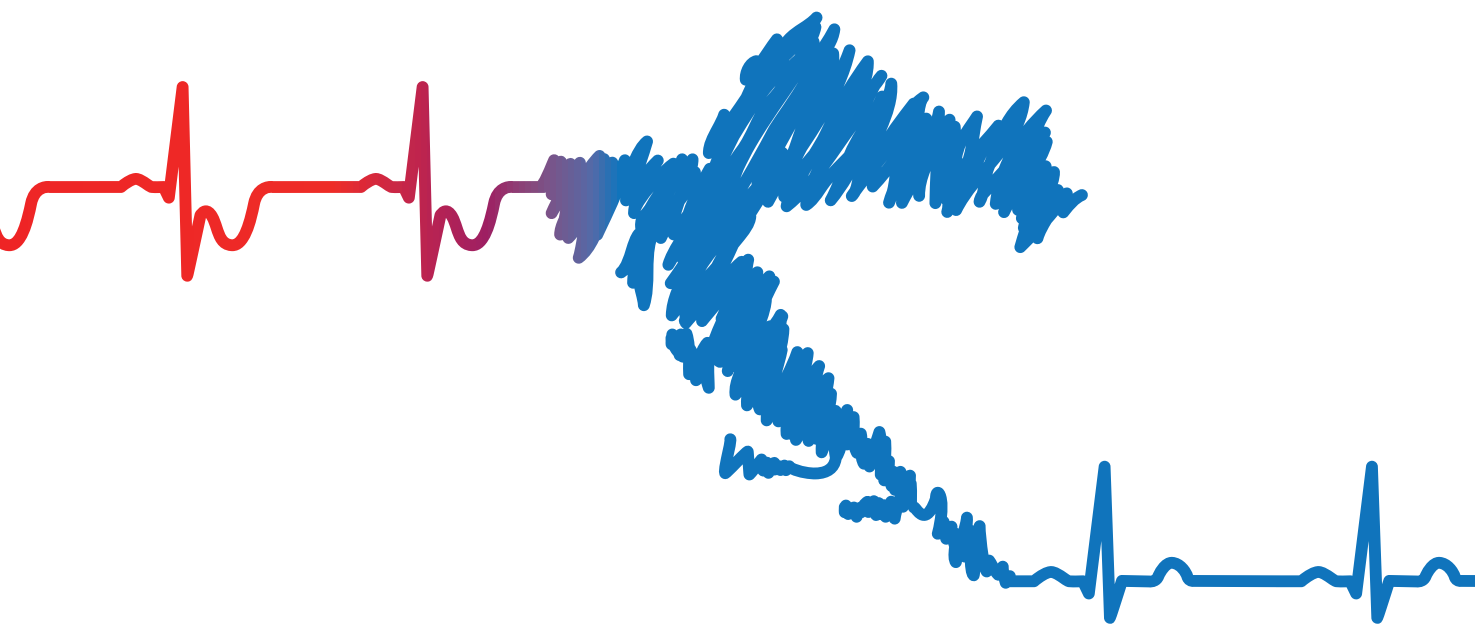




GOVERNMENT OF THE REPUBLIC OF CROATIA
MINISTRY OF HEALTH OF THE REPUBLIC OF CROATIA



NATIONAL HEALTH CARE STRATEGY

2012.-2020.

Abridged version
SEPTEMBER 2012.



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We apologize in advance if there is someone who has been unintentionally omitted from the list of contributors.

Preface

There is a point in every person's life when medical assistance is sought, which is not surprising, given health and disease are among key determinants of human existence that largely determine social, economic, cultural and political life of every individual. Within the health system everyone can find his or her interest - if not always for one's own sake, then because one's neighbour has felt the burden of disease or some other health impairment.

Managing a system that daily touches the lives of people in such a immediate way is a tremendous responsibility. Taking its complexity into account makes this challenge even greater. However, the scale of the responsibilities and challenges cannot be a real barrier in an effort to improve and enhance the system. For one should always aspire to achieve more – not only in health, but in all other man-made systems.

Danish physicist Niels Bohr wittingly noted: »Prediction is very difficult, especially about the future«. Nevertheless, prediction is an indispensable element of any development strategy, including this one, which envisions the Croatian healthcare system in the perspective of the next eight years. Serious prediction is made possible only based on an in-depth review and analysis of the existing situation and past trends, hence, the strategy devotes significant space to these very issues. The vision was defined only after a clear insight into the reality of the healthcare system was gained.

Some of the challenges that the health care system in the Republic of Croatia would face in the coming years were not hard to predict – the issues of financial sustainability, population ageing, and shortage of health care workforce. There is yet another challenge, and at the same time a great opportunity, ahead of us – Croatia's accession to the European Union. Less conspicuous are the answers on how to meet these challenges, and in what direction should the development of the health care system be headed in order to overcome them.

I deem that the best answers arise from a synergy of knowledge, experience and consideration on the part of both those who work in the healthcare system and those who use it. Consequently, the Strategy is a result of a participatory approach through which a circle of contributors and contributions progressively increased, culminating in an open invitation to all interested citizens and organizations to participate in public discussion on the draft Strategy.

I personally sent out written invitations to all former Croatian Ministers of Health and to all leaders of Croatian parliamentary parties inviting them to engage in public discussion, honouring their experience and profound understanding of the issues the Croatian healthcare system is faced with and firmly believing that the development of the healthcare system is the issue around which national consensus should be reached. Ultimately, the Strategy builds upon the valuable contribution made by nearly 300 professionals. Without them, this Strategy would never have seen the light of day. It is only thanks to their assistance, and the valuable support of many other diligent individuals, that the healthcare system we truly want can be realized today, or by 2020 the latest.

For health. Together.



Professor Rajko Ostojić, MD, PhD
Minister of Health

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INTRODUCTION

Framework, conceptual definition and importance of the Strategy

The Constitution of the Republic of Croatia guarantees everyone the “right to health care in accordance with law”, and that right is exercised through the health care system, which falls within the responsibility of the Ministry of Health. The health care system includes health care service of interest to the Republic of Croatia, which is being performed as a public service based on professional medical doctrine and with the use of medical technology in the provision of health care. The health care system is primarily determined by the Health Care Act, which forms the fundamental framework of the National Health Care Strategy 2012 - 2020 (hereinafter referred to as: the Strategy).

The Strategy is the umbrella document determining the context, vision, priorities, goals and key measures in health care in the Republic of Croatia in the future period. The time horizon until 2020 was selected because it provides sufficient time for implementation and evaluation of the strategic measures, and it coincides with key strategic documents of the European Union (EU) and World Health Organisation (WHO).

As the main document directing development in the future period, the Strategy makes the basis for bringing policies and decisions in health care, including decisions on distribution of budgetary funds in the health care sector. The purpose of the Strategy is not to make a long list of measures and activities to be implemented in order to achieve all general and specific goals in each individual segment of health care. Instead, the Strategy must offer clear and convincing reasons why something is considered a priority. As such, it forms a basis for drawing up new planning and operative documents, as well as for evaluating and revising the existing ones that elaborate development measures and concrete activities in individual health care segments (e.g. human resources, hospital system, palliative care, public health etc.).

The strategy has great significance in the context of European integrations of the Republic of Croatia as well. Accession to the EU, planned for 1 July 2013, is undoubtedly one of the most significant events in the history of the Republic of Croatia. Taking into consideration the planned accession date, Croatia will spend most of the period included in this document as an EU member. It is, therefore, important to plan the development of health care in the Republic of Croatia in the context of social, legal and economic framework of the EU. Croatia is also a member state of WHO, an international body directing and coordinating health care policies of the member states of the United Nations (UN). The key elements of the EU and WHO for the future period that the Strategy takes into consideration are as follows:

- *Europe 2020*, the EU strategy for smart, sustainable and inclusive growth, adopted in March 2010;
- *Health 2020*, new health policy of the WHO European Region, adopted in September 2012.
- *Common Strategic Framework 2014-2020* which forms the basis for financing from the EU funds.

Pursuant to the legislative package that will shape the cohesion policy of the EU for the period from 2014 to 2020, the existence of national or regional strategic framework is *ex-ante conditionality* for financing the projects in the field of health care. That precondition is met by bringing this Strategy and planning and operative elements arising therefrom.

Drafting and structure of the Strategy

Drafting the Strategy was based on a partnership approach, and was organised in such a manner to include as wide a circle of interested expert and general public as possible. The process implementers were the Minister of health as the Editor in Chief and the Editorial Board. Their role was to determine and approve the structure, contents and procedure of drawing up the Strategy and its presenting in public.

The Coordination Board collected and edited statistic, epidemiological and other data which served as the basis for the Strategy. It organised expert and public consultations (including workshops with committees) and collected and processed the results of such consultations, and prepared the draft of the Strategy and its final version.

The committees consisted of experts from various institutions, societies and organisations in the health care system. Through the workshops and by consulting with the Coordination Board, the committees helped identifying the priority problems in health care and the possibilities of influencing the problems, and they were organised in such a manner that each of them observed the entire health care system, but from different perspectives. That was the attempt to achieve a holistic approach to thinking about the problems and strategic planning in the health care system.

Five Committees were appointed:

1. *Committee for organisation of the health care system*, which analysed the health care system and considered it from the perspective of its levels and forms (primary, secondary and tertiary health care, public health, palliative care, science and research),
2. *Committee for professions and human resources*, which analysed the health care system and considered it from the perspective of the people working there (doctors, dentists, nurses, midwives, physical therapists, other health care professions, pharmacist's, non-health care staff in the health care system, volunteers),
3. *Committee for health care areas*, which analysed the health care system and considered it from the perspective of five basic areas: 1) health promotion, 2) prevention, 3) diagnostic and early detection of disease, 4) therapy and care, and 5) rehabilitation,
4. *Committee for financing the health care system*, which analysed the health care system and considered it from the perspective of financing, ownership, health insurances, relationship between public and private in health care, etc.

5. *Committee for legal affairs*, which analysed the health care system and considered it from the legal perspective, taking into consideration current status of legislation in Croatia and the context of Croatia accessing the EU.

The Strategy was made with a progressive increase of inclusion of professional and general public. The initial data collection and analyses were conducted by the Coordination Committee, with the help of associates from Croatian National Institute of Public Health and other institutions. Each of the Committees identified the priority problems at a separate workshop held at the end of May 2012. In cooperation with Friedrich Ebert Foundation, a conference took place on 12 June 2012 where the members of the Committees were joined by other representatives of key participants in health care in order to discuss strategic issues. Based on the collected data and partnership consultations, a SWOT analysis was drawn up, strategic problems of the Croatian health care system were identified and strategic development directions, priorities and measures were suggested.

The final product of the described process was the draft of the Strategy, a document that served as basis for public discussion, and which was officially initiated at the course “Media and Health” on 28 June 2012 in Grožnjan. Formal opinion on the draft of the Strategy was requested from the key participants in the health care system, and the entire public was invited to comment on the content of the document by 20 July 2012. After the public discussion about the draft of the Strategy, the collected comments and objections were analysed and they were taken into consideration when drawing up the final version of the Strategy.

In the presentation of health indicators and the status and trends in the health care sector of the Republic of Croatia, descriptions are used and – wherever possible – numerical indicators, with a display of regional differences and comparison with the EU average. Taking into consideration significant differences between the 15 countries of the “old” member states (EU 15) that accessed to the EU before 2004 and the 12 “new” member states (EU 12) that accessed to the EU after 2004, the comparisons show averages of those two groups of countries separately. Apart from that, most comparisons display values of the Czech Republic and the Republic of Slovenia, the two countries selected as “reference” countries for the Republic of Croatia due to their size, geographic proximity, as well as cultural and historic closeness.

The complete version of the Strategy was adopted in the Croatian Parliament, and the Ministry of Health published it at its website (www.zdravlje.hr), as well as in the form of a printed publication. The abbreviated version was prepared based on the comprehensive one, and it is available at website of the Ministry of Health and in hard copy, both in Croatian and English.

HEALTH INDICATORS

Demographic structure and life expectancy

The number of inhabitants of the Republic of Croatia, based on the latest census from 2011, amounts to 4,290,612. Out of the total number of inhabitants, 38% live in the Northwest Croatia, 33% in Pannonian Croatia and 29% in Adriatic Croatia.

Natural population growth rate was negative in Croatia in the period 2001-2010, unlike the EU 27 average, which was positive. Negative natural tendency is clear from the vital index as well (number of live-born per 100 dead), which amounted to 83.2 in 2010. In 2010, only Split-Dalmatia County, Dubrovnik-Neretva County, Međimurje County, Zadar County and the City of Zagreb had positive natural population growth, i.e. vital index exceeding 100. Concerning the population age structure, the demographic pyramid shows unsatisfactory structure (Figure 1). Optimum graphic display should

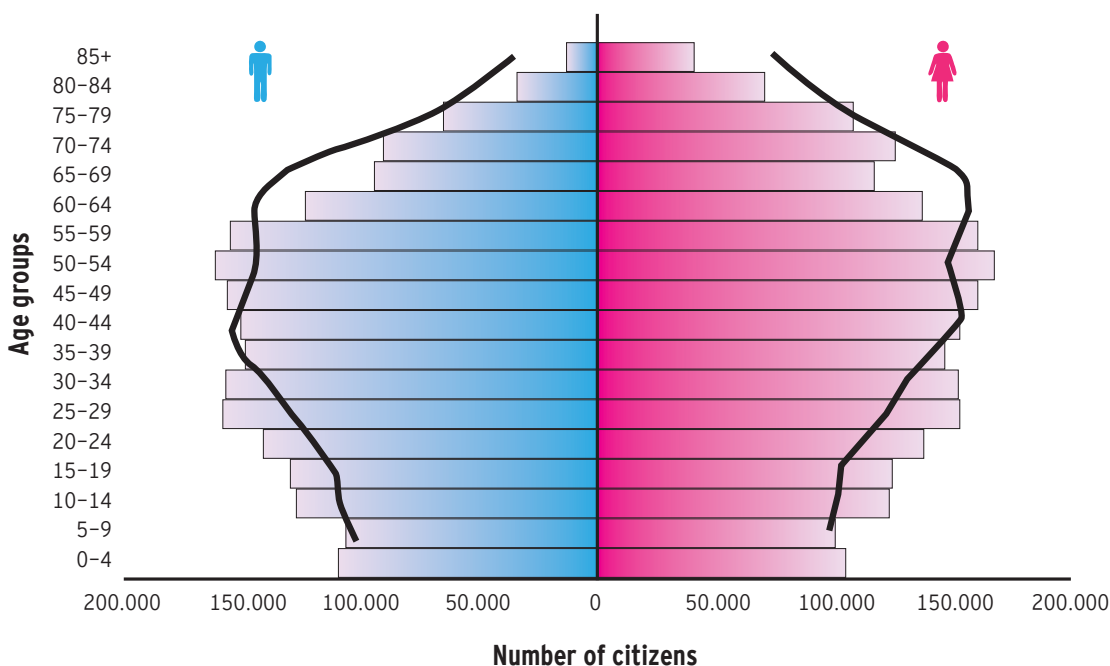


Figure 1. Demographic pyramid of Croatia for 2010, and projection for 2020 (black line). Source: Central Bureau of Statistics, calculated by the authors

be in the shape of a pyramid, showing the largest share represented by the young and the least share by the elderly population, which is not the case here. By comparing the census from 2001 to that from 2011, it is clear that the share of elderly population has increased (65+ years of age) from 15.7 to 17.2%, and the share of young population decreased (0-14 years of age) from 17.1 to 15.0%. With medial age of 41.5, Croatia is among demographically the oldest countries in the world.

