimed at reducing the overall public debt and improving the efficiency of the public sector (measures were also undertaken in other sectors).

The Act was introduced as an operational measure and no regular reform process (e.g. public consultation) was therefore applicable. It enables temporary centralization of the hospital management, whereby hospitals transfer their management to the Ministry of Health during financial reorganization and for two years following the end of this procedure. This is financed from the State budget.

In April 2013, the government adopted decisions on the financial reorganization of nine State-owned clinical hospitals at a cost of HRK 1.9 billion (€0.25 billion) and an additional 25 health care facilities (mostly county-owned hospitals) at a cost of HRK 1.13 billion (€0.15 billion) (Bodiroga-Vukobrat, 2013). The measure is to be applied to all hospitals whose expenditures exceeded revenues at the end of 2013. At the time of writing, no evaluation of this measure was available. However, both the hospitals and the CHI continue to generate new debts (and at the same time both the State budget for health care and co-payments have been reduced). Problems with poor hospital management also persist due to the political designation of hospital directors and managers.

6.1.2 Other reforms

Other reforms that were introduced between 2006 and 31 December 2013 are listed in Table 6.2. Some of these were part of the 2008–2011 reform (for more information, see Vončina et al., 2012). Although some of the reforms were encouraged by previous experiences (for example, the introduction of a prospective case-adjusted hospital payment system, based on DRGs, was encouraged by evidence on efficiency gains reported since the implementation of the payment per therapeutic procedure (PPTP) schedule in 2005) (Bodiroga-Vukobrat, 2012), most measures had not been tested before.

[2] The word "sanation" refers to the act of healing. In the context of the Croatian health care system it means restoring the financial position and improving management.

In 2011, the Social Democratic Party won the election together with several coalition parties, and the right-centre Croatian Democratic Union (HDZ), in power since the 1990s, became the opposition party (see Section 1.3). The Government Programme for the 2011–2015 Mandate recognized that citizens have over the years become increasingly burdened with health care financing and the focus has been shifted to patient-oriented health policy, maintaining solidarity between the healthy and the ill, the rich and the poor, and the young and the elderly. This is to be achieved through a number of measures, such as the reorganization of emergency medical care, primary health care and hospitals; education of human resources; more emphasis on preventive measures; and the shortening of waiting lists.

The launch of the majority of the reforms listed in Table 6.2 was not difficult as many of the proposed policy options were not publicly discussed and no comprehensive implementation plans were developed (as a result many of them soon faced serious implementation problems; see below).

Table 6.2
Summary of health care reforms, 2006–2013

Year introduced	Reforms	Implementation
2008	Primary care payment mechanisms reform	Completed (see Chapter 3)
2009	Introduction of concessions in primary care	Ongoing (see Chapter 5)
2009	Hospital payment mechanisms reform	Completed (see Chapter 3)
2009	Pharmaceutical pricing and reimbursement reform	Completed (see Chapter 2)
2009	Emergency care reform	Ongoing (see Chapter 5)
2011	Primary health care IT system reform	Ongoing (see Chapter 2)
2011	Introduction of new medical training/specialization programmes	Ongoing (see Chapter 4)
2013	Primary and specialized care payment mechanisms reform	Ongoing (see Chapter 3)

The large number of changes that have been introduced and the speed of their implementation has resulted in insufficient preparation of some measures, delays and problems with implementation. For example, the 2008 primary care payment model was not precisely developed. Concessions in primary care were opposed by the Coordination of Croatian Family Medicine (KoHOM; a professional organization of physicians practising in general/family medicine established in 2008), which claimed that the obligations arising from the concessions were not clear (Bodiroga-Vukobrat, 2010). Also, the procedure for granting concessions proved to be difficult and time-consuming in practice and the deadline for its completion had to be extended several times (Bodiroga-Vukobrat, 2012). In the case of EMS reform, some county institutes were not prepared and did not have enough resources (a lack of staff and proper training,

etc.) to assure appropriate coverage for their entire area, since the procedures for the contracting of EMS teams by the CHIF in certain geographical areas were not completed in due time.

Nevertheless, several reforms (the pharmaceutical pricing and reimbursement reform; the 2013 payment mechanisms reform; and also the EMS reform) seem to have been successfully implemented. However, no formal evaluation of these reforms is available.

6.2 Future developments[3]

According to the new Strategic Plan of the Ministry of Health for 2014–2016 (see Section 2.3), within the designated target of making health care more accessible, implementation of several measures is envisaged: reorganization and improvement of EMS; improving access to public health services; development and standardization of the infrastructure; investment in human resources and health IT; and improvement of telemedicine (Bodiroga-Vukobrat, 2013).

Future activities will mainly be directed at achieving cost–effectiveness in the hospital sector and will include: restructuring and rationalization of acute hospital capacity (through drafting a Hospital Master Plan); centralization of hospital procurement of electricity, postal services and consumable supplies; rationalization of non-medical activities of hospitals (e.g. through outsourcing); drafting of the national classification and centralization of procurement of the most expensive medical products and prostheses; and containment of the cost of prescription medicines. There are also ambitious plans for the absorption of EU funds in the areas of capital investment, human resources and public health.

[3] Based on Bodiroga-Vukobrat (2012).

7. Assessment of the health system

Since 2000, health policy goals in the Croatian health care system have shifted their focus from reducing the prevalence of specific diseases to achieving health outcomes. The key objectives of the health system for the period between 2006 and 2012 can be found in two strategy documents: the National Strategy of Health Care Development 2006–2011 and the National Health Care Strategy 2012–2020. While the latter is currently being implemented, the 2006–2011 Strategy has not been formally evaluated.

The breadth of public coverage is virtually universal, the scope of MHI is broad, and sick leave compensation is one of the most generous by international standards. However, the depth of MHI cover has been eroding since the early 2000s, weakening the financial protection of the health care system. Health care financing is highly dependent on the employment ratio and wage level (financing mainly comes from employment-related social insurance payments) and, thus, on the economic situation. Health expenditure per head in Croatia being lower than in most western European countries may, to some extent, explain the existence of informal payments and corruption in health care.

Health care financing is based on regressive sources (e.g. insurance contributions, indirect taxation) and this regressive nature seems to have increased in the first decade of the 2000s. The impact of the health insurance reform of 2008–2011 on the regressive character of health care financing remains unclear.

There are no recent studies of user experiences with the health care system and it is therefore difficult to assess whether public perception has changed. Long waiting times have been a long-standing reason for low user satisfaction with the Croatian health care system, but the development of e-health may bring waiting times under control.