Extension of life expectancy at birth in Croatia and other developed countries for more than 30 years is one of the greatest economic, health care and social accomplishments in the past one hundred years. The reason for that great achievement is first of all a decrease in mortality at young age groups, especially in infants and children. In the past decade, the life expectancy at birth for women in Croatia increased for about 1.8 years. Namely, it increased for a little more than two months each year. At the same time, the life expectancy at birth for men increased for about 2.6 years. Namely, it increased for a little more than three months each year. The difference between life expectancy in men and women is gradually decreasing. Life expectancy is greater than the average of “new members” of the European Union (EU 12), but below average of EU 27 and “old members”(EU 15) (Figures 2 and 3).

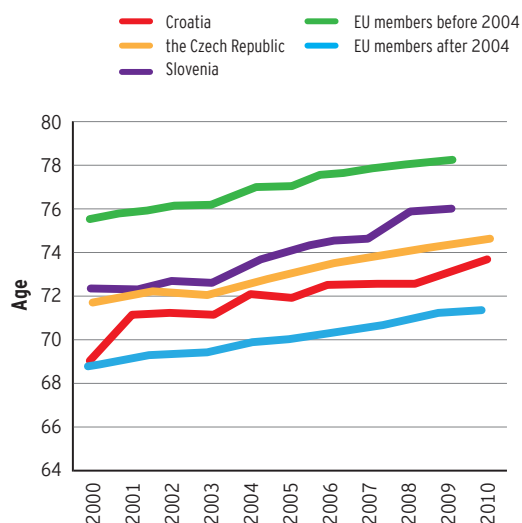


Figure 2. Life expectancy at birth (men). Source: WHO Health for All Database, 2012

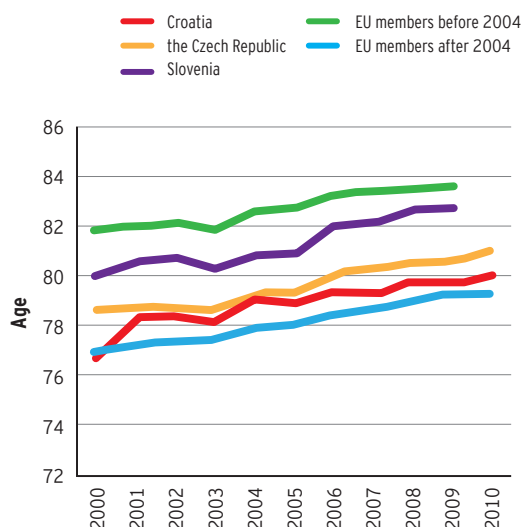


Figure 3. Life expectancy at birth (women). Source: WHO Health for All Database, 2012

Mortality rates and leading causes of death

In Croatia, about 50,000 persons die a year, and in the past 10 years the **standardised mortality rate** decreased from 1084.14/100,000 to 789.69/100,000. Despite the obvious trend of decreasing mortality rate, both for adults and for infants, these rates are greater than the European average (Figure 4 and 5). Mortality rates in Croatia are lower only than the average of the “new” EU members (EU 12).

Data from 2010 show that eight counties have lower standardised mortality rate than the Croatian average (1.179/100.000). Dubrovnik-Neretva County has the lowest (932/100.000), and Osijek-Baranja County the highest rate (1.393/100.000). Comparison of the age-based standardised mortality rate shows that higher values than the Croatian average have been recorded in counties of the continental part of Croatia (Figure 6).

In the past 10 years, the order of the five **most common causes of death** per groups of diseases has not changed (Figure 7). The leading causes of death are circulatory system diseases, with the share in the total mortality in the observed period decreasing from 53% to 49%. At the same time, the share of neoplasms, as the second most common cause of mortality, increased from 24% to 26%. The third cause of death are injuries and poisoning, the fourth are digestive tract diseases, and the fifth are respiratory tract diseases.

In general, the mortality rates of circulatory system diseases, neoplasms and injuries in Croatia are greater than the average of the “old” EU members (EU 15) (Figures 8-15). Croatia is among the countries in Europe with the highest mortality rates of cerebrovascular diseases, trachea, bronchus and lung cancer in men, and diabetes. The trend of increasing mortality of women by some types of neoplasms is especially disturbing, as well as the mortality rate caused by diabetes, which is among the highest in Europe.

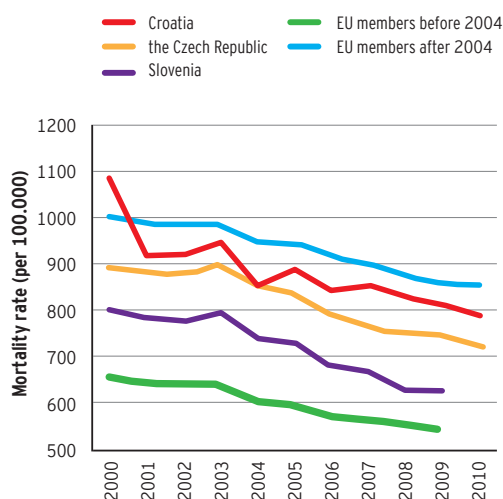


Figure 4. Standardised mortality rate. Source: WHO Health for All Database, 2012

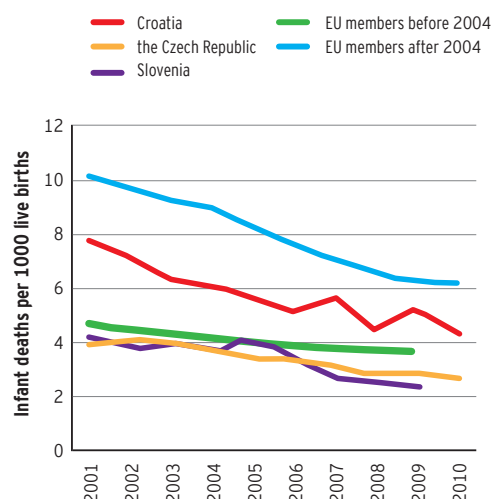


Figure 5. Infant mortality in Croatia and the EU. Source: WHO Health For All Database, 2012

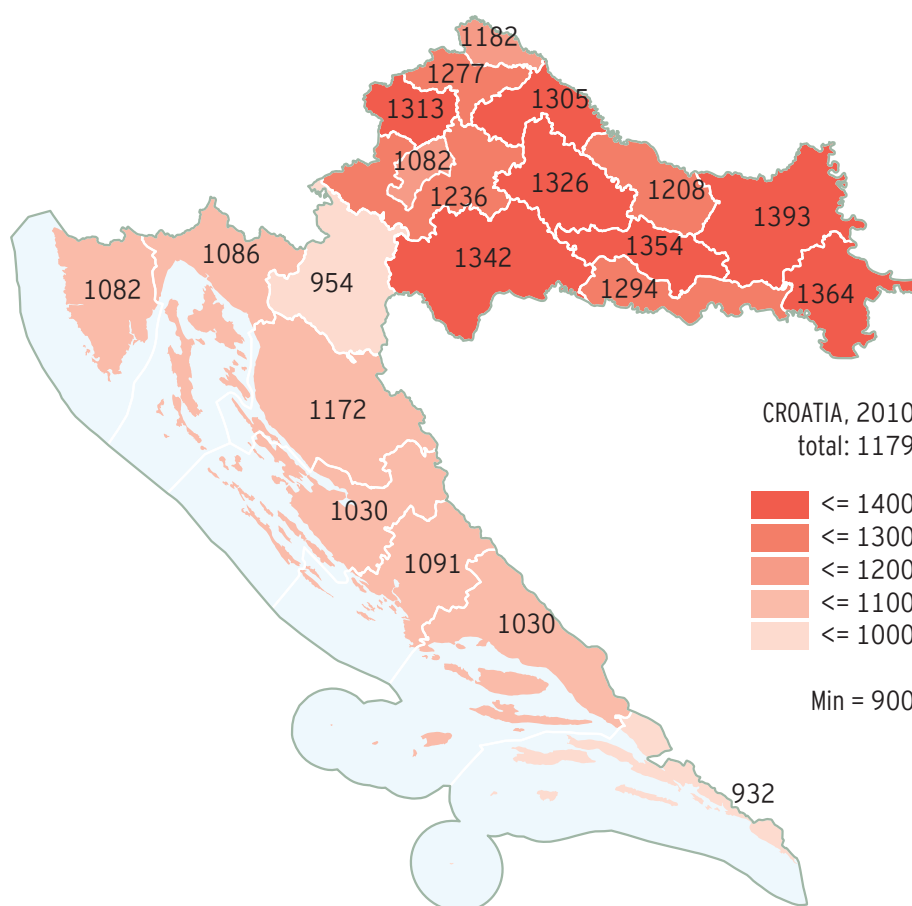


Figure 6. Standardised mortality rates, calculated for population of the Republic of Croatia, Census 2001. Source: Documentation of the Central Bureau of Statistics, 2002 and 2011. Data processing: Croatian Public Health Institute, 2012

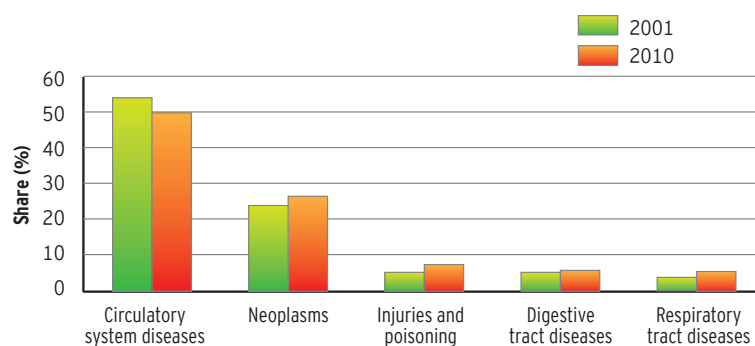


Figure 7. Share in five leading causes of death per groups of diseases in Croatia (total) in 2001 and 2010. Source: Documentation of the Central Bureau of Statistics, 2002 and 2011. Data processing: Croatian Public Health Institute, 2011

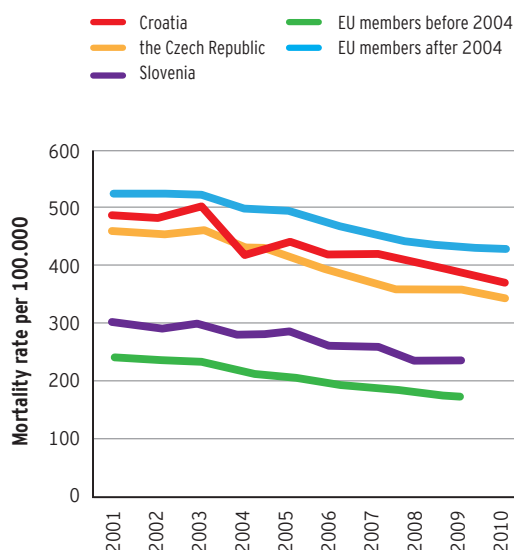


Figure 8. Age-standardised mortality rates caused by **cardiovascular diseases** for all age groups in Croatia and the EU, from 2001 to 2010. Source: WHO Health for All Database, 2012

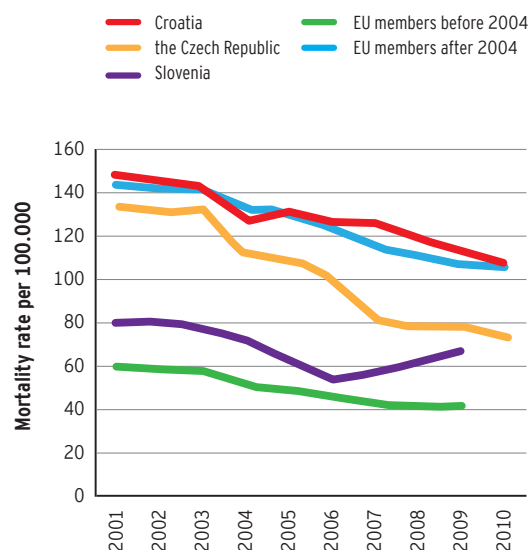


Figure 9. Age-standardised mortality rates caused by **cerebrovascular diseases** for all age groups in Croatia and the EU from 2001 to 2010. Source: WHO Health for All Database, 2012

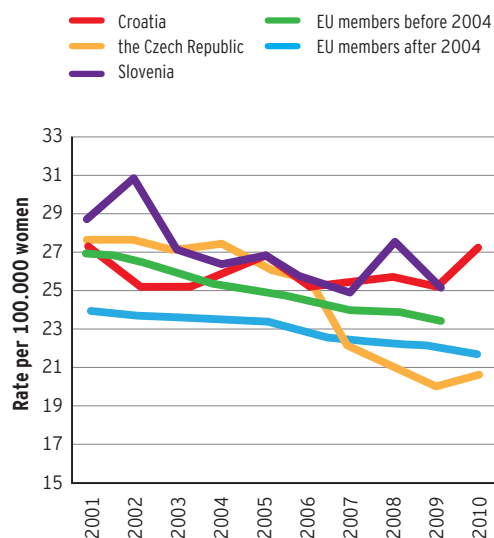


Figure 10. Age-standardised mortality rates (Standard European population) caused by **breast cancer** in Croatia and the EU, 2000–2010. Source: WHO Health for All Database, 2012

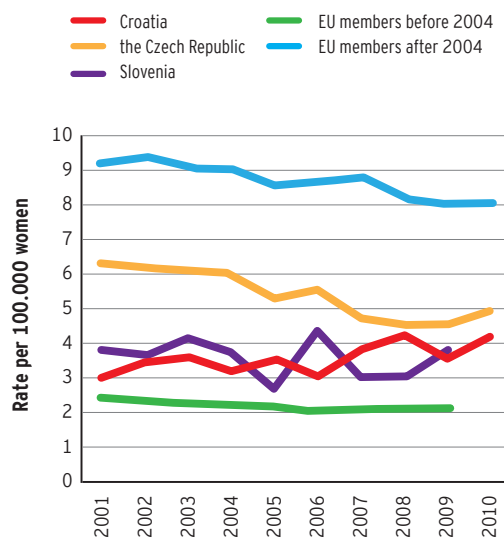


Figure 11. Age-standardised mortality rates (Standard European population) caused by **cervical cancer** in Croatia and the EU. Source: WHO Health for All Database, 2012

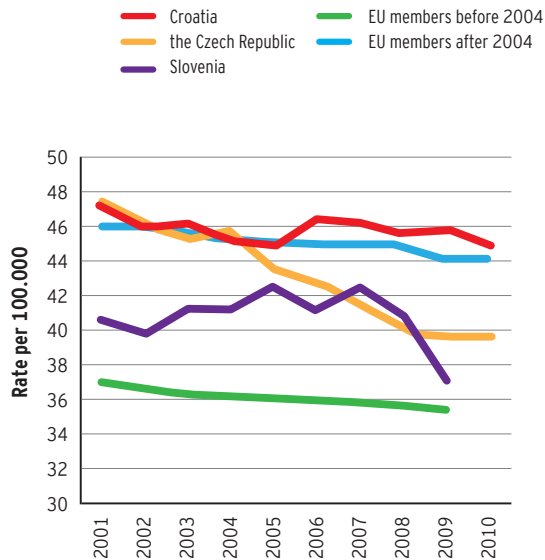


Figure 12. Age-standardised mortality rates (Standard European population) caused by **trachea, bronchus and lung cancer** in Croatia and the EU (**men**). Source: WHO Health for All Database, 2012

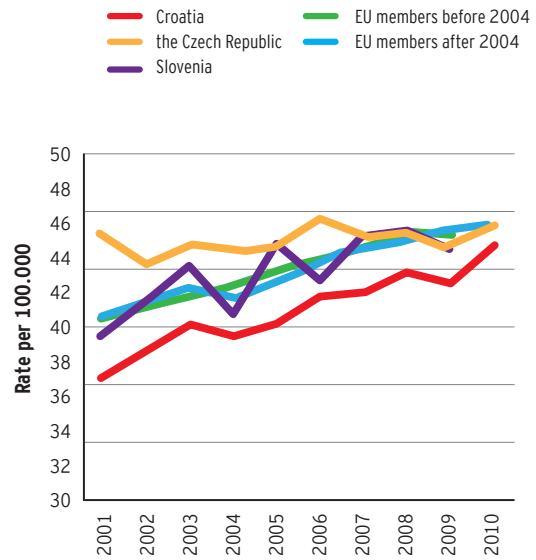


Figure 13. Age-standardised mortality rates (Standard European population) caused by **trachea, bronchus and lung cancer** in Croatia and the EU (**women**). Source: WHO Health for All Database, 2012

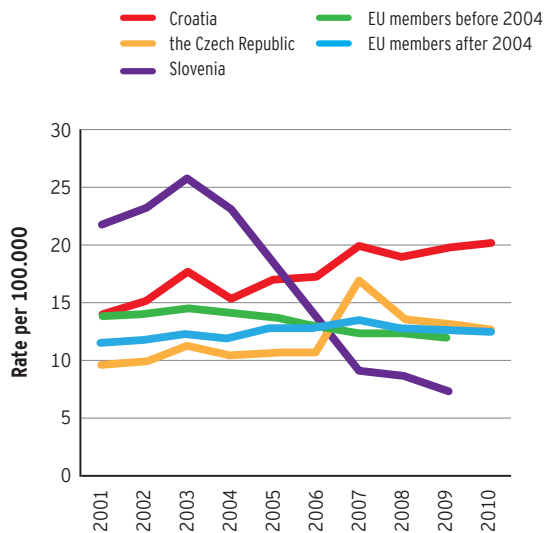


Figure 14. Age-standardised mortality rates caused by **diabetes** in Croatia and the EU. Source: WHO Health for All Database, 2012

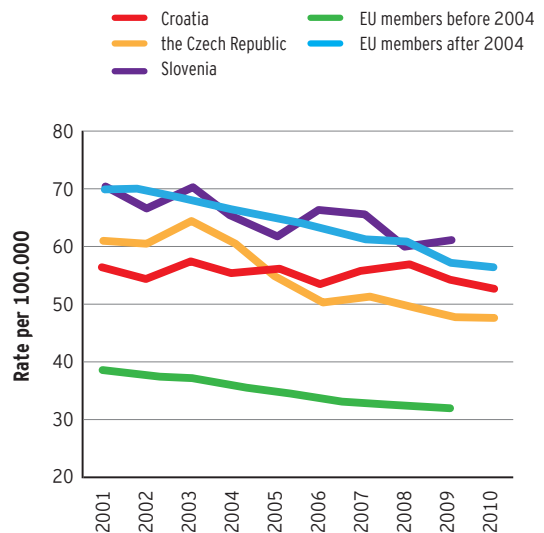


Figure 15. Standardised mortality rates caused by **injuries** in Croatia and the EU. Source: WHO Health For All Database, 2012

Risk behaviours

The results of the 2003 Croatian Health Survey (CHS) show that 15.9% of adult population (20.2% of men and 12.1% of women) have poor **dietary habits**. Data from the 2010 Health Behaviour in School-aged Children (HBSC) study show that on weekdays, only 59% of boys and 54% of girls have breakfast. The older they get, the less of them have breakfast, and girls have breakfast more seldom than boys. Data from the 2003 CHS show that the total of 30.5% Croatian citizens older than 18 are **physically inactive**, with similar prevalence in men (28.9%) and women (31.9%). The prevalence of physical inactivity in 2008 was greater than in 2003.

Poor dietary habits and insufficient physical activity cause **overweightness and obesity**, and the results of the 2003 CHS show that over 60% of men and 50% of women in Croatia are overweight, which places Croatia in a group of countries with very high prevalence of overweightness. Obese people make up about 20% of adult population in Croatia, with more or less equally represented genders (20.1% men and 20.6% women).

According to estimates of WHO, **smoking** is the leading cause of disease burden in Croatia. According to data of the 2003 CHS, 27.4% persons in Croatia smoked (33.8% men and 21.7% women) at the age of 18 and over, which is more than the prevalence of smoking in the EU member states before 2004 (25.6%), as well as in the new member states (25.4%). According to the data of the Global Youth Tobacco Survey (GYTS, 2007) 67.1% pupils and students in Croatia aged 13-15 tried smoking or experimented with cigarettes. It is estimated that more than 9,000 people in Croatia die from diseases connected with smoking, i.e. each fifth or sixth person who died.

According to the WHO database, registered consumption of pure **alcohol** in Croatia for 2009 was 12.8 litres per inhabitant, while the average of the European Union was estimated to 12.5 litres. Registered alcohol consumption in Croatia gradually increased in the period from 2000 to 2009. Concerning the mortality caused by chronic liver disease and cirrhosis in men, Croatia has a higher rate than average of the "old" EU members (EU 15). According to the data by the Ministry of the Interior of the Republic of Croatia, the number of accidents made by drivers under the influence of alcohol is decreasing, as well as the number of persons who died in such accidents. The number of injured, however, is not decreasing at the same rate. In young population, the first results of the ESPAD survey (European School Survey Project on Alcohol and Other medicines) from 2011, show that there is an increasing trend of risky drinking, defined as drinking 40 times and more in one's life, and "excess" (binge) drinking.

In the past 5 years, more than 150 persons died as a result of the addiction-related conditions. In health care institutions of Croatia, whether within or outside the hospital system, 7,500 persons a year are treated as a result of **drug abuse**. The total number of persons treated in the past years is stable, but the number of new persons in the system is decreasing. A decrease in the number of new heroin addicts is especially visible: in the year 2000 the number of new heroin addicts exceeded 1000, while in 2010 that number was under 500.

Mental health

Mental disorders contribute to the total hospital morbidity in Croatia with the share of about 7%. Each fourth or fifth day of hospital treatment is attributable to mental disorders. Mental disorders caused by alcohol, schizophrenia, depressive disorders and reactions to severe stress, including post-traumatic

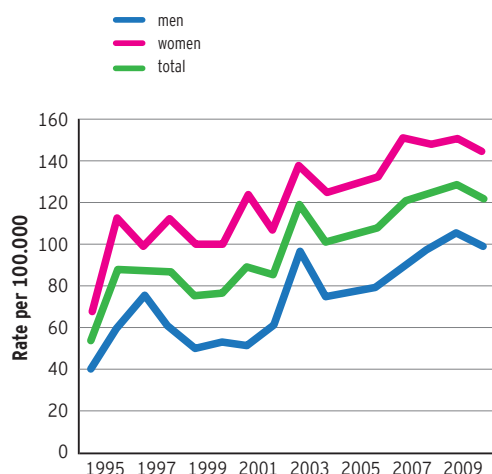


Figure 16. Hospitalisation rates due to depressive disorders. Source: Croatian Public Health Institute, 2010

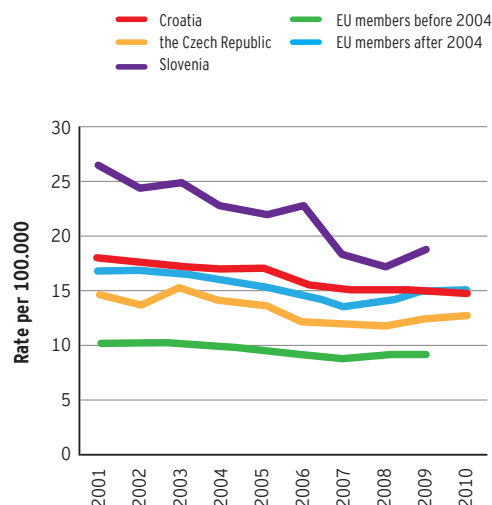


Figure 17 Age-standardised mortality rates as a result of suicide in Croatia and in the EU. Source: WHO Health for All Database, 2012

stress disorder (PTSD), as individual diagnostic categories, represent almost two thirds of all causes of hospital morbidity due to mental disorders. In hospital morbidity, there is a trend of increasing hospitalisation rate per 100,000 inhabitants, especially concerning depressive disorders (Figure 16). Mortality rates due to **suicide** in Croatia have been continuously decreasing since 1998, however, they are still higher than in the “old” EU members (EU 15) (Figure 17). These rates are significantly lower in counties of the coastal region than in the continental region of Croatia.

Infectious diseases and hospital infections

Epidemiological situation in Croatia concerning infectious diseases in 2011, as in the previous years, is positive. The diseases characteristic of low life standard and poor hygienic conditions, are nowadays either rare or non-existent (*enteric fever, bacillary dysentery, hepatitis A*). Diseases against which systematic vaccination is implemented are suppressed and some have been eliminated or eradicated (*poliomyelitis, diphtheria*). Coverage of all **vaccinations** in the past years were above the set minimum (95% for measles, 90% for other vaccines). Sexually transmitted diseases such as gonorrhoea and syphilis are rare or under control, and the intensity of HIV/AIDS epidemic is low (22 newly diagnosed cases of AIDS and 76 newly infected by HIV in 2011). Preventive health measures for providing safe public water supply and safe nutrition are effective. In 2011, as well as in the previous years, there was no epidemic caused by industrially prepared foodstuffs or meals. Hydric epidemics are extremely rare and exceptional, with none of them in 2011.

Prevention and control of **hospital infections** in Croatia has been implemented for a long time. However, the infrastructure for control of hospital infections is still insufficiently developed (valid infrastructure is in place in approximately 60% of hospital institutions). Health care staff that imple-

ments prevention, combating and control of hospital infections is insufficiently trained, with only 45% of them specifically educated for that purpose. In 2010, the prevalence of hospital infections determined in a pilot project of the European Centre for Disease Prevention and Control (ECDC) was 5.2% and 9.2%, respectively, in two hospitals participating in the project, while the average prevalence in all hospitals (66 hospitals from 22 EU countries and the Republic of Croatia) was 7.1%, which means that the situation concerning hospital infections in Croatia is comparable to the situation in the developed European countries.

Occupational health

From 1990 to 2010, a total of 2,973 cases of **occupational diseases** has been reported. The total morbidity rate in 2010 was 7.1/100,000 active insured persons, and in the observed period it ranged from 6.2 in 1999 to 26.2 in 1995. Out of all reported occupational diseases in Croatia, the most common ones are: damaged hearing caused by harmful effects of noise (22%), pneumoconiosis (19%), damages caused by vibrations (16%), infectious diseases (14%) and skin diseases (11%).

In Croatia, there are more than 20,000 **injuries at work** recorded per year, i.e. 15-17 per 1,000 employees are injured each year. These values have been more or less constant in the past ten years. According to those values, Croatia is among the countries with low rate of reported injuries at work, which might be the result of underreporting and insufficiently regulated system of occupational safety of workers, rather than good protection of health and occupational safety. Concerning the sex, men were injured in 64% of the cases, and women in 36%. In 2010, 38 persons died, which is the same as in the year before. **Accidents resulting in death** were the most common in construction building, with the share of 39.5%, followed by agriculture, forestry and fishing with the share of 23.7%, and the processing industry with 18.4%. In all other professions put together, another 7 workers died (18.4%).

Health of vulnerable groups

Concerning the health of **children**, the priority health problems in Croatia are no longer infectious and respiratory diseases but injuries, malignant tumours, allergic diseases, neurodevelopmental problems and other chronic and congenital degenerative diseases causing developmental disorders and invalidity. There are more and more problems concerning mental health of children and problems of neglected, abandoned and abused children, as well as other social risks that might have an influence on health.

Among the diseases that most frequently cause the children and young to visit primary health care facilities are respiratory diseases, mostly common cold, bronchitis, flu and pneumonia. This is followed by diseases of the digestive system, which are especially frequent during the summer months. Occurrence of allergic diseases, manifesting as allergies of the respiratory system or skin allergies, is increasing in the last few years. Respiratory diseases are also the most common cause of hospital treatment in children, with chronic tonsillitis and adenoid infection as leading causes of hospitalization. These are followed by injuries, with an increasing prevalence as children grow older (especially boys).

Perinatal mortality in Croatia is for the most part caused by deaths of low weight children, especially the ones with extremely low birth weight (<1000 g) and very low birth weight (1000-1499 g).

At the age of 1-19, death by accidents prevails, followed by melanoma, congenital anomalies and neurological diseases and damages. In the past years, there is a decrease of mortality due to injuries: while 97 boys and 21 girls died from injuries in 2000, 33 boys and 19 girls died from injuries in 2010.

The greatest contribution to the disease burden of the **elderly people** are chronic diseases related to effects of risk factors of an unhealthy life style. Out of the total number of the diseases and conditions recorded in the general practice/family medicine, about 30% was in patients aged 65 and older. The most common diseases in elderly people are hypertension, intervertebral disc disease and other dorsopathy, heart disease, acute infections of upper respiratory systems, and diabetes. Share of hospitalized people at the age of 65 and over amounts to 30% of the total number of people treated at hospitals in Croatia.

According to the Croatian Registry of Persons with Disability, there are more than 519,000 **persons with disability** in Croatia, which is about 12% of the total population. The most common conditions causing disability are impairments of the locomotor system, mental disorders, impairments of other organs and body systems and impairments of central nervous system. In March 2011, based on the data of the Croatian Pension Insurance Institute, the number of workers in the Republic of Croatia who obtained disability support pension amounted to 255,358 (excluding the members of the Ministry of Defence and Armed Forces of the Republic of Croatia, Croatian Defence Council and Croatian war veterans), which is 9348 per 100,000 inhabitants or 21% of all pensions obtained pursuant to the Pension Insurance Act. In the period from 2005 to 2010 the number of all disability support pensions obtained pursuant to the Pension Insurance Act increased by 8%. In March 2011, the average age for pension was 52 years and 6 months, and 43% of all users of disability support pensions were younger than 59. In 2005, a share of expenditures for disability support pensions in the total expenditures for pensions in the Republic of Croatia amounted to 26.2%, while that share in EU countries amounted to 15.9%.

Available data on health of **Croatian war veterans** show that the most common causes of hospitalisation in the inpatient wards at hospitals, according to groups of diseases of the veterans and their family members, were mental disorders (76.6%), followed by diseases of the muscular and skeletal system and connective tissue (6.9%), and injuries, poisoning and other consequences of external causes (4%). Smoking and alcohol abuse are significantly more common among the veterans than among the civilians. There is a total of 61,594 Croatian war veterans from the Homeland War, obtaining their status based on wounding, injuries or diseases.

There are no routine health care and statistical research on the condition and health care of **Roma**, therefore the estimates are given based on individual field research. Due to high unemployment rate, a very small number of Roma labour force is actively insured. Through the regional self-governments (counties), certain number of Roma without health insurance achieves the health insurance from the budgetary funds. Data on infant mortality in Roma, though incomplete, show great differences when compared to non-Roma population, and the mortality rate in Roma is 3-4 times higher than in the non-Roma population.

Health and environment

Systematic monitoring of the **air quality** in Croatia is implemented at Air quality monitoring stations of the national network (under the authority of the Ministry of Environmental and Nature Protection and Croatian Meteorological and Hydrological Services), local networks (under the authority of the counties, the City of Zagreb, towns and municipalities), and special purposes stations (pollution

generators obliged to monitor air quality). Croatian Environment Agency collects the data and draws up annual reports on air quality in Croatia.

In the territory of the Republic of Croatia, there is currently no systematic collection of data concerning the **condition of soil**. Croatian Environment Agency has drawn up a Permanent Soil Monitoring Programme as a start-up document for insuring the collection of data on soil condition.

Seventy-four per cent of Croatian population is connected to the public water supply system, with significant regional variations. Generally at the level of Croatia, taking into consideration the technical and technological status of the water supply, health conformity of **drinking water** from public water supply objects is satisfactory.

Critical conditions in drinking water supply are in rural areas where settlements are dispersed and are located at unfavourable relief and on islands. Testing the health conformity of drinking water from wells in the rural areas shows that microbiological contamination is present in about one third of the tested samples. Health conformity of **recreational waters in swimming pools** is monitored by applying a non-universal, non-standardised methodology, and the data are not collected systematically at the national level. The test results of the **sea quality** on beaches show that the quality of Croatian sea is high.