Studies of equity of access among the Croatian population are rare. Geographical distribution of the health care infrastructure and other resources varies and people living in more remote areas, such as the islands off the Adriatic coast, may find it harder to access health care. Apart from the place of residence, access also varies by income, education level, activity, age and sex, as evidenced by differences in self-reported unmet need for medical care.

Overall, health outcomes in Croatia can be considered to be rather good and improvements in population health may, to some extent, be attributable to the health system (e.g. preventive measures). However, few data are available in this area. Allocative efficiency seems to be rather poor and so far little has been done to improve this. On the other hand, technical efficiency seems to be quite good and has been increasing. Again, information in this area is incomplete.

Transparency around the high-level decision-making in the health care system and the availability of information for patients are other areas where improvements could be made.

Overall, systematic evaluation and assessment of the health care system is lacking and hinders assessment of its performance.

7.1 Stated objectives of the health system

The key objectives of the health system for the period between 2006 and 2013 can be found in two strategy documents: the National Strategy of Health Care Development 2006–2011 (Box 7.1) and the National Health Care Strategy 2012–2020 (Box 7.2).

While earlier policy goals emphasized reducing the prevalence of specific diseases, since 2000 the focus has shifted to health outcomes. This is more in line with health policies of the EU.

Box 7.1

Strategic objectives and preconditions of the National Strategy of Health Care Development, 2006–2011

Strategic objectives

1) Accessibility of care (geographical accessibility, timeliness of care and economic accessibility)
2) Equity and equality of care for all citizens
3) Effectiveness of care
4) Quality of medical care
5) Patient and health professionals' safety
6) Solidarity.

Preconditions to be met for reforms to achieve their targets

- Full informatization of the health care system
- Communication 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.

Source: Government of the Republic of Croatia (2006).

Box 7.2
Objectives, goals and priorities of the National Health Care Strategy, 2012–2020

Strategic objectives

1) Prolong life expectancy
2) Improve quality of life
3) Reduce differences in health and health care.

Strategic goals

1) Improvement of connectivity and continuity in health care
2) Assuring equal access and overall improvement of care for all users
3) Improving efficiency and effectiveness of the health care system
4) Increasing availability of health care
5) Improving health indicators.

Priorities

1) Improving health IT and development of e-health
2) Strengthening and better use of human resources in health care
3) Strengthening of management capacities in health care
4) Reorganization of the structure and activities of health care institutions
5) Encouraging quality in health care
6) Strengthening preventive activities
7) Preserving financial stability of health care system
8) Intersectoral cooperation

Source: Government of the Republic of Croatia (2012).

The implementation of the National Strategy of Health Care Development 2006–2011 has not been officially evaluated and it is therefore difficult to assess whether its goals have been met. The National Health Care Strategy 2012–2020 is currently being implemented.

7.2 Financial protection and equity in financing

7.2.1 Financial protection

The overall financial protection provided by the system seems to be good but it is threatened by a number of factors. While the share of public expenditure as a proportion of THE decreased between 1995 and 2011, at 85% of THE, it

is still very high compared to most countries in the WHO European Region and reflects the continued importance of health care on the Croatian policy agenda (see Section 3.1). Conversely, the share of private financing is low (15%). However, it is predominantly financed from OOP payments and VHI offers little protection against the risk of illness. Due to gaps in data collection, it is difficult to assess what OOP payments are spent on and how OOP spending affects different population groups.

The breadth of public coverage is high, with virtually 100% of the population covered by the MHI scheme. The scope of MHI is broad and sick leave compensation is one of the most generous by international standards. However, the depth of MHI cover has been eroding since the early 2000s, weakening the financial protection of the health care system. A substantial and systematic reduction of rights to free health care services has taken place, through both increasing co-payments to virtually all services provided and the introduction of the rationing of services (see Section 3.2). Financial protection for more vulnerable populations is strengthened by the following measures: (1) certain health care goods and services provided to specific population groups are covered in full (100%) by the CHIF; (2) certain population groups have the right to free supplemental health insurance membership in the CHIF. In addition, all cost-sharing (for everybody) is capped at a maximum HRK 2000 per episode of illness (€264) (but usually all cost-sharing is covered by supplemental VHI) (see Section 3.2). No survey or other information is available on the affordability of health care among the population.

Several factors threaten the financial protection offered by the health system. For example, overreliance on insurance contributions makes financing highly dependent on the employment ratio and wage levels. While the employment ratio and wage levels enjoyed favourable trends for the most of the 2000s, since the start of the economic crisis growth in the unemployment rate has adversely affected the number of people who contribute to the social welfare system and the number who receive benefits (Vončina et al., 2012). Government budget transfers from general revenues to the MHI funds had been variable and also heavily dependent on the economic situation. Insufficient financing led to continuous deficits by the CHIF and the accumulation of debts by health care providers. It may also explain the existence of informal payments and corruption in health care (see Section 3.4). The 2008–2011 reform has likely improved the state of health care financing in Croatia (see Section 6.1) but its specific effects have not yet been analysed.

7.2.2 Equity in financing

Overall, financing of the health system seems to be regressive. Public health care financing comes from two sources: insurance contributions and taxation, with the former accounting for the majority of health care financing. Both of these sources represent a regressive source of health financing (see Section 3.3):

- Although the rate of MHI contributions is uniform for all workers regardless of their salary (and there is no ceiling on the contributions), MHI contributions are applied only to salaries and not to overall incomes, making financing from contributions regressive on the whole.
- Taxation of wages in Croatia, except for single parents with two children, exhibits relatively low tax progressivity. However, since the majority of State budget revenues come from VAT and excise duties, and indirect taxation is usually regressive, it seems that, overall, health care financing from taxation may be regressive in Croatia.

The share of insurance contributions rose from 84% in 2002 to over 95% of MHI expenditure in 2007 (CIHI, 2003, 2007), implying that the regressivity of health care financing is likely to have increased. There has also been a slight increase in the share of OOP payments in THE (see Section 3.1) – this has likely increased regressivity even further. The impact of the 2008–2011 reform on the regressivity of health care financing is unclear as it affected all sources of health care financing (MHI contributions, taxation and OOP payments) (see Section 6.1).

7.3 User experience and equity of access to health care

7.3.1 User experience

Few studies of patient satisfaction with the Croatian health care system are available. In 2006, the Ministry of Health, in collaboration with the CNIPH, conducted a survey into the quality of patient satisfaction with the medical services in hospitals and primary care centres. According to the survey, 63% of patients were completely satisfied with the medical services they received in hospitals. The most frequently stated improvement proposals included: refurbishment of wards; better quality of food; more money for medical equipment; rebuilding of hospitals; improvement of hygiene conditions; and a larger number of nurses (Josipović-Jelić et al., 2009). This implies that the infrastructure is perceived to be of poor quality and the number of human

resources insufficient. Indeed, a recent (2011) property condition survey has found that, for example, 40% of operating rooms have not been renovated since 2000 (see Section 4.1). As regards the number of nurses per 100 000 inhabitants in Croatia, in 2011, this was well below the EU average (see Section 4.2). There are no recent studies of user experiences with the health care system and it is therefore difficult to assess whether public perception has changed.

Long waiting times have been a long-standing reason for low user satisfaction with the Croatian health care system and are also one of the reasons for informal payments (see Section 3.4). The development of e-health in the last decade (e.g. e-waiting lists) may bring waiting times under control (see Section 4.1). Waiting times for procedures that are being tracked (more than 200 procedures) are expected to decrease significantly in 2014.

7.3.2 Equity of access to health care

The scope and depth of basic health care benefits is the same for all persons covered by the MHI scheme. Certain vulnerable population groups have access to additional services; face lower co-payments or are exempt from co-payments; or have access to free complementary VHI cover in the CHIF. These measures allow the vulnerable populations access to health care that otherwise might not be possible due to their socioeconomic circumstances.

Studies of equity of access among the Croatian population are rare. The latest national study available (Brborović, 2010) used data from the 2003 Croatian Adult Health Survey to investigate whether there were barriers to equitable health care utilization among different population groups of varying economic status and living in different regions of the country, controlling for health care needs. The results showed that among the respondents with higher health care needs, those with above-average economic status were more likely to see a GP or specialist on a regular basis. In contrast, highly frequent physician visits were more common among respondents with below-average economic status. Economically worse-off women, regardless of their health care needs, saw a gynaecologist less regularly than economically better-off women. Long waiting times and a large distance from the health care facility were the most commonly reported barriers to health care utilization. High expenses were reported as the main barrier to dentist visits and inpatient care utilization. Respondents living in suburban and rural settlements had to travel greater distances to access health care facilities and therefore had higher expenses; these were aggravated by the long waiting times for GP visits. Respondents living in urban areas

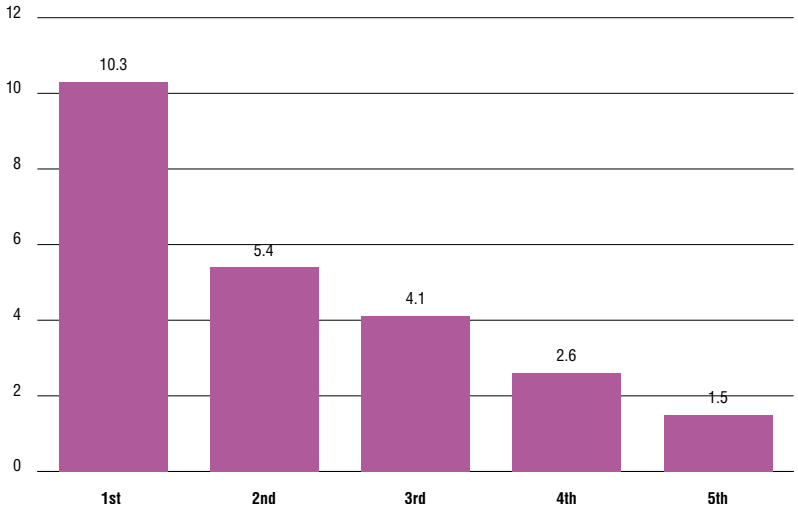
reported long waiting times and negative attitudes of health personnel as the main barriers to care. There do not seem to be any other similar studies using more recent data.

Geographical distribution of health care infrastructure and other resources, such as medical equipment and human resources (see Chapter 4), varies and people living in more remote areas, such as the islands, may find it harder to access health care (see Chapter 5).

In 2011, 5.1% of the respondents of the EU-SILC survey in Croatia self-reported unmet need for medical examination due to care being too expensive, too far to travel or because of a waiting list, compared to 3.4% of the respondents in the EU27 on average (Eurostat, 2013b). Differences in self-reported unmet need were visible relating to income, education level, activity, age and sex (see Figure 7.1a–e).

Fig. 7.1a

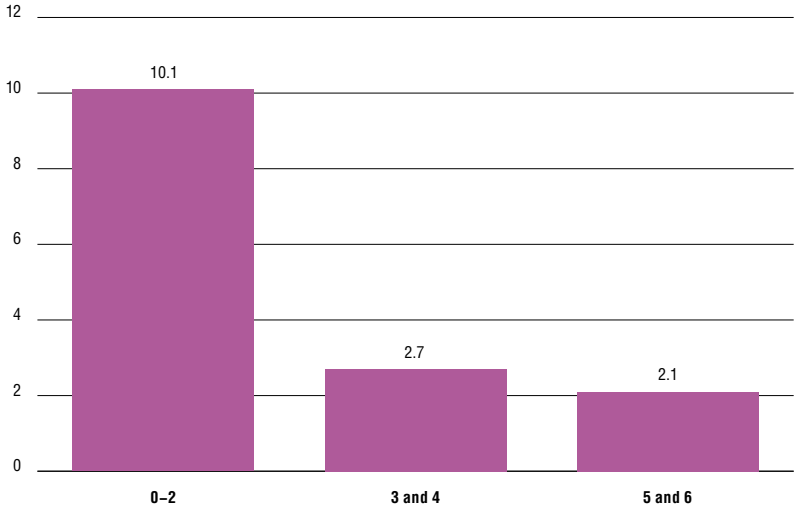
Self-reported unmet needs for medical examination in Croatia by income quintile (%), 2011



Source: Eurostat (2013b).
Note: Unmet need due to care being too expensive, too far to travel or a waiting list. People in the 1st income quintile are the poorest and people in the 5th income quintile are the richest.