The analysis of the **food of domestic origin and imported food** for the purpose of determining health conformity, is performed by authorised official and reference laboratories in the Republic of Croatia. During 2009, it was determined by official sampling performed pursuant to the plan of supervising food shipments of animal origin that 12 shipments did not comply with microbiological standards for food. During 2010, 12 such shipments were detected, and 10 during 2011. Based on total results of analysis of officially sampled shipments from import and of domestic origin, analysed at Croatian Public Health Institute, there were 7% microbiologically unsafe foodstuffs in 2010, and that share has been decreasing in the past seven years. The share of chemically unsafe foodstuff samples was under 5%.

According to the Noise Protection Act, towns with more than 100,000 inhabitants and owners and concessionaires of industrial areas, main roads, railways and airports must draw up a strategic **noise map** intended for a comprehensive evaluation of noise exposure of the population from various sources. In the Republic of Croatia, out of the entities obliged to draw up strategic noise maps, by May 2012 the maps were drawn up by the Town of Rijeka, the Town of Split and Autocesta Zagreb Macelj Ltd. Out of local self-government units that are not obliged to draw up strategic noise maps, the noise maps were drawn up by Varaždin, Sisak, Mali Lošinj, Bjelovar, Pula, Kutina, Delnice, Velika Gorica, Viškovo, Popovača, Ivanić-Grad, Lipik, Sveti Ivan Zelina, Kastav and Makarska. Airport Dubrovnik has also drawn up the strategic noise map, although it was not obliged to do so.

State Office for Radiological and Nuclear Safety is in charge of supervision and monitoring of all activities concerning **sources of ionising radiation**. There is no systematic research about the influence of non-ionising radiation to people's health in Croatia. There are no available data on how many people get poisoned as a result of handling/exposure to **chemicals**, according to type, causes and circumstances of poisoning, as well as the result of poisoning. There is also no satisfactory intrasectoral cooperation that would enable a systematic dealing with the influence of the **climate and climatic changes** to people's health.

MACROECONOMIC FRAMEWORK

Gross Domestic Product

Gross domestic product (GDP) of the Republic of Croatia was HRK 341,206 million (market prices) in 2011, which is an increase if compared to 2010 when it was HRK 334,564 million (market prices). According to the GDP *per capita*, Croatia falls back significantly behind the EU member states (Figure 18). It is important to notice regional disproportions of Croatia concerning development. The least developed counties are the counties of the Central and Eastern Croatia, and by far the highest GDP *per capita* is in the City of Zagreb (Figure 19). Other counties with GDP *per capita* above the Croatian average are Primorje-Gorski Kotar County and Istrian County. More than one third of the achieved GDP goes to the City of Zagreb, followed by Split-Dalmatia County (9%), Primorje-Gorski Kotar County (8%) and Istrian, Osijek-Baranja and Zagreb Counties (with 6% each). The counties that participate the least in the total GDP structure, with 1% each, are Lika-Senj County, Virovitica-Podravina County and Požega-Slavonija County.

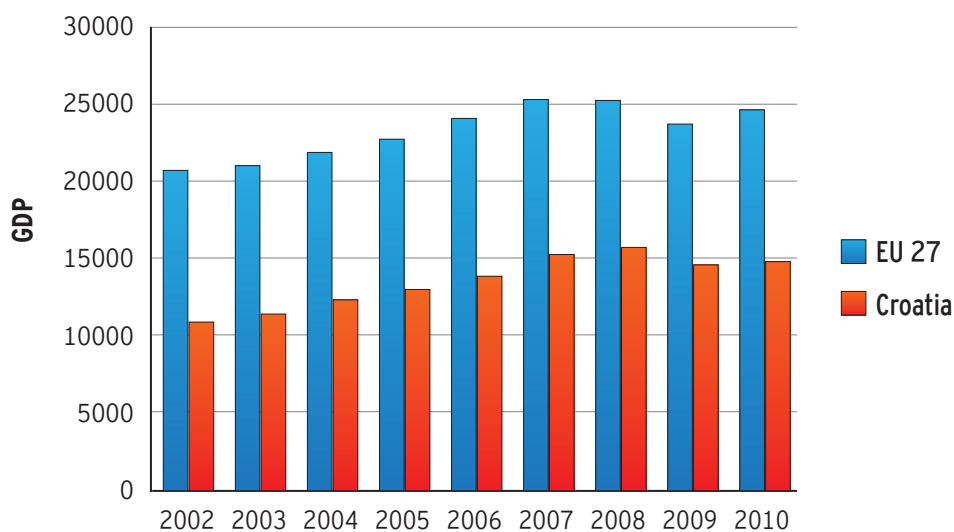


Figure 18. Gross domestic product (GDP) per capita (per purchasing power parity) in EU 27 and Croatia, 2002–2010 Source: Eurostat.

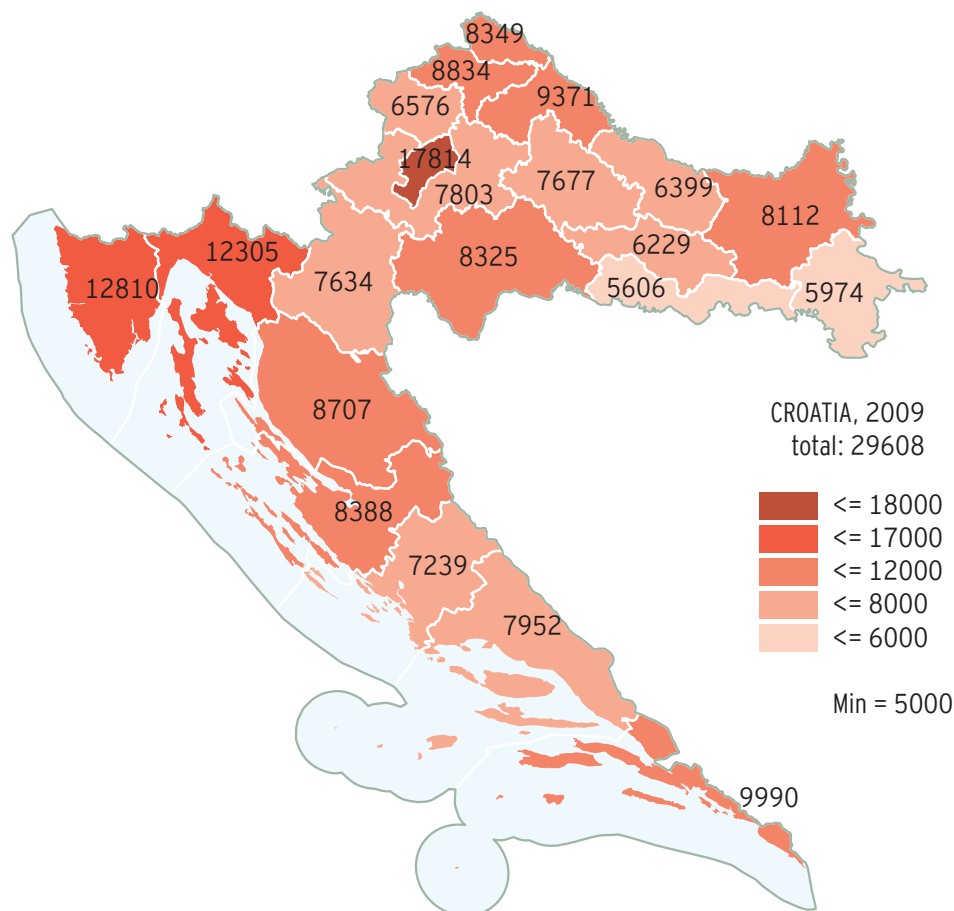


Figure 19. Gross domestic product (GDP) per capita (in EUR) per county (EUR), 2009. Source: Central Bureau of Statistics, 2012

Unemployment rates

Average unemployment rates in Croatia are higher than in EU 27, EU 15 or EU 12 (Figure 20 and 21). The most unemployed persons in February 2012 were without education, with elementary school or high school qualifications, and 10% of the total number of unemployed persons finished a college, a university, an academy, or they had master's or doctoral degrees. The unemployment rate among the young in 2011 was between 30 and 40%. Regional disproportions in Croatia also exist in unemployment rates, and most counties in 2010 had higher unemployment rates than the Croatian average. The City of Zagreb had the lowest registered unemployment rate, and Brod-Posavina County, Vukovar-Srijem County, Virovitica-Podravina County and Sisak-Moslavina County had the highest rate.

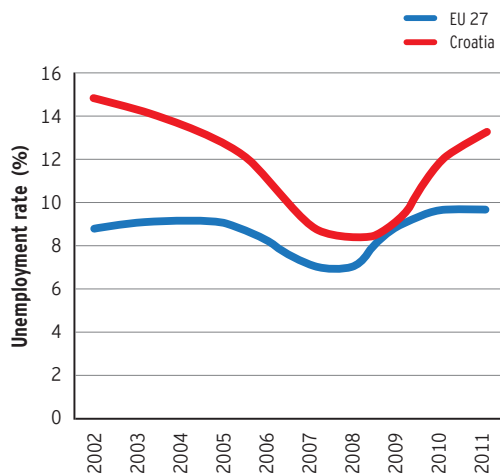


Figure 20. Unemployment rate in EU 27 and Croatia 2002–2011 Source: Eurostat

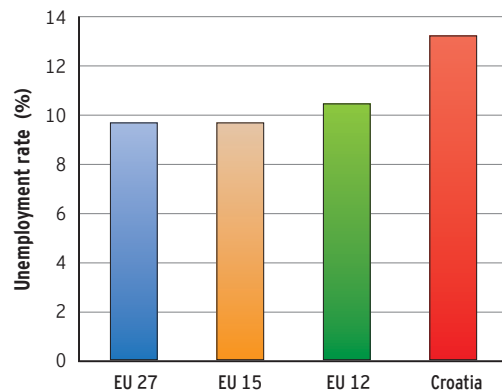


Figure 21 Unemployment rate in EU 27, EU 15, EU 12 and Croatia in 2011 Source: Eurostat

Salaries and poverty risk

An average monthly net salary that was paid per employee in legal entities in Croatia for 2011 amounted to HRK 5,441 (Figure 22). In the health care profession, an average monthly net salary amounted to HRK 6,170, which is 0.8% more than in 2010. Although average nominal salaries in the period 2000–2011 increased, in real terms the salaries decreased in 2009 and 2010. In February 2012, there were 1,214,715 retired people in Croatia with average pension (decreased by tax and surtax) of HRK 2,341.26. As much as 31.3% of the total population of Croatia in 2010 were at risk of poverty and social exclusion (Figure 23).

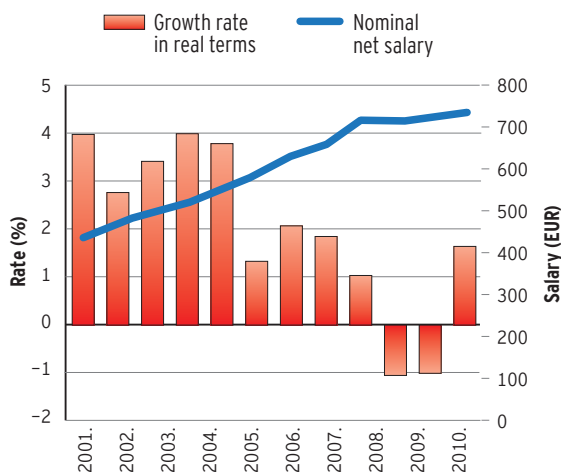


Figure 22. Average nominal salaries (EUR) and salary increase rate in real terms (%) in Croatia 2000–2011. Source: Croatian National Bank.

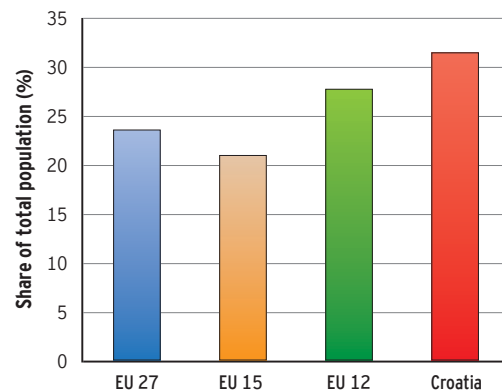


Figure 23. Inhabitants at risk of poverty and social exclusion in EU 27, EU 15, EU 12 and Croatia in 2010. Source: Eurostat.

Inflation, prices and indebtedness

The inflation rate in Croatia in 2010 and 2011 is lower than in EU countries and European Monetary Union (EMU) countries (Figure 24). Consumer price indices in 2011 (2005=100) show significant increase in prices in health care – 42% compared to 2005, 36% increase of price of alcohol drinks and tobacco, and 35% increase in the housing, water, power, gas and other fuels expenses (Figure 25). Balance of consolidated general government in the period 2002-2009 was negative, i.e. in deficit (Figure 26). During the observed period, the share of the general government debt in GDP was higher in the EU 27 member states than in Croatia (Figure 27).

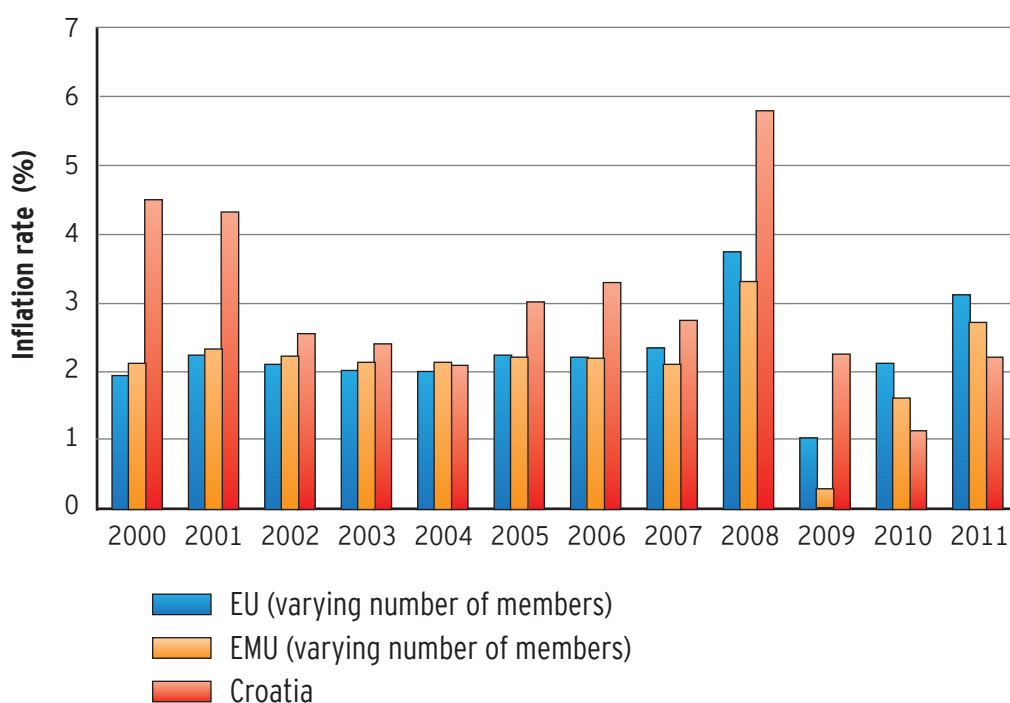


Figure 24. The inflation measured by harmonised consumer price index in EU, EMU and Croatia 2000-2011. Source: Eurostat.