Fig. 7.1b

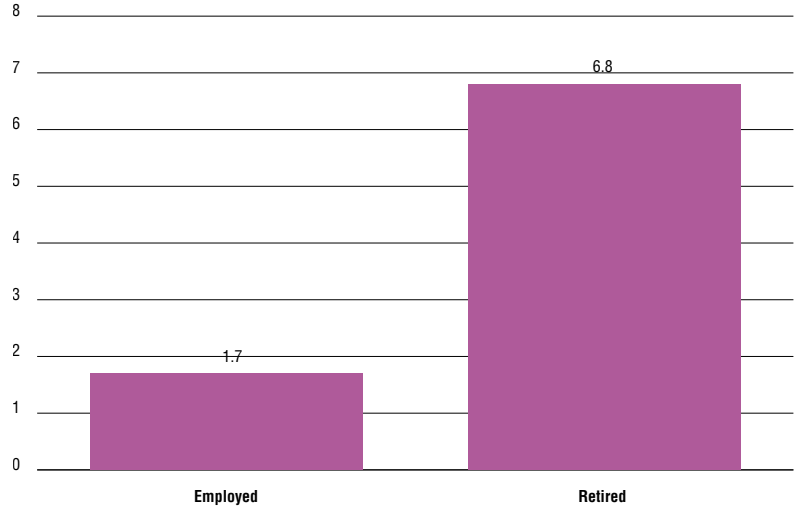
Self-reported unmet needs for medical examination in Croatia by education level (%), 2011



Source: Eurostat (2013b).
Note: Unmet need due to care being too expensive, too far to travel or a waiting list. Education levels 0–2: pre-primary, primary and lower secondary education; levels 3 and 4: upper secondary and post-secondary non-tertiary education; levels 5 and 6: first and second stages of tertiary education.

Fig. 7.1c

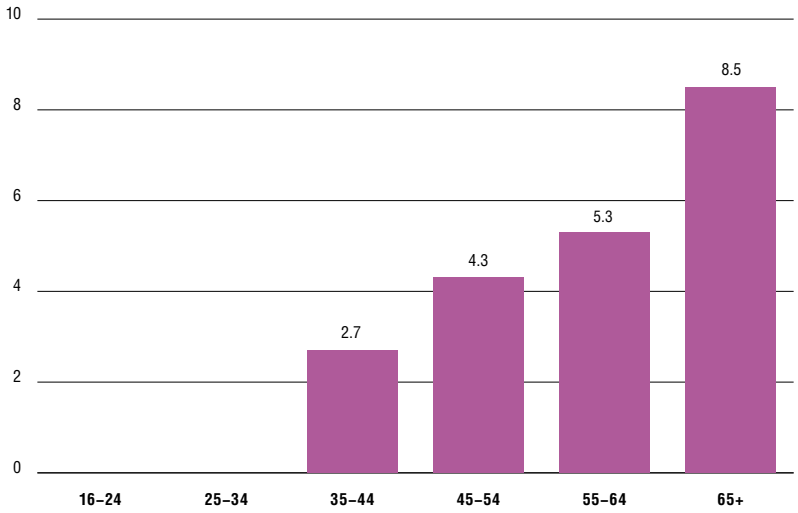
Self-reported unmet needs for medical examination in Croatia by activity (%), 2011



Source: Eurostat (2013b).
Note: Unmet need due to care being too expensive, too far to travel or a waiting list. No data available for unemployed persons and other inactive persons.

Fig. 7.1d

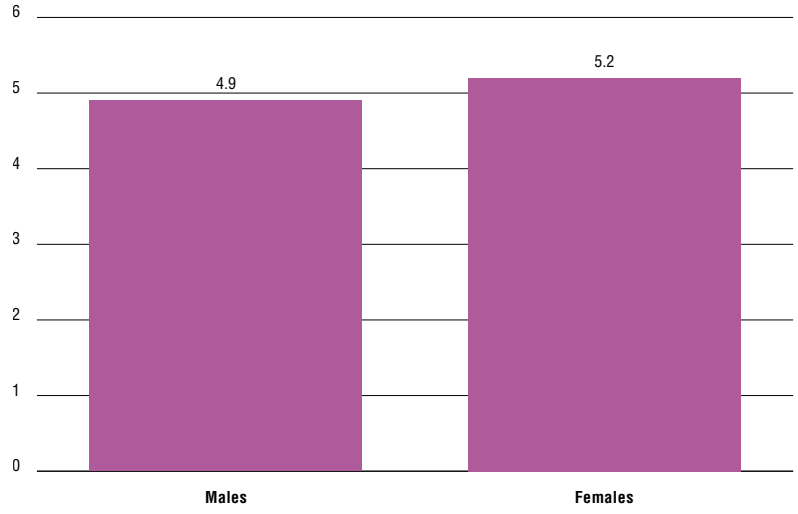
Self-reported unmet needs for medical examination in Croatia by age (%), 2011



Source: Eurostat (2013b).
Note: Unmet need due to care being too expensive, too far to travel or a waiting list. No data available for 16–25 and 25–34 age groups.

Fig. 7.1e

Self-reported unmet needs for medical examination in Croatia by sex (%), 2011



Source: Eurostat (2013b).
Note: Unmet need due to care being too expensive, too far to travel or a waiting list.

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Population health

Health outcomes in Croatia can be considered to be rather good. Life expectancy at birth has been increasing continuously since 1980, but still lags behind that of western European peers (but the gap seems to be closing and Croatia is also slightly ahead of the new EU Member States (that joined the EU since May 2004)). Healthy life expectancy is also relatively low in Croatia (see Section 1.4) and some negative health trends are being observed (e.g. an increase in the prevalence of obesity).

It is not easy to attribute improvements in population health directly to the health system. Changes in survival rates and mortality amenable to medical intervention may serve as an indication of the contribution that health care makes to improving population health but such data are not available for Croatia. It is likely, however, that better preventive services and improvements in the organization and quality of health care provision have contributed to these positive trends. In a 2012 index, which compares 34 European health care systems, Croatia's score in the category "health outcomes" (measured by infant deaths, cancer deaths relative to incidence, preventable years of life lost, methicillin-resistant *Staphylococcus aureus* (MRSA) infections, caesarean sections, undiagnosed diabetes and depression) was on a par with Germany and the UK, and higher than for 16 other countries. In terms of prevention and the range and reach of services provided, Croatia's score was on a par with Malta, and higher than for 21 other countries (Health Consumer Powerhouse, 2012). The Mandatory Vaccination Programme, in place since in 1948, and other public health activities, such as surveillance and the early response system, have been successful in keeping infectious diseases under control, and a number of other preventive programmes have been set up (see Section 5.1).

7.4.2 Health service outcomes and quality of care

According to 2010 data, the vaccination rate in Croatia, both for children and adults, was very good: the legal minimum vaccination rate was met for all types of vaccinations. Rates of (child) vaccination for measles, diphtheria, tetanus and pertussis (DTP) were above 96%. At 60.3%, the (re)vaccination rate of 60-year-olds with tetanus vaccine was unsatisfactory and efforts are being made to increase this (CNIPH, 2011).