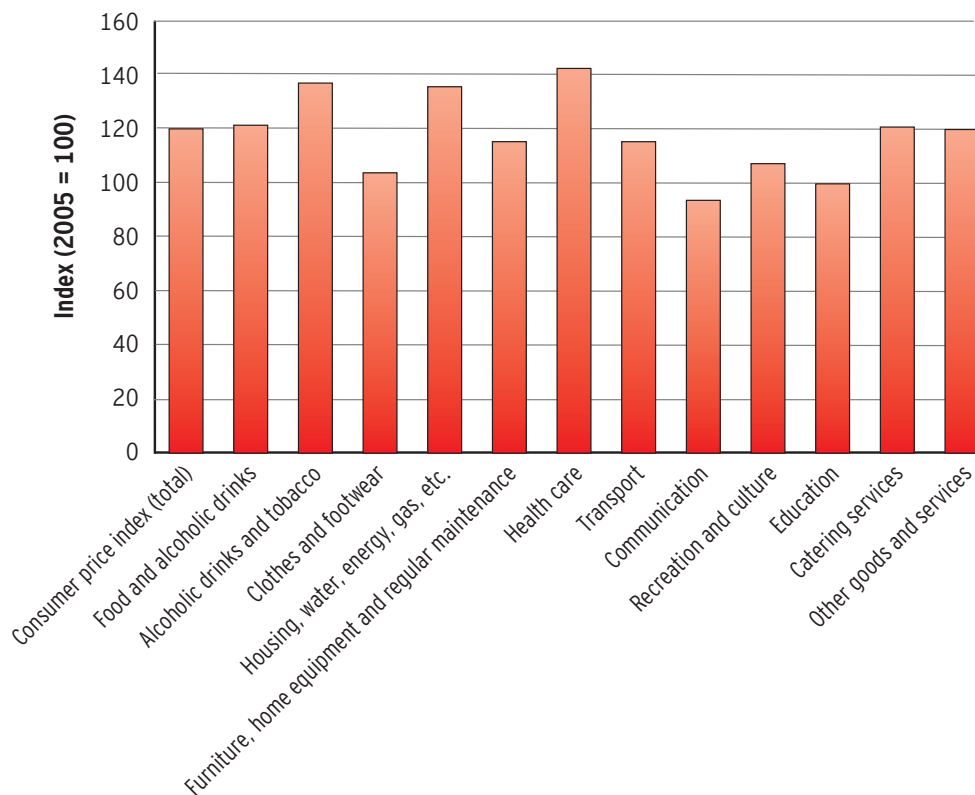


Figure 25. Consumer price indices in 2011 (2005 = 100). Source: Central Bureau of Statistics, 2012

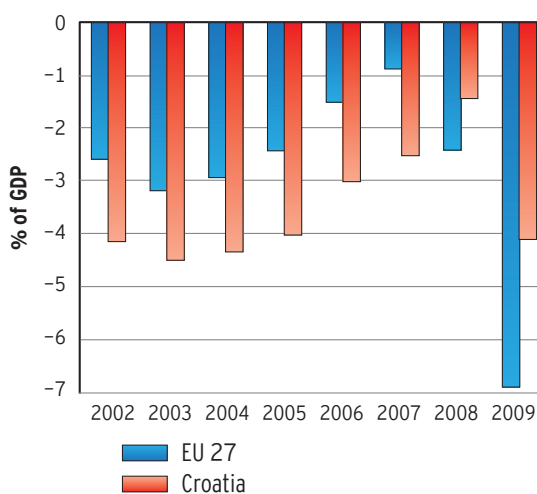


Figure 26. Balance of consolidated general government in EU 27 and Croatia 2002–2009. Source: Eurostat

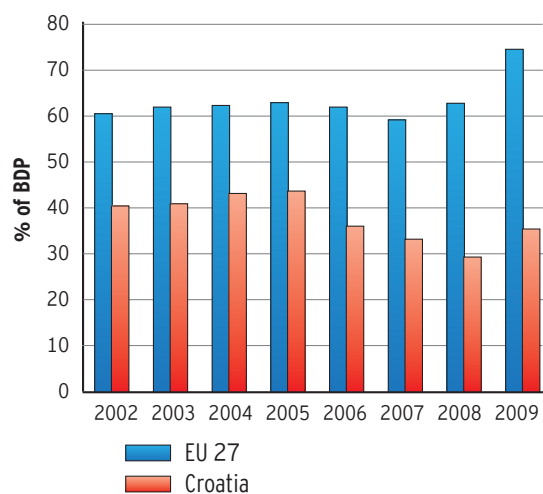


Figure 27. General government debt as the percentage of GDP in EU 27 and Croatia 2002–2009. Source: Eurostat

ORGANISATION AND BASIC LEGAL FRAMEWORK OF THE HEALTH CARE SYSTEM

The basic legal framework of the health care system in Croatia consists of three key acts: The Health Care Act, the Mandatory Health Insurance Act and the Patient's Rights Protection Act.

The Healthcare Act determines the principles and measures of health care, rights and obligations of persons when using health care, holders of social welfare concerning health of the population, contents and organisations performing health care activities, as well as monitoring the same.

The health care of the population of the Republic of Croatia is implemented according to the principles of universality, continuity, availability, and a comprehensive approach in the primary health care, and specialised approach in specialist-consiliary and hospital health care.

Furthermore, in accordance with this Act, the health care profession is performed at primary, secondary and tertiary levels, and at the level of various institutes. On the primary level, health care includes: monitoring health and recommending population protection measures, preventing and discovering diseases, as well as rehabilitation and treating the patients, occupational medicine, emergency medicine, palliative care, mental health protection, supply and manufacturing of medicines, rehabilitation of children and the young with disorders, health care of persons over 65 years of age, health care of women, health care of youth, specific preventive health care of children and youth, health visits, health care at home, ambulance transport, preventing and treating diseases of teeth and mouth, and hygienic and epidemiological protection.

Health care institutions on the primary health care level are: community health centre, health care facility, institution for home health care and institution for palliative care. Public health care service on the primary level may be performed based on concession. Health care facilities on the secondary level include outpatient centres, hospitals and treatment centres, while on the tertiary level, the health care is performed in clinics, clinical hospitals and clinical hospital centres.

Pharmaceutical profession is performed at the primary, secondary and tertiary health care level, and it includes provision of medicines and medical devices to the population.

Pursuant to the **Mandatory Health Insurance Act**, insured persons have rights and obligations when using health care, as well as other rights and obligations from health insurance. In the Republic of Croatia, the health insurance is divided into basic, additional and private health insurance. Basic health

insurance is mandatory and it is implemented by the Croatian Institute for Health Insurance (CIHI). Additional health insurance and private health insurance are voluntary. Additional health insurance provides payment of the difference in value of health care services that the CIHI does not settle within basic health insurance. Private health insurance is opened by an individual agreement between the insurer and the person, providing the insured with the rights from the health insurance that are not included in the basic health insurance. The fundamental rights arising from the basic health insurance are the right to health care and the right to financial compensation.

The basic health insurance is financed by the contributions paid by the insured, contributions paid by employers, contributions by other contribution payers determined by this and other acts, special contributions for using health care abroad, special contributions in case of a work-related injury, contributions from the state budget and income from interests, dividends and other income.

In the Republic of Croatia, the right to health is a constitutional category for all citizens. As signatory of the convention for the protection of human rights and dignity of the human being concerning the application of biology and medicine, Croatian government committed to regulate the legislation in accordance with the provisions of the Convention and the **Patient's Rights Protection Act** was brought in 2004. The Act regulates moral, ethical and civil behavioural standards of the users and the providers of the health care services. It is based on the principles of humanity and availability.

HEALTH CARE FINANCING

Expenditures for health care per capita in Croatia in 2010 are significantly lower than in the EU and EMU (European Monetary Union) countries, the Czech Republic and Slovenia, and they show the growth trend in the period 2000-2008, and a mild decrease in 2009 and 2010 (Figure 28 and 29). Compared to the European average, the share of total expenditures for health care in Croatia is lower in GDP as well (Figure 30). The share of **public expenditures for health care** in GDP in Croatia (6.6%) is higher than in the Czech Republic (6.1%) and Slovenia (6.4%), but lower than the total share of public expenses in the EU GDP, which amounted to 7.8% GDP in 2009, with a growth trend (Figure 31). The share of **expenditures for prevention** in 2010 was lower in Croatia than in the EU countries, and it amounted to only 0.68% of the total expenditures for health care, while in the EU countries that share was 2.68%.

Public expenditures for health care in Croatia in the period from 2008 to 2010 were unchanged (Figure 32). Their share in the total public expenditures in that period amounted to 17.7%, which is more than in the EU and EMU countries, the Czech Republic and Slovenia, where the expenditures for health care had the least share in the total public expenditures among the observed countries, and in

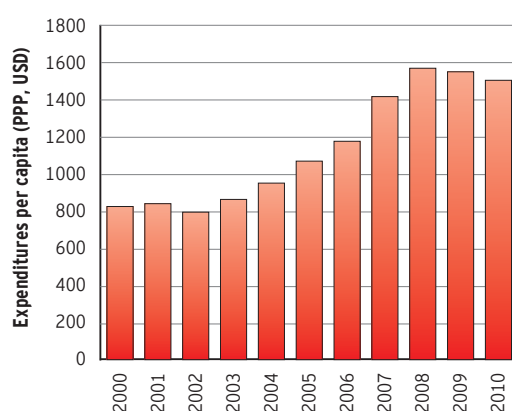


Figure 28. Expenditures for health care per capita (PPP, USD) in Croatia, 2000–2010. Source: World Bank, database

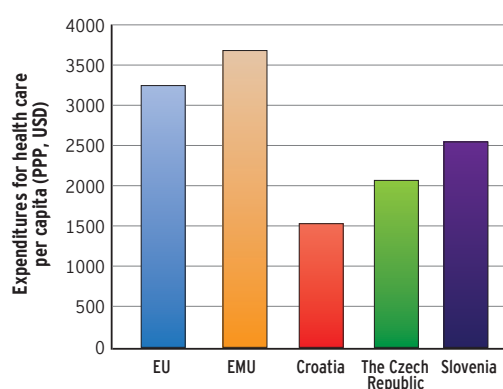


Figure 29. Expenditures for health care per capita (PPP, USD) in Croatia, the EU, EMU, the Czech Republic and Slovenia in 2010. Source: World Bank, database.

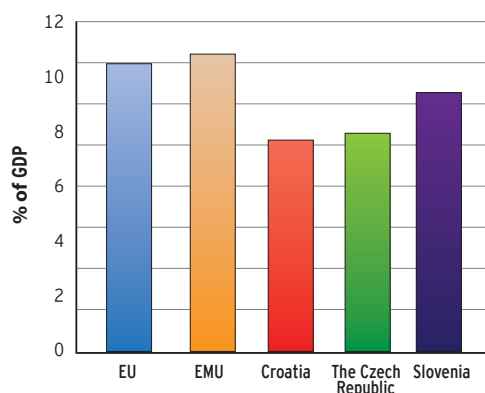


Figure 30. Total expenditures for health care in Croatia, the EU, EMU, the Czech Republic and Slovenia (% of GDP), 2010. Source: World Bank, database

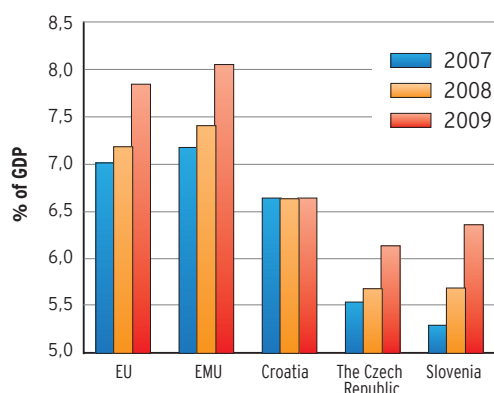


Figure 31. Public expenditures for health care in Croatia, the EU, EMU, the Czech Republic and Slovenia (% of GDP), Source: World Bank, database

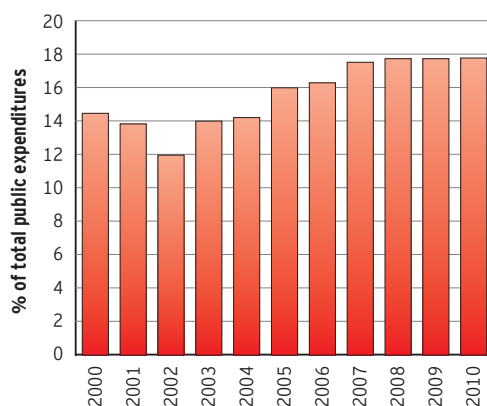


Figure 32. Public expenditures for health care in Croatia (% of total public expenditures). Source: World Bank, database

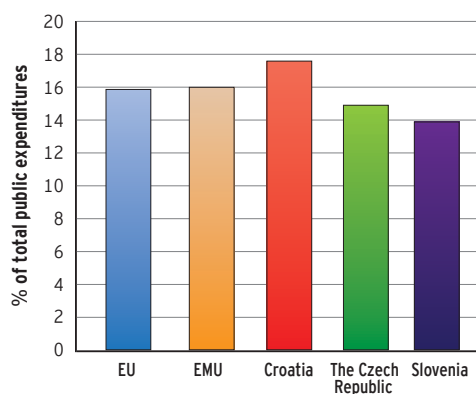


Figure 33. Public expenditures for health care in Croatia, the EU, EMU, the Czech Republic and Slovenia (% of total public expenditures). Source: World Bank, database

2010 they amounted to 13.8% (Figure 33). Although the public expenditures for health care as a share in total public expenditures are higher in Croatia than in the EU countries, in the absolute terms such expenditures are smaller, taking into consideration the total GDP of the Republic of Croatia, as well as the amount of total public expenditures.

The share of **private expenditures for health care** in GDP in Croatia is lower than in the EU and EMU countries, Slovenia and the Czech Republic, and in 2008 and 2009 it amounted to 1.18% GDP. In 2009, it was 1.26% of GDP in the Czech Republic, while in the EU and EMU countries and Slovenia it exceeded 2% of GDP. Furthermore, in Croatia, public expenses participate with about 85% in the total expenditures for health care, which is more than in 2010 in EU (77%), EMU (76%), Slovenia (74%), while the Czech Republic with 84% was close to Croatia according to this indicator (Figure 34 and 35).

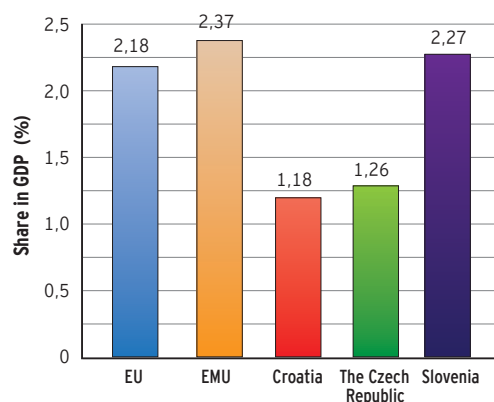


Figure 34. Private expenditures for health care in Croatia, the EU, EMU, the Czech Republic and Slovenia. Source: World Bank, database

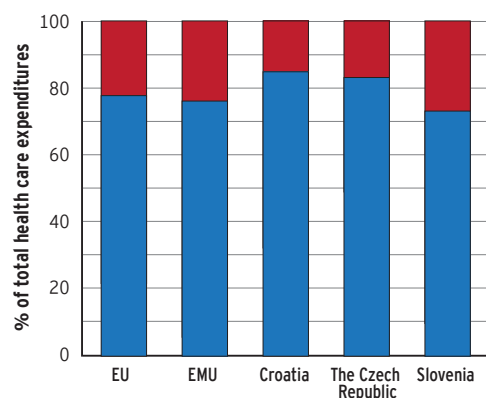


Figure 35. Public and other expenditures for health care in Croatia, the EU, EMU, the Czech Republic and Slovenia (% of total health care expenditures). blue - public expenditures; red - other expenditures. Source: World Bank, database

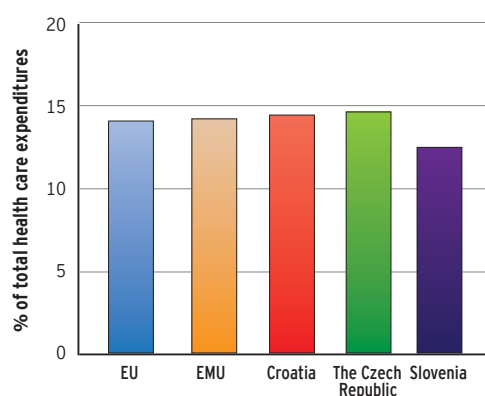


Figure 36. Inhabitants' out-of-pocket payments in Croatia, the EU, EMU, the Czech Republic and Slovenia (% of total health care expenditures). Source: World Bank, database

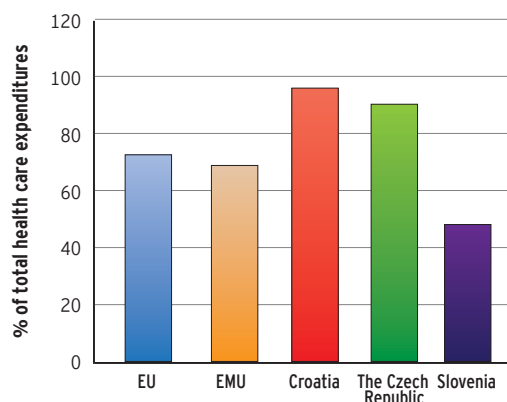


Figure 37. Inhabitants' out-of-pocket payments in Croatia, the EU, EMU, the Czech Republic and Slovenia (% of private expenditures for health care). Source: World Bank, database

The patients must pay from their own pockets to the privately owned health care service providers (who do not have a contractual relationship with the Croatian Institute for Health Insurance) and, if they do not have additional health insurance, to the service providers who have a contractual relationship with the Croatian Institute for Health Insurance for the services that are not completely covered by the mandatory health insurance. In 2010, the shares of **inhabitants' out-of-pocket payments** in the total expenditures for health care in Croatia were very similar to those in the EU, EMU and the Czech Republic, and slightly higher than those in Slovenia (Figure 36). However, in the total private expenditures for health care, the share of out-of-pocket payments in Croatia (95.9%) is significantly higher than in the EU, EMU and Slovenia (Figure 37).

Considering the size of the share of public health care expenditures in the total health care expenditures, Croatia is the leading transitional country and among the leading ones when compared to

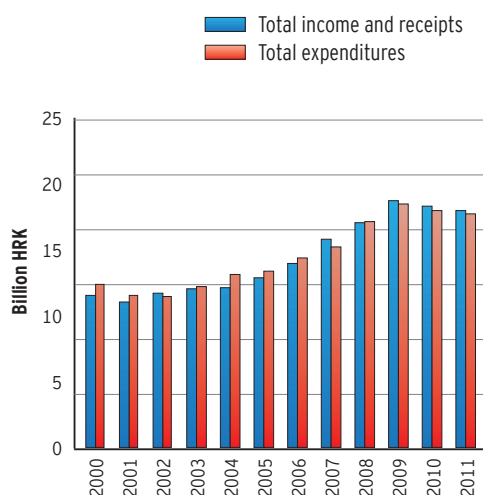


Figure 38. Total income and expenditures of the Croatian Institute for Health Insurance (CIHI) 2000–2011. Source: CIHI

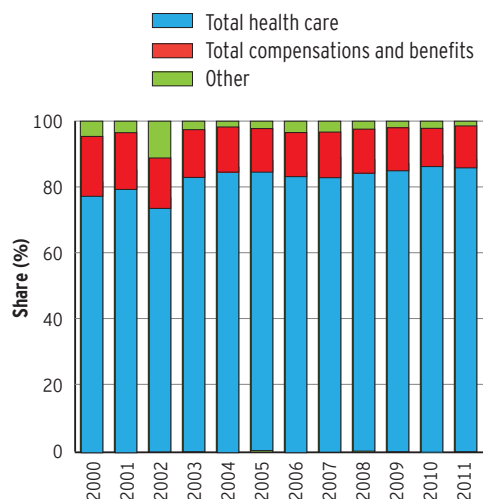


Figure 39. Expenditure structure of the Croatian Institute for Health Insurance (CIHI) 2000–2011. Source: CIHI

developed European countries. High expenditures for health care and the fact that compensations and benefits such as sick leaves, maternity leaves, and reimbursement of transport costs are paid from the mandatory health insurance caused **Croatian Institute for Health Insurance (CIHI)** to accumulate losses, which are partially covered by loans and state subsidies.

For the most part of the 2000 to 2011 period, CIHI operated with loss. Surplus of income over expenditures was achieved in 2002 and 2007, as well as in the period from 2009 to 2011, while the greatest deficit was generated in 2004 (HRK 1.17 billion) (Figure 38). The most significant **source of income** is income from the budget for regular operation including income from contributions and transfer from the budget. In the period from 2000 to 2011, the income from the budget shows a growth trend, and its share in total income for 2011 amounted to 92.2%. On the other hand, the largest part of the **expenditures** of CIHI is health care and compensations (Figure 39). Expenditures for total health care in the period from 2000 to 2011 show a growth trend, but the same were reduced in 2010 and 2011 when compared to 2009. In 2011, health care participated in the total expenditures in the amount of 86.2% (HRK 18,425 million), and the total compensations in the amount of 12.1%. Concerning the structure of expenditures for health care, the greatest share of the expenditures is for hospital health care (HRK 8,150 million or 44.2%), prescription medicines (HRK 3,030 million or 16.4%) and primary health care (HRK 2,918 million or 15.8%). Expenditure structure for compensations consists mostly of benefits in case of sickness or invalidity, which amounted to HRK 1.055 million in 2011 and maternity leave benefit, which amounted to HRK 896 million in the same year. However, both types of benefits, as well as total compensations, have been reduced since 2009.

Total **liabilities of CIHI** increased in the period from 2000 to 2011. On 31 December 2011, total liabilities amounted to almost HRK 4.662 million, mature liabilities thereof amounting to HRK 154 million, and non-mature liabilities amounted to approximately HRK 4,335 million. If compared to the previous year (2010), such situation represents an increase of liabilities. In order to evaluate the status of CIHI's liabilities, information on contracted payment deadlines presents an important piece of information. Regardless of the fact that they are budget users, CIHI agreed with the health care

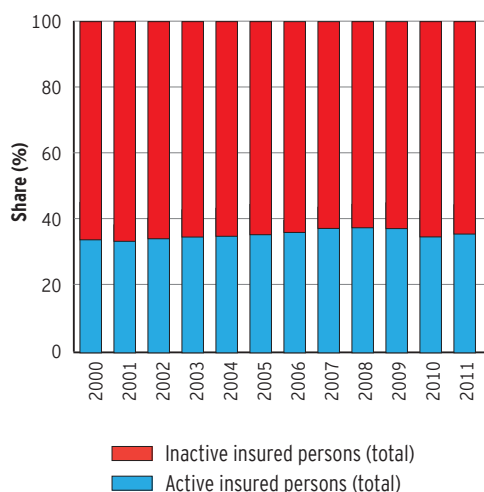


Figure 40. Share of active and inactive insured persons 2000–2011. Source: Croatian Institute for Health Insurance

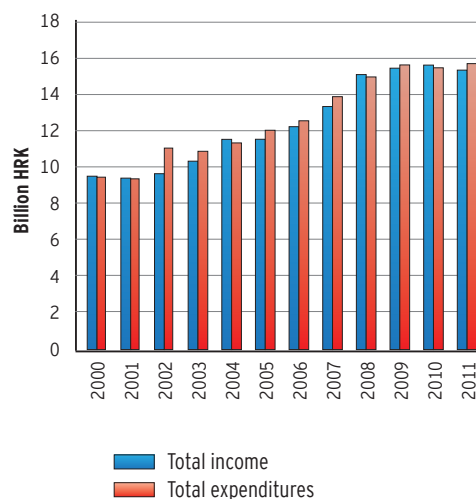


Figure 41. Total income and expenditures of health care institutions, 2000–2011. Source: Croatian Institute for Health Insurance

institutions on payment deadlines from 30 to 180 days. It is evident that CIHI has significantly more mature liabilities since 2009, which is mostly the result of extension of contracted payment deadlines towards health care institutions (prescription medicines from 120 to 180 days, especially expensive medicines from 30 to 90 days, transplantation programmes from 30 to 90 days, and intervention cardiology and neurology programmes from 30 to 90 days), and are less the result of an increased inflow of assets.

In order to understand the financial operation of CIHI, the information on the **number of insured persons** is very important. Data from 2011 show that there is about 35% of active insured persons

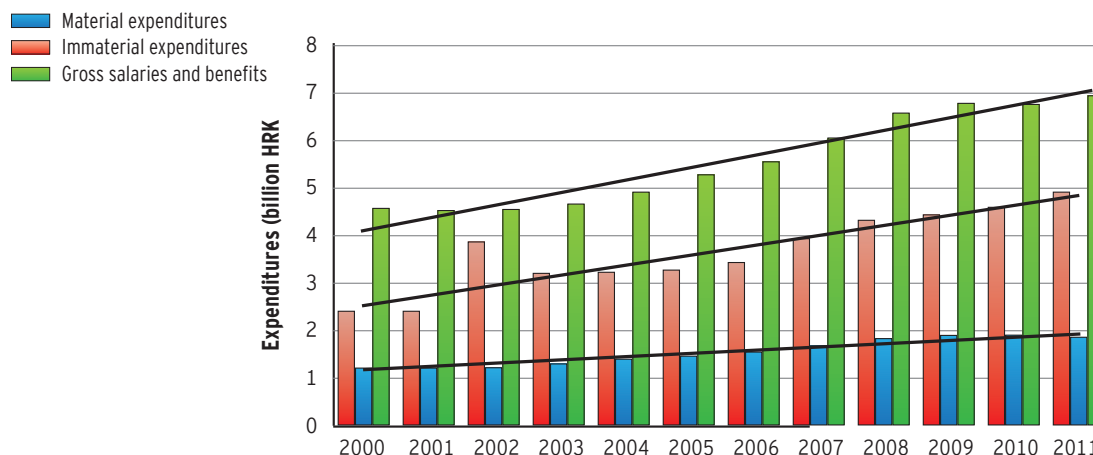


Figure 42. Expenditures for gross salaries and benefits, material and immaterial expenditures of health care institutions 2000–2011. Source: Croatian Institute for Health Insurance

(active workers and active farmers), and 65% of inactive insured persons (retirees, family members and others) (Figure 40).

The payment system of primary and hospital health care includes several mechanisms. The payment of health care in primary health care is performed via the capitation, with an additional mechanism of paying the price for service, i.e. a mechanism of paying per therapy. Hospital health care facilities contract the budget with CIHI for the period of one year. The central government and counties collect additional assets for health care from general taxes and spend them independently of CIHI for investments in infrastructure and technical equipment, and for maintaining public health care services providers. The Ministry of Health has a smaller share in expenditures for health care. It spends about 0.2-0.3% of GDP a year on programmes, planning and regulation of public health and similar. The central government finances clinical hospitals and clinical hospital centres, whereas counties finance general and special hospitals and primary health care centres in their property. Every year, the central government distributes a minimum amount per counties for capital investments, primarily based on the size of the covered population, but also based on the institutions and the number of beds in each county.

Income and expenditures of health care institutions show a growth trend, however, the income in 2011 decreased when compared to 2010 (Figure 41). The data on the structure of expenditures of the health care institutions in 2011 show that the greatest expenditures are those for gross salaries and benefits, as well as tangible expenditures (Figure 42).

Average **net and gross salaries** increased in the period 2000-2011, although nominal increase of salaries does not mean an increase of salaries in real terms. Average number of employees based on the hours of work increased by 457 workers in 2011 when compared to 2010, and the increase of the number of employees is also visible in the entire period from 2000 to 2011.

In the structure of **material expenditures** in 2011, the most expenditures refer to medicines and medical materials (almost 60% of the total material expenditures). A significant increase of expenditures is evident for energy spent in the observed period from 2000 to 2011, which can partially be explained by an increase of prices of energy sources. It is noticeable that in 2011, there were no expenditures for **investment maintenance**, which amounted on average to HRK 96.5 million a year in the period from 2000 to 2010.

INFRASTRUCTURE AND USE OF THE HEALTH CARE SYSTEM

Primary health care

In the services of **general practice/family medicine** and **health care of pre-school children**, a total of 2,540 teams worked at 2,544 locations in the Republic of Croatia in 2010. Out of 2,540 physicians, 1,505 were specialists, 1,072 thereof were specialists of general practice/family medicine, 255 were specialists of paediatrics, 88 were specialists of occupational medicine, 71 were school medicine specialists and there were 19 specialists of other types of specialisation. Compared to 2009, the number of family medicine specialists in 2010 increased by 3.4%.

Among other health care workers, 37 had a university degree, and 2,498 a high school degree. The number of visits to the offices of general practice/family medicine and health care of pre-school children in 2010 amounted to 28,626,050, which is 0.5% less than in 2009. The number of house visits during 2010 was 332,369, which is 2.5% more than in 2009, but 39% less than in 1990.

The number of patients referred to a specialist examination has been monitored since 1995. In 2010, there were 7,198,924 recorded references to specialist examinations by primary health care teams, which is 0.4% less than in 2009. However, it is 43% more than in 1995. That increase can partially be explained by the fact that contemporary algorithms and manners of treatment sometimes require more diagnostic examinations and controls. Apart from that, in order to interpret such increase properly, it must be taken into account that a portion of the reference (to control examinations) is induced by physicians from the specialist-consiliary health care, and the primary health care physicians only execute such instructions.

In the service of general practice/family medicine and health care of pre-school children, a trend of reducing the number of preventive examinations and visits is evident in the past 10 years (Figure 43).

The order and share of the first five groups of diseases and conditions determined in the Republic of Croatia from 2001 to 2010 in the services of general practice/family medicine and health care of infants and small children has not changed significantly in the past ten years. The most common diseases are those of the respiratory system, with the share of 20-25%, followed by heart and blood vessel diseases (9-11%), diseases of the muscular and skeletal system (9-10%), diseases of urinary and reproductive organs (5-6%), and diseases of the skin and subcutaneous tissue (5-5.5%).

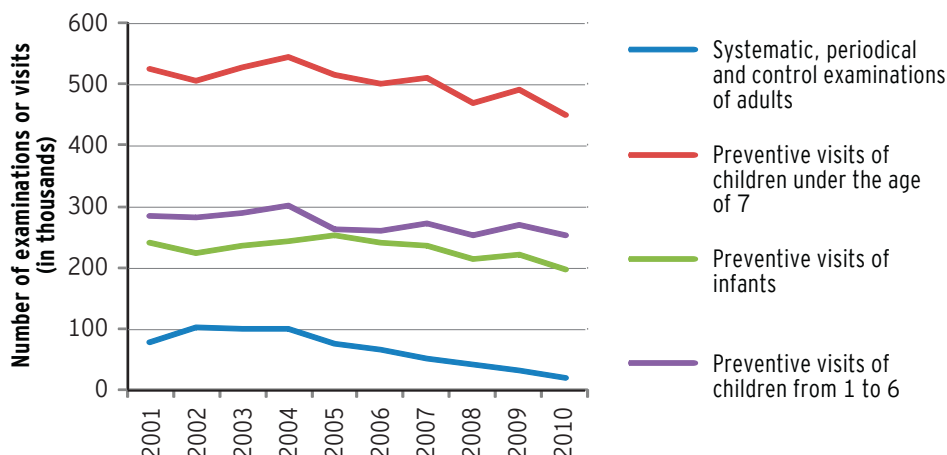


Figure 43. Number of systematic, periodical, control and preventive visits and examinations in the service of general practice/family medicine and health care of pre-school children in Croatia from 2001 to 2010. Source: Croatian Public Health Institute.