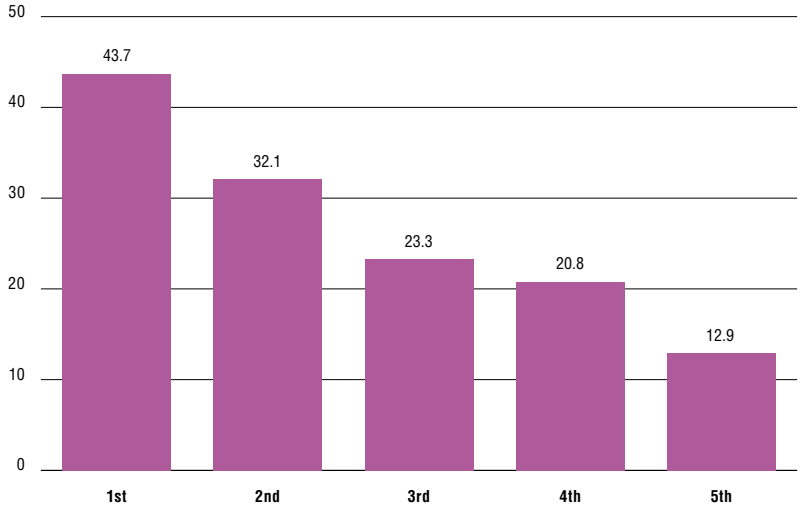
No data are available on the quality of care for chronic conditions and acute exacerbations of chronic conditions. There is also no information on the use of patient-reported outcome measures (PROMs), appropriateness of care or patient safety.

7.4.3 Equity of outcomes

The 2008 CroHort study reveals the existence of a socioeconomic gradient in the health status of the adult population (see Section 1.4). Likewise, the 2011 results of the EU-SILC survey also point towards the existence of inequities in health outcomes among various population groups (see Figures 7.2a-e).

Fig. 7.2a

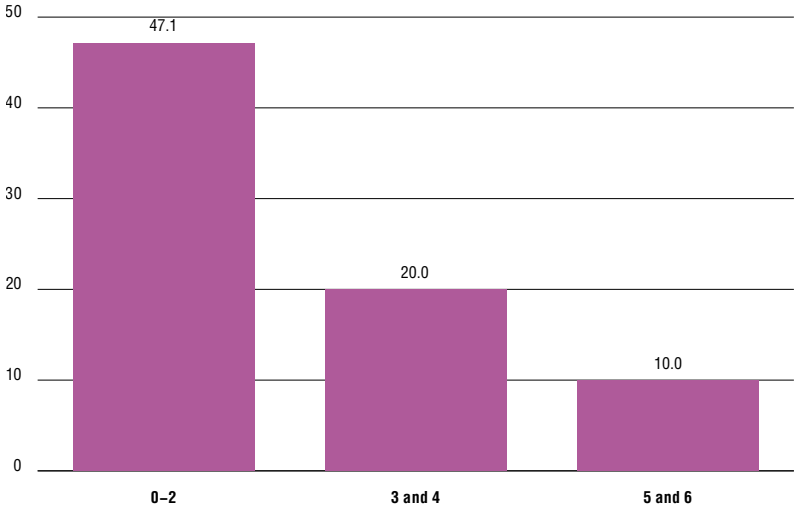
Self-perceived health in Croatia by income quintile (%), 2011



Source: Eurostat (2013b).
Note: Perception of own health status as being bad and very bad. People in the 1st income quintile are the poorest and people in the 5th income quintile are the richest.

Fig. 7.2b

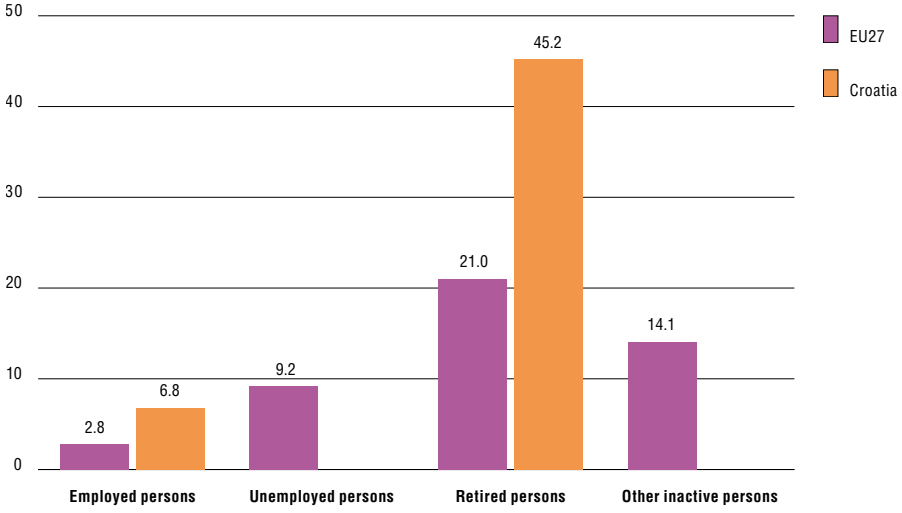
Self-perceived health in Croatia and EU27 by education level (%), 2011



Source: Eurostat (2013b).
Note: Perception of own health status as being bad and very bad. No data available for unemployed persons and other inactive persons in Croatia. Education levels 0–2: pre-primary, primary and lower secondary education; levels 3 and 4: upper secondary and post-secondary non-tertiary education; levels 5 and 6: first and second stages of tertiary education.

Fig. 7.2c

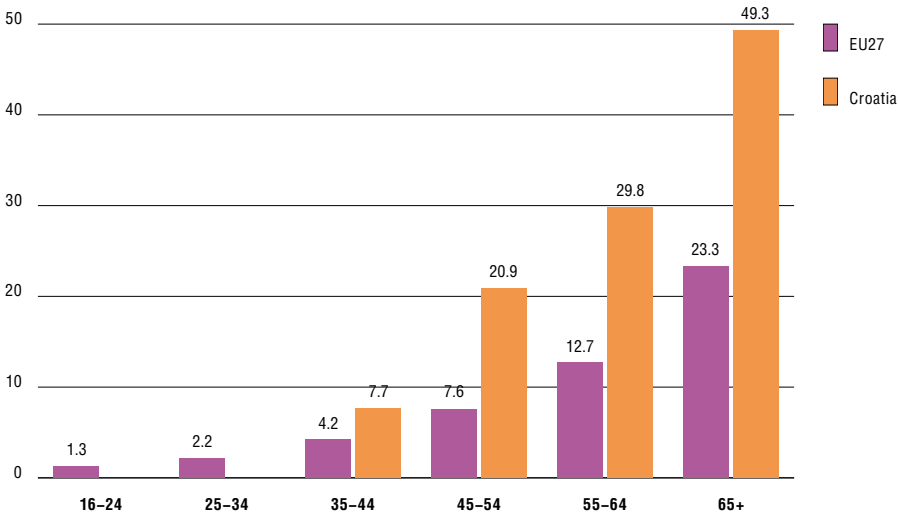
Self-perceived health in Croatia and EU27 by activity (%), 2011



Source: Eurostat (2013b).
Note: Perception of own health status as being bad and very bad.

Fig. 7.2d

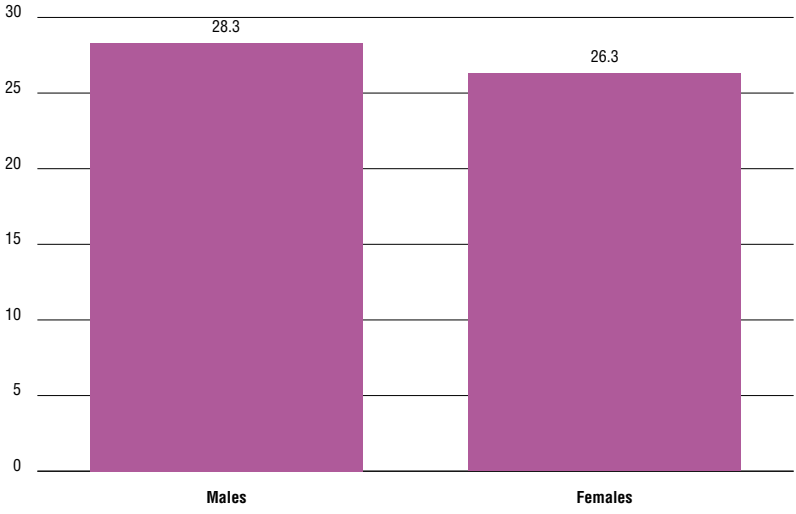
Self-perceived health in Croatia and EU27 by age (%), 2011



Source: Eurostat (2013b).
Note: Perception of own health status as being bad and very bad. No data available for 16–24 and 25–34 age groups in Croatia.

Fig. 7.2e

Self-perceived health in Croatia by sex (%), 2011



Source: Eurostat (2013a).
Note: Perception of own health status as being bad and very bad.

7.5 Health system efficiency

7.5.1 Allocative efficiency

Health needs assessment is not well developed in Croatia and strategic planning for the allocation of financial resources to the health care sector is based on basic health monitoring and the existing health care structures (see Section 2.5). To date, transfers from the central government have usually not been made according to prospectively agreed obligations but rather retroactively to cover shortfalls in the CHIF's budget or to cover deficits accumulated by the health care providers (see Section 3.3).

The National Health Care Network is the official planning tool that determines allocation of health care resources (financial and other, such as infrastructure and human resources) between counties. The allocation of resources takes into account parameters such as morbidity, mortality, traffic links and demographic characteristics of the respective populations and it is renewed every 2–5 years. It seems to be an effective planning tool since it helps rationalize resources and gives a good basis for supervision of the contracting partners.

Human resources planning is limited despite Croatia's facing problems with medical professionals, such as a shortage of medical doctors and nurses[1], and oversupply of some other types of health professional. There is also little strategic planning of capital investments. However, development of strategic planning at the level of the Ministry of Health has been supported from external sources, such as the 2007 loan from the World Bank (see Section 2.5). At the time of writing, the implementation of some components of this loan has not been finalized and it was not possible to evaluate its effects.

Despite the existence (since 2009) of the Agency for Quality and Accreditation in Health Care and Social Welfare, HTA is not used to evaluate new technologies, and decisions on the pricing and reimbursement of drugs and medical devices are currently taken by the CHIF. However, since early-2013, a group of six experts at the CHIF has started cooperating with the Agency on preparing HTA reports for the CHIF and the use of HTA may therefore increase in the future (see Section 2.7).

[1] The fact that some nurses are unemployed may suggest that the CHIF's contracts (perhaps due to the CHIF's financial constraints) do not allow health care providers to employ enough nurses.

7.5.2 Technical efficiency

The overall technical efficiency of health systems is difficult to measure. The Bang-for-the-Buck index attempts to measure which health systems provide best value for money. In the 2012 version of this index, Croatia ranked fourth (after Estonia, Albania and the Czech Republic) out of 34 countries included in the index. According to one source, "Croatia does have 'islands of excellence' in its healthcare system, and might well become a popular country for 'health tourism'; there are few other places where a state-of-the-art hip joint operation can be had for €3000" (Health Consumer Powerhouse, 2012, p.23).

Improving the efficiency of the hospital sector was the focus of several recent reforms. In 2002, Croatia began to implement case-based provider payment reforms in hospitals, starting with broad-based categories according to therapeutic procedures. Since 2009, services provided by hospitals contracted by the CHIF have been paid through a comprehensive prospective case-adjusted payment system, based on DRGs. The hope is that the introduction of these payment mechanisms will lead to improvements in the operational indicators (see Section 3.7). Indeed, according to a 2012 study (Bogut, Vončina & Yeh, 2012), both broad-based and comprehensive case-based payment systems have improved efficiency as measured by a reduction in ALOS, with little impact on the number of cases treated. These provider payment reforms have had no adverse impact on quality as measured by readmissions and it seems that the introduction of the new payment systems has improved efficiency in acute hospital care. However, the ALOS and bed occupancy rates in acute hospitals in Croatia are generally significantly higher than respective indicators in some neighbouring countries, such as Slovenia and Hungary, as well as in other EU countries, implying that the efficiency of hospital care could be improved further. Increasing the share of day surgeries is one way to increase efficiency in the hospital sector. However, in Croatia, due to methodological issues, it is unknown what proportion of hospital care is provided in a day care setting.