In the profession of **health care of women** in 2010, there were 219 teams working full-time under a contract with the Croatian Institute for Health Insurance (CIHI), and 21 teams working part-time, while in the same year, in private practice offices, without a contract with CIHI, 60 teams worked full-time and 10 teams worked part-time.

In the past 10 years, there was an increase in the total number of women in care – from 1,410,107 in 2001 to 1,535,626 in 2010 – while at the same time, a share of women using care in gynaecological offices of primary health care working under a contract with CIHI decreased – from 56.1% in 2001 to 41.1% in 2010. During 2010, 1,585,235 visits and 867,474 examinations were recorded, which is 192,433 less examinations than in 2001. The average number of examinations per pregnant woman in 2010, at the level of the entire Republic of Croatia, amounted to 8.5 examinations per pregnant woman.

In 2010, there were 77,623 visits of women for the purpose of family planning and/or prescribing a birth control method; in gynaecologist's offices of the primary health care, only 7.5% of women of fertile age were prescribed a birth control method, the most common being oral contraceptive (75.5%) and intrauterine device (12.9%). In 2010, 486,581 preventive examinations of women were performed (473.3/1,000 women of fertile age), and the largest number of preventive examinations referred to gynaecological examinations (65.8%), while only 73,060 preventive breast examinations (71.1/1,000) were performed, 5.4% thereof with pathological results; 408,603 samples of PAPA smear were taken (397.4/1,000 of women of fertile age), and 8.0% thereof were pathological.

In the profession of **occupational medicine**, the total of 403,231 examinations was performed in 2010 (an increase of 12.7% if compared to the previous year). The rate of preventive examinations was the highest in the past five years, and it amounted to 281.5 per 1,000 employees. The rate of periodic examinations also increased if compared to the previous years, and it was 113.1 per 1,000 employees in 2010.

In 2010, 838 diploma-level registered nurses (712 in 2001) and 123 high school degree nurses (133 in 2001) worked in the **patronage nursing system**. The largest number of home visits was to chronic patients (821,927 or 58% of the total number of home visits) for the purpose of instructing and demonstrating certain procedures of self-management and prevention of complications, and implementing therapy procedures in patients with limited mobility and immobile persons, in agreement with the responsible physician. In 2001, patronage nurses performed 714,229 home visits (56% of the total number of home visits).

According to the data by the Croatian Institute of Emergency Medicine, in **emergency medical service** there was a trend of increasing number of teams (from 445 in 2009 to 794 in 2011), medical doctors (from 456 in 2009 to 564 in 2011), nurses and medical technicians (from 897 – including ambulance transport – in 2009 to 1254 in 2011) and a reducing number of drivers (from 1014 – including ambulance transport – in 2009 to 539 in 2011). In 2010, the number of interventions in emergency medical services' offices was 1,025,980 (a decrease by 5.2% compared to 2009). Number of interventions in patients' homes was 186,914 (an increase by 0.2% compared to 2009), and the number of in-field interventions was 68,914 (7.4% less than in 2009). There were 542,461 ambulance transports, with an increase of 3.7% compared to 2009.

In order to provide emergency medical care on roads, islands and hard-to-access areas in the Republic of Croatia in cases of mass accidents, and for transporting transplant organs and medical staff in emergencies, it is necessary to provide emergency medical air transport and rapid boat transport. Emergency medical air transport is performed by available military capacities. Emergency medical air transport reduces the transport time, ensuring equality of providing emergency medical care at hard-to-access locations and islands, compared to inland, urban parts of the county. The average duration of emergency medical transport in 2012 was 49 minutes and 45 seconds, which fulfils the goal of successful reorganisation of emergency medical service by providing aid to emergency patient within the "golden hour". During 2011, for the needs of the health care system, the total of 1,387 medical flights was performed. There were 437 helicopter flights, transporting 478 patients. Each inhabited island has at least one intervention heliport. For the needs of providing emergency medical care, sea transport services are also provided, however, emergency marine transport of patients is performed by privately-owned, inadequate ships or by vessels of the Ministry of the Interior.

Specialist – consiliary health care

In hospitals and treatment centres in 2011, there were the total of 3,364 specialist-consiliary units, 1,839 thereof in clinical hospital centres, clinical hospitals and clinics, 1,327 in general hospitals, 51 in psychiatric hospitals, 143 in special hospitals and 4 in treatment centres. A specialist-consiliary service is also provided in 352 independent polyclinics, 513 private specialist offices and 264 companies registered for performing health care activities.

The number of examinations in offices and institutions that had a contract with CIHI in 2010 was 17% higher than in 2000, when 6,598,913 examinations were recorded. Compared to 2000, when one specialist examination was performed per every 2.7 examinations in the service of general practice/family medicine, this ratio decreased to 1.9 in 2010.

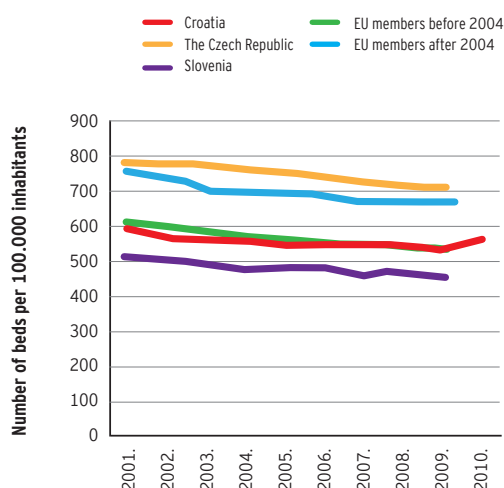


Figure 44. Number of hospital beds in hospitals per 100,000 inhabitants (WHO) 2001 to 2010. Source: WHO Health for All Database

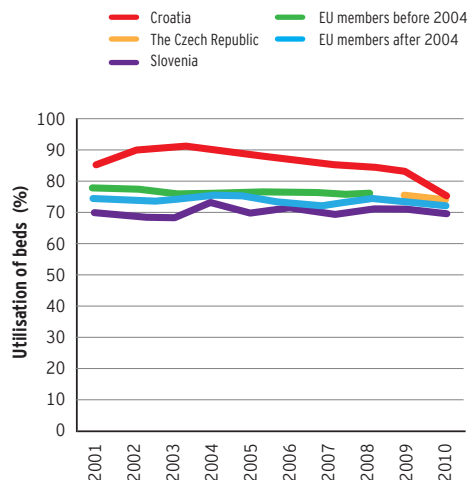


Figure 45. Percentage of utilisation of beds in acute hospitals (WHO) 2001 to 2010. Source: WHO Health for All Database

Hospital health care

In May 2012, there were five clinical hospital centres, three clinical hospitals, five clinics, 22 general hospitals, 26 special hospitals and three treatment centres in the Public Health Care Service Network in Croatia. According to estimates published in the Croatian National Health Care Development Strategy 2006-2011, less than 10% of population in Croatia lived more than 40 km away by air from the closest hospital..

Number of beds in all inpatient health care facilities, expressed per 1,000 inhabitants, decreased from 6.00 in 2001 to 5.66 in 2010 (Figure 44). Based on the bed structure per 1,000 inhabitants, there were 3.97 beds for acute treatment in 2011 (4.07 in 2010) and 2.03 beds for subacute and chronic treatment in 2011 (1.59 in 2010). In 2010, there were 9,789 beds in clinical hospital centres, clinical hospitals and clinics, 7,049 beds in general hospitals, inpatient facilities and out-of-hospital maternity facilities, and 8,179 beds in special hospitals and treatment centres. In Croatia, as well as in most European countries, there is a trend of reducing the number of hospital beds, although by making changes to the Public Health Care Service Network in 2010, compared to 2009, the number of beds increased in clinical hospital centres, clinical hospitals and clinics (by 13.8%), as well as in special hospitals and treatment centres (by 2.6%). The total annual **utilisation of acute beds** was 75.19% in 2010 (85.5% in 2001), which is more than in the Czech Republic, Slovenia and the EU members before and after 2004. (Figure 45).

The most common groups of diseases in hospital care in 2001, 2005, 2009 and 2010 were circulation diseases, neoplasms, digestive tract diseases, respiratory tract diseases, diseases of the genitourinary system, as well as injuries and poisoning. **The largest average duration of the hospital treatment**, of acute as well as subacute and chronic patients, was recorded in psychiatric speciality. In 2010, the total number of discharged patients from inpatient wards in Croatia was 745,692, which is three times more than at wards of daily hospitals and haemodialysis, where the total of 244,562 patients was discharged.

According to the survey from 2011, **the room structure** is most favourable in special hospitals and treatment centres, where most rooms have their own sanitary facilities, while the worst situation was recorded at psychiatric hospitals. Availability to the disabled persons is provided in 80% of the observed basic activities at hospitals in Croatia, and it is somewhat better in general hospitals (84%), compared to clinical hospitals (70%). About 40% of operation rooms have not been renovated since 2000.

The objects in the health care system are large **consumers of energy and water**, which arises from their specific type of activity, complexity of the heating system, cooling and ventilation, a large number of employees and users, and an all-day operation regime. According to the Third annual report of the Croatian Government programme “House in Order” from 2011, hospital facilities under the jurisdiction of the Ministry of Health included in the project (14 energy units in clinical hospital centres, three in clinical hospitals, one in a general hospital, 17 in special hospitals and seven in clinics) consume alone about 482 million kWh a year. The calculation based on data from that report show that the total consumption of energy in the said hospital facilities is about 630 kWh/m², which is twice the consumption compared to the average of European countries with the best energy efficiency in hospital facilities.

The data concerning **highly sophisticated hospital equipment**, collected in a survey in 2010, show that in comparison to most European countries, Croatia has a satisfactory number of computed tomography (CT), magnetic resonance (MR) and mammography devices, while there is a need for further investment in radiotherapy equipment.

Pharmacy services

Pharmacy services were provided by 1082 contracted pharmacy units in March 2012 (1063 pharmacies and 19 depots of medicines) and 46 hospital pharmacies. 66.5% of pharmacies are privately-owned, 11.9% of pharmacies are leased, and 21.6% of pharmacies are the property of counties and the City of Zagreb. According to statistical indicators, there is currently one pharmacy per 4000 inhabitants in Croatia, while in the EU there is one pharmacy per 3000 inhabitants, on average. The largest number of new pharmacies was founded in the areas of largest towns, while rural areas and underdeveloped areas of special state concern still have insufficiently developed pharmacy network.

Dental protection and treatment

In dental health care profession, there were a total of 1,748 teams working under a contract with the Croatian Institute for Health Insurance (CIHI) in 2010. Those teams took care of 3,890,514 insured persons, and 1,363,217 thereof (35%) used health care. Along those teams, the services were provided by 658 teams without a contract with CIHI.

Health care of elderly people

National and county Centres for gerontology operate at the county institutes of public health, the City of Zagreb and Croatia. Apart from Centres for Gerontology, there are Gerontology Centres as

multifunctional centres of immediate and integral multidisciplinary care for elderly people in the local community. A total of 79 Gerontology Centres for community care of elderly people operates in Croatia, 12 thereof in Zagreb, where most elderly people live.

Health care of Croatian homeland war veterans

In 2011, 80 Croatian disabled war veterans (HRVI) used medical rehabilitation. In the period from 2005 to 2011, the total of 811 HRVIs achieved the right to medical rehabilitation. At the time being, there are 485 Croatian disabled war veterans with 100% bodily impairment of group I, who are legally entitled to use services by a person providing care and aid, and there are 441 persons providing such care and aid. The Ministry of War Veterans implements a National programme of psycho-social and health aid provided to the participants and victims of the Homeland War, which is implemented in the whole Republic of Croatia. That aid is provided through the work of Regional Centres for Psychological Trauma and Crisis Management Centre, providing the total of 225,974 interventions for 59,642 users in 2011.

Palliative care

There is still no comprehensive system of palliative care in Croatia. There are only several institutions that have established certain forms of the palliative care. In the past five years, number of persons who died at home has decreased, and the number of people who died in hospitals and nursing homes has increased. The largest increase of the share from 6% in 2005 to 10% in 2010 refers to the nursing homes. About 40% of people in Croatia die out of hospitals. This amounts to 21,000 deceased persons, and several thousand thereof either die in an accident or outside their home, i.e. in social institutions or nursing homes. More than 30% of all deceased, i.e. more than 15,000 people, die at home. Since September 2011, in Public Health Care Service Network, 608 beds for long-term treatment and 185 beds in the palliative care profession are planned.

Transplantation medicine

From 2004 to 2011, a multiple increase was achieved in the total number of organ donors and the number of organ transplants, as well as number of individual kidney, liver and heart transplants. The total number of transplanted organs in the period from 2004 to the end of 2011 increased by 205%. According to the donor rate, Croatia is currently the first in the world and the most successful member of Eurotransplant, and leading in the number of kidney and liver transplants per million inhabitants. Based on the number of heart transplants and the total number of transplanted organs per million inhabitants, it also holds one of the leading positions in the world (in 2010, it was the second in the world in number of heart transplants per million inhabitants, and third in the world in the number of total transplanted organs per million inhabitants). The total waiting list for organ transplant decreased by 36% in the period from 2007 to 2011. The waiting period for kidney transplant has been reduced from 48 months to 24 months in the same period.

Crisis management

Crisis situations in health care refer to threats to health associated with new or newly occurred diseases, accidental release or intentional use of biological, chemical or radio-nuclear agents, natural disasters, disasters caused by human action, complex emergencies, conflicts and other events with potential catastrophic effect on human health. The goal of an integrated system of crisis situation medicine in the Republic of Croatia is to increase the probability of surviving in large accidents or crisis situations with mass casualties. In case of very complex and significant mass incidents, the leadership and supervision over distribution of the health care resources is taken over by the Crisis Management Committee of the Ministry of Health, acting through the central command and regional departments of the Crisis Management Committee. In such circumstances, all health care organizations are expected to adhere to the instructions received by the Crisis Management Committee.

National preventive health programmes

National preventive health care programmes are focused on early detection of various diseases and/or early detection of complications of individual diseases, with the goal of providing higher quality of life of individuals and extension of their life span. The key preventive programmes in Croatia are:

- preventive activities on the primary health care level
- prevention and early detection of breast cancer
- national programme of early detection of colorectal cancer
- national programme of early detection of cervical cancer
- mandatory vaccination programme in Croatia
- Croatian national programme for prevention of HIV/AIDS, 2011 – 2015
- national programme for control of antibiotic resistance of bacteria in the period from 2009 to 2014
- national plan of preparedness to flu pandemic
- containing tuberculosis with TBC laboratory on the necessary level of bioprotection
- system for prevention and treating addictions and for mental health, established in county institutes of public health
- breastfeeding promotion programme in Croatia
- programme of protection against domestic violence
- prevention of injuries in children
- prevention of suicide in children and youth
- programme of psycho-social aid at children's oncology wards
- prevention of obesity
- national programme of health care of persons with diabetes
- national programme for Roma

HUMAN RESOURCES IN HEALTH CARE

At the end of 2011, there were 73,077 permanently employed in the Croatian health care system. Thereof there were 55,781 health care workers and associates, 5,068 administrative workers and 12,228 technical workers.

In the structure of permanently employed, the largest portion of health care workers has high school degree, amounting to 38% (29% of nurses and 9% of other workers), while medical doctors make up 17% (Figure 46).