The State Audit Office noticed inefficiency in many areas of hospital operation: for example, there are usually too many employees; the system for calculating salaries is not transparent and is complicated; and the calculation of wages regarding on-call duty or preparedness, as well as coefficients of the complexity of workplaces, are often incorrect. In addition, there are problems with records and expenses for medication, which comprise about 63% of all material expenses. Records on medication in stock are not updated, which often results in the inefficient management and supply of pharmaceuticals. Some hospitals do earn their own income, mostly from the clinical testing of drugs,

but policies on the distribution of this income are not unified and some hospitals keep just 5% of such income whereas others retain 40%. There is no integrated methodology for keeping records on claims, the majority of which are made against the CHIF, based on contracts for compulsory and supplemental health protection outside of agreed limits (Bodiroga-Vukobrat, 2013).

It is difficult to assess the technical efficiency of primary care and no such comprehensive evaluation exists. The 2008, and even more so, the 2013 reforms of primary care payment mechanisms (see Section 3.7) seem to be steps in the right direction in terms of improving the technical efficiency of this type of care.

In 2009, Croatia substantially reformed its pricing and reimbursement regulation for medicines, with the aim of maximizing value for invested funds (see Section 2.8). The introduction of e-prescriptions has the potential to bring about substantial savings (see Section 4.2).

Human resources

Human resource problems, such as the shortage of medical doctors and oversupply of some other types of health professional, are well recognized in Croatia (see Section 4.2). According to interviews with representatives of various stakeholders in the health care sector conducted in 2012 (Ostojić, Bilas & Franc, 2012), some of the reasons for the shortage of medical doctors include inadequate salaries, work overload and inadequate conditions, with the related problems of decreasing attractiveness of the health professions leading to a potential outflow of health professionals to other countries with better conditions and from the public to the private sector. However, so far, little has been done to address these problems and there is little strategic planning in this area.

7.6 Transparency and accountability

Transparency in high-level decision-making in the health care system is another area where much could be improved. Health care reforms have lacked strategic foundations and projections that could be analysed and scrutinized by the public, and insufficient attention has been paid to the professional opinions and experiences of those directly involved in the provision of health care during the drafting and implementation stages. Reforms have often been riddled with scandals and controversies, undermining their efficiency (see Chapter 6). According to some stakeholder opinions, Croatian health care lacks vision and strategy: "there is no adequate health care development strategy" and "changes

and reforms are introduced/implemented in line with the wishes of individuals who hold decision-making positions in the government" (Ostojić, Bilas & Franc, 2012, p.712).

Some initiatives have been taken to improve transparency in the system, but much improvement is still needed in this area. For example, the new Regulation on Reimbursement, introduced in 2009, has improved the transparency, timeliness and methodology of decision-making by the CHIF's Committee for Medicines in the area of reimbursement (see Section 2.8).

Patients are mainly represented by various patients' associations. Although they actively participate in public debates, their formal influence is limited. Patients are also represented in the County Commissions for the Protection of Patients' Rights; in the seven-member Ministry of Health Commission; and in the governing boards of the CHIF and the county health councils. Patients' representatives communicate with these bodies regularly to ensure that patients' voices are heard. Regular meetings between the Minister of Health and patients' association representatives between 2012 and 2013 enhanced public participation and have likely improved patient satisfaction.

Citizens seem to be insufficiently informed and educated about the concept of patients' rights and the existing legislation regarding this, and rarely seek protection when their rights have been violated. The availability of information for patients (e.g. about the benefits to which they are entitled and the quality of care in various health care providers) could also be improved. The introduction of e-health tools, such as e-waiting lists, is a step in the right direction (see Section 2.9).

8. Conclusions

Extensive reform efforts have been undertaken in the Croatian health care system in recent years. The reforms touched upon many areas, from the financing of the system (2008–2011 reform) and payment mechanisms (primary and secondary care), through the organization and delivery of health care (reform of the EMS reform and the introduction of concessions in primary care), to reforming health care IT systems and the introduction of new medical training/specialization programmes. Some of the reforms were very broad in their scope and aimed to tackle many problems; for example, the 2008–2011 reform set out to reduce the reliance on one source of financing (i.e. compulsory health insurance contributions, with only one third of the population contributing), which had exacerbated the indebtedness of both the CHIF and health care providers; to improve the medium- and long-term sustainability of the health system; and, indirectly, to help reduce corruption and improve the popularity of the medical profession (critical given the shortage of doctors in the country). Although some of these reforms are still ongoing and assessment of others is not available, it seems that most changes are a step in the right direction. Croatia also had to make significant efforts to harmonize its regulatory framework for governing the health care sector with the relevant EU legislation, this harmonization being one of the prerequisites of EU membership.

However, despite many improvements, numerous challenges remain to be tackled. The key problem areas and actions identified in this HiT profile include:

- In the area of organization and governance: strengthening the HTA, accreditation and quality control processes; improving strategic planning of both capital investment and human resources investment in the system; further development and application of IT and e-health tools in health care, including the collection and exchange of data between various information databases and users; translating patients' rights legislation into actual improvements in the position of patients in the health care

system; improving transparency in the system by undertaking more research into various aspects of the health system and paying more attention to establishing the evidence base for reforms and assessing their implementation.

- In the area of health care financing: further efforts towards preserving the financial stability of the system, including achieving financial consolidation and improving supervision over and responsibility for financial operations of the CHIF and health care providers (diminishing the reliance on retroactive government transfers to cover shortfalls in the CHIF's budget or to cover deficits accumulated by health care providers); at the same time, attention should be paid to reducing the regressivity of health care financing.
- In the area of physical resources: continued work on the Hospital Master Plan project in order to determine the future configuration of the hospital system (including capacities, network, internal organization, financing, etc.), given the indications of possible capacity constraints in the system and problems with inequities of access to care.
- In the area of human resources: strengthening and better use of human resources in health care, including a detailed assessment of available resources; improved monitoring and assessment; appropriate recruitment and retention; and continuing education and professional development mechanisms to assure sufficient numbers and the right mix of skills.
- In the area of provision of services: increased focus on prevention; strengthening primary care and reducing the inappropriate use of specialized care, including increased efforts towards shifting more care from inpatient to outpatient settings; improving continuity of care, including by establishing integrated care pathways; further work on the reorganization of EMS (such as the integration of all hospital emergency services into one emergency care hospital department); developing and expanding non-institutional LTC services and volunteering; introducing services for informal carers and an adequate system of palliative care; and developing community mental health care and strengthening the shift from institutionalized forms of mental care to community care.
- Finally, more attention should be paid to the reform process – improving its transparency, greater involvement of stakeholders and better use of the evidence base. The implementation of reforms should be monitored more systematically and the impact of reforms should be analysed. A systematic evaluation and assessment of the health care system, allowing for measurement of its performance, would also be very useful.

9. Appendices

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9.2 Key legal acts

Name (1)	Year when first introduced (2)	Year of latest version or latest amendment (if different than (2))
Act on Companies / *Zakon o trgovačkim društvima*	1993	2013
Act on Concessions / *Zakon o koncesijama*	2008	2012
Act on Dental Care / *Zakon o stomatološkoj djelatnosti*	2003	2009
Act on Drugs / *Zakon o lijekovima*	2007	2013
Act on Foreign Citizens Mandatory Health Insurance / *Zakon o obveznom zdravstvenom osiguranju i zdravstvenoj zaštiti stranaca u Republici Hrvatskoj*	2006	2013
Act on Foster Families / *Zakon o zaštiti od nasilja u obitelji*	2003	2010
Act on Health Care / *Zakon o zdravstvenoj zaštiti*	1993	2013
Act on Health Care Technical Services / *Zakon o djelatnostima u zdravstvu*	2009	–
Act on Health Insurance / *Zakon o zdravstvenom osiguranju*	1993	2005
Act on Institutions / *Zakon o ustanovama*	1993	2008
Act on Mandatory Health Insurance / *Zakon o obveznom zdravstvenom osiguranju*	2006	2013
Act on Medical Devices / *Zakon o medicinskim proizvodima*	2008	2013
Act on Medical Practice / *Zakon o liječništvu*	1993	2008
Act on Medicinal Products / *Zakon o medicinskim proizvodima*	2008	2013
Act on Midwifery / *Zakon o primaljstvu*	2008	2010
Act on Nursing / *Zakon o sestrinstvu*	2003	2011

Name (1)	Year when first introduced (2)	Year of latest version or latest amendment (if different than (2))
Act on Official Statistics / *Zakon o službenoj statistici*	2003	2012
Act on Patents / *Zakon o patentima*	1999	2003
Act on Pharmacy / *Zakon o ljekarništvu*	2003	2008
Act on Physical Therapy Activities / *Zakon o fizioterapeutskoj djelatnosti*	2008	–
Act on Protection of Patients' Rights / *Zakon o zaštiti prava pacijenata*	2004	2008
Act on Protection of Persons with Mental Disorders / *Zakon o zaštiti osoba s duševnim smetnjama*	1997	2002
Act on Quality of Health and Social Care / *Zakon o kvaliteti zdravstvene zaštite i socijalne skrbi* (previous name: Act on Quality of Health / *Zakon o kvaliteti zdravstvene zaštite*)	2007	2011
Act on Safety and Health at Work / *Zakon o zaštiti na radu*	1996	2012
Act on Sanation of Public Institutions / *Zakon o sanaciji javnih ustanova*	2012	–
Act on Social Care / *Zakon o socijalnoj skrbi*	1997	2013
Act on Use of Tobacco Products / *Zakon o ograničavanju uporable duhanskih proizvoda*	1999	2013
Act on Voluntary Health Insurance / *Zakon o dobrovoljnom zdravstvenom osiguranju*	2006	2010

9.3 Useful web sites

Government of the Republic of Croatia – http://www.vlada.hr

Ministry of Health – http://www.zdravlje.hr

Ministry of Finance – http://www.mfin.hr/en

Ministry of Social Policy and Youth – http://www.mspm.hr

Ministry of Science, Education and Sport – http://www.mzos.hr

Croatian National Institute for Public Health – http://www.hzjz.hr

Croatian Health Insurance Fund – http://www.hzzo.hr

Croatian Bureau of Statistics – http://www.dzs.hr

Croatian Medical Chamber – http://www.hlk.hr

Croatian Chamber of Dental Medicine – http://www.hkdm.hr

Croatian Chamber of Pharmacists – http://www.hljk.hr

Croatian Chamber of Medical Biochemists – http://www.hkmb.hr

Croatian Chamber of Nurses – http://www.hkms.hr

Croatian Chamber of Midwives – http://www.komora-primalja.hr

Croatian Council of Physiotherapists – http://www.hkf.hr

Croatian Chamber of Health Care Workers – http://www.hkzr.hr

9.4 HiT methodology and production process

HiTs are produced by country experts in collaboration with the Observatory's research directors and staff. They are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. 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/en/home/projects/observatory/publications/health-system-profiles-hits/hit-template-2010.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Furthermore, international data sources may be incorporated, such as those of the OECD and the World Bank. The OECD Health Data contain over 1200 indicators for the 34 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 database. The Health for All database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health in 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 Health for All data have been officially approved by national governments. With its summer 2007 edition, the Health for All database started to take account of the enlarged EU of 27 Member States.

HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT consists of nine chapters.

1. Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. Organization and governance: provides an overview of how the health system in the country is organized, governed, planned and regulated, as well as the historical background of the system; outlines the main actors and their decision-making powers; and describes the level of patient empowerment in the areas of information, choice, rights, complaints procedures, public participation and cross-border health care.
3. Financing: provides information on the level of expenditure and the distribution of health spending across different service areas, sources of revenue, how resources are pooled and allocated, who is covered, what benefits are covered, the extent of user charges and other out-of-pocket payments, voluntary health insurance and how providers are paid.
4. Physical and human resources: deals with the planning and distribution of capital stock and investments, infrastructure and medical equipment; the context in which IT systems operate; and human resource input into the health system, including information on workforce trends, professional mobility, training and career paths.
5. Provision of services: concentrates on the organization and delivery of services and patient flows, addressing public health, primary care, secondary and tertiary care, day care, emergency care, pharmaceutical care, rehabilitation, long-term care, services for informal carers, palliative care, mental health care, dental care, complementary and alternative medicine, and health services for specific populations.
6. Principal health reforms: reviews reforms, policies and organizational changes; and provides an overview of future developments.
7. Assessment of the health system: provides an assessment based on the stated objectives of the health system, financial protection and equity in financing; user experience and equity of access to health care; health outcomes, health service outcomes and quality of care; health system efficiency; and transparency and accountability.
8. Conclusions: identifies key findings, highlights the lessons learned from health system changes; and summarizes remaining challenges and future prospects.
9. Appendices: includes references, useful web sites and legislation.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are the subject of wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process (see the following section).
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.
- HiTs are disseminated (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.

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with each other to ensure that all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

9.5 The review process

This consists of three stages. Initially the text of the HiT is checked, reviewed and approved by the series editors of the European Observatory. It is then sent for review to two independent academic experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies are restricted to checking for factual errors within the HiT.

9.6 About the authors

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- to describe accurately the process, content and implementation of health reform programmes;
- to highlight common challenges and areas that require more in-depth analysis; and
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