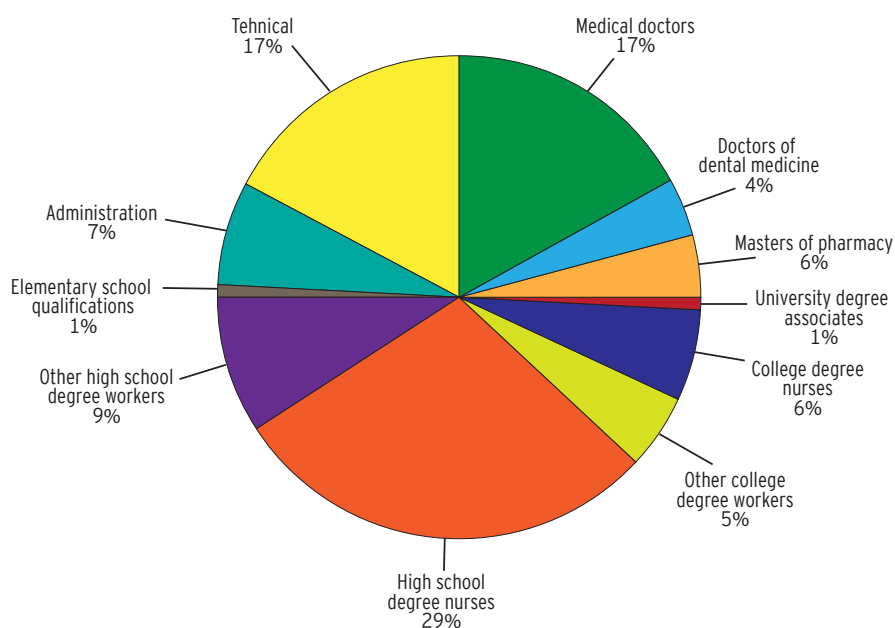


Figure 46. Structure of employees in health care in 2011. Source: Croatian Public Health Institute

There is a long-term trend of a mild increase in all categories of health care workers (except health care workers with elementary school qualifications), as well as a trend of decrease in the number of and the share of employees in administrative-technical workers (in 2000 there were 30% of them).

The average age of all employed health care workers is 49.5 years, and compared to the situation from 1995, it increased by 5.9 years.

Medical doctors, doctors of dental medicine, masters of pharmacy, nurses, as well as other health care workers, are professionally organised in **chambers** which grant and renew licences, and also act through various professional associations, according to their speciality. In 2012, eight chambers operated in Croatia: Croatian Medical Chamber, Croatian Dental Chamber, Croatian Chamber of Pharmacists, Croatian Nurses Chamber, Croatian Chamber of Midwives, Croatian Chamber of Physical Therapists, Croatian Chamber of Medical Biochemists and Croatian Chamber of Health Professionals. **Croatian Medical Association**, consisting of 123 professional interest groups, plays a traditional role in improvement of professional and scientific work of physicians and dentists, acts in regional chapters and cooperates with international professional associations. **Croatian Nurses Association** plays a similar role in the nursing profession. It consists of 25 professional interest groups and 41 regional chapters throughout Croatia.

Medical doctors, doctors of dental medicine, masters of pharmacy

In 2011, there were 12,532 permanently employed **physicians** in Croatia. Compared to 1980, the number of physicians per 100,000 inhabitants increased from 167 to 281, which is still less than the EU average (320/100,000).

Distribution of physicians **per age and sex** shows that female physicians exceed the male physicians in all age groups, except in those over 60. There are less physicians in the age group 25-29 than in the age group 55-59 (Figure 47).

The distribution of physicians **per type of health care institution they work at** shows that 58% of physicians work in hospitals. The number of medical doctors in primary health care service, expressed per 100,000 inhabitants, has gradually reduced in the past 10 years (Figure 48).

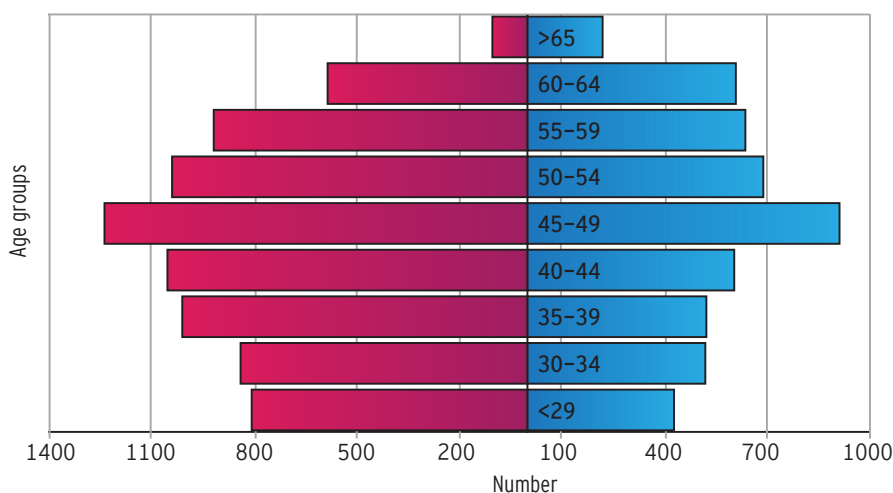


Figure 47. Medical doctors per sex and age groups, Croatia, 2008. Source: Croatian Public Health Institute

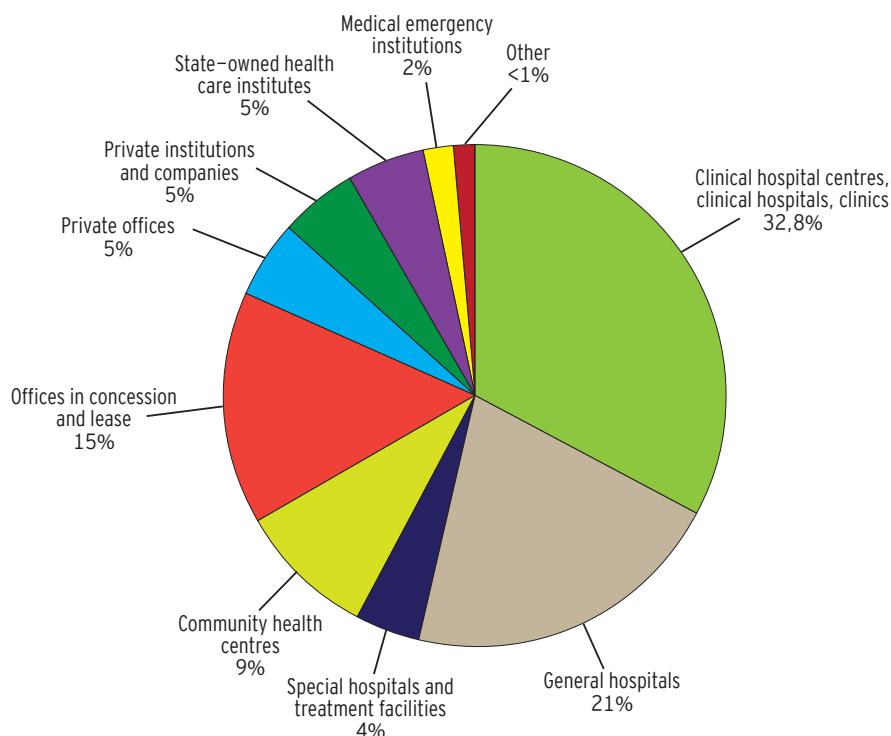


Figure 48. Medical doctors per type of medical institution they work at, 2011. Source: Croatian Public Health Institute

The number of **doctors of dental medicine** in Croatia is satisfactory, taking into consideration the fact that there were 75/100,000 inhabitants in 2006 (EU average: 66/100,000 inhabitants). Among the doctors of dental medicine, the share of women is 65%, and the share of specialists is 15%.

Approximately 2900 **masters of pharmacy** and 1950 **pharmacy technicians** are currently employed in pharmacy service in Croatia. The number of masters of pharmacy per 100,000 inhabitants in Croatia is 60, which is less than the EU average (77/100,000).

Medical nurses and technicians

In the total number of health care workers, nurses make up almost half of them (46%). In the group of health care workers with college and high school qualifications, with 35,705 employees, nurses and medical technicians make up 71%, and the rest are mostly health care engineers and technicians. According to the data from the Register of Croatian Nurses Chamber in the Republic of Croatia, there are 6147 nurses/medical technicians with a university degree in nursing. Compared to 1980, **the number of nurses** per 100,000 inhabitants increased from 354 to 569 in 2010, which is still below the EU average (782/100,000). **Age structure of nurses/technicians** is unfavourable, since there are more of them aged 45 and over (n=12,969) than under 45 (n=12,388) (Figure 49).

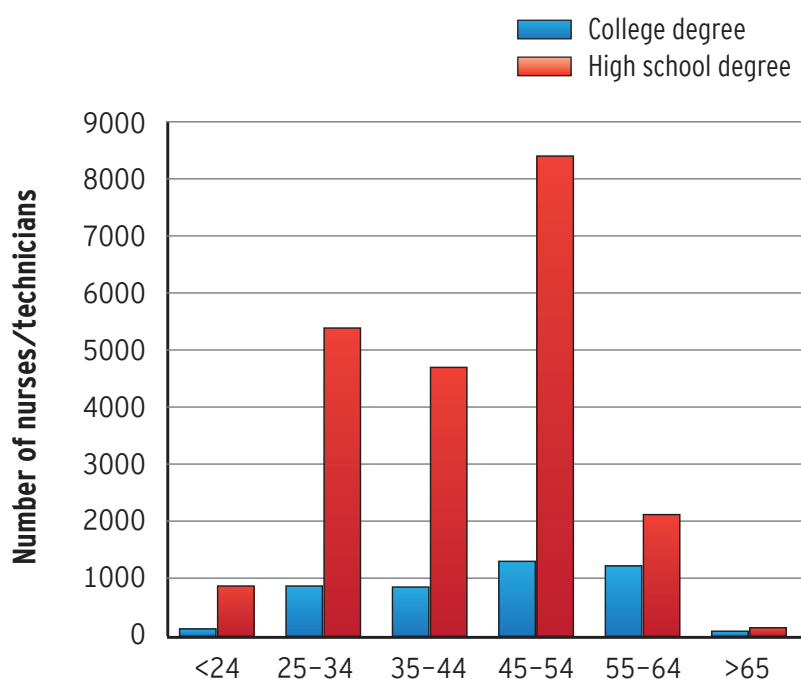


Figure 49. Age structure of nurses and medical technicians in Croatia in 2011. Source: Croatian Public Health Institute

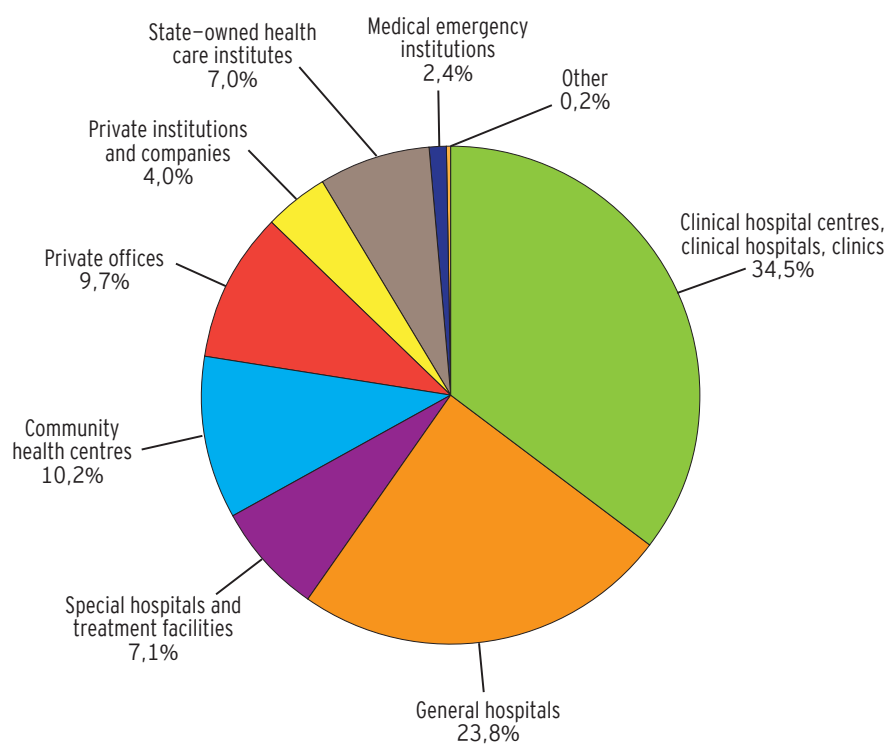


Figure 50. Nurses and medical technicians per type of medical institution they work at, 2011. Source: Croatian Public Health Institute

Taking into consideration the type of health care institutions they work at, most nurses and technicians work at clinical hospital centres, clinical hospitals and clinics, and general hospitals (Figure 50).

The number of midwives per 100,000 inhabitants in Croatia is 35, which is slightly more than the EU average rate (32/100,000 inhabitants). However, according to the data from the Croatian Chamber of Midwives, a third of midwives in Croatia do not work in the midwife profession at all, but they work as nurses, laboratory technicians and dental assistants.

Health profession of medical laboratory activities, medical radiologic profession, environmental and public health profession, and occupational therapy profession

According to the data of the Croatian National Institute of Public Health, a total of 2226 (70%) of medical laboratory technicians and 958 (30%) engineers/bachelors of medical and laboratory diagnostics worked in Croatia in 2010. The number of health care workers in the environmental and public health profession was 398, 188 thereof environmental and public health technicians and 210 environmental and public health engineers. The number of health care workers in the medical radiologic profession was 1010, 24 thereof radiological technicians and 986 radiological engineers. The number of health care workers in the occupational therapy profession was 97, thereof seven occupational therapy technicians and 90 occupational therapists. Data from the Register of the Croatian Chamber of Health Professionals indicate slightly greater number of workers in all of the listed groups of professions.

Safety and protection of health care workers

The health care profession is one of high-risk professions, and with the rate of 7.5/100,000 and 904.4/100,000 it is above the average rate for Croatia when it comes to professional diseases and work-related injuries, respectively. Out of the total of 101 registered professional diseases in 2010, 7% referred to health care and social welfare, and 8.9% out of the total of 15,791 reported work-related injuries in 2010 referred to the same professions. All institutions within the health care system are obliged to conduct hazard assessment of all their workplaces in order to determine the risks and appropriate occupational safety measures.

The importance of health care and occupational safety of the employees working in the health care profession has been recognised globally. In May 2007, 193 member states of the World Health Assembly confirmed the Workers' health: global plan of action (GPA) and accepted a 10-year action plan where a development of national programmes for health care and operational safety of the health care workers is stipulated.

Education of health care workers

Education of health care workers in Croatia is implemented in a well-organised network of faculties of medicine and health schools. **The study programmes** are performed at 40 locations (towns), with some of them being centres of high education (28 locations), and in some of them (remaining 12) only dislocated studies of a high education facility are held, with a central office in another town, mostly in another county as well. The total of 1202 study programmes is performed at the central locations of the high education facilities, and 58 programmes are dislocated studies.

At the moment, the field of nursing education is insufficiently regulated, with unclear qualifications and competencies acquired in various existing forms of education. In terms of educational standards, as well as of vertical and horizontal educational mobility, health profession of medical laboratory activities, medical radiologic profession, environmental and public health profession, and occupational therapy profession in Croatia are in significant discrepancy when compared to EU countries. Namely, due to insufficiently developed or unavailable formal higher education, health profession workers improve their competencies only through non-formal and informal forms of education, or go abroad in order to acquire additional knowledge and skills.

Availability of **specialisations** is determined pursuant to the National plan for specializations and sub-specializations, brought each year by the Ministry of Health in accordance with the assessed needs of health care institutions. Due to the need for an increased staffing in certain professions after 2004, the responsible ministry approved a higher number of specialisations and subspecialisations, among others, for the primary health care.

PATIENTS' RIGHTS AND PROBLEM OF CORRUPTION

All patients' rights can be considered in one of the following three groups: human rights, insured persons' rights and consumers' rights. The consumers rights are assessed by the [Euro Health Consumer Index](#), based on semi-quantitative evaluation of 42 indicators, grouped in five categories: 1) Patient rights and information; 2) Accessibility of treatment (waiting times); 3) Medical outcomes; 4) Range and reach of services provided and 5) Pharmaceuticals. In 2012, the analysis included 34 European countries, and Croatia was ranked 17th, in the middle of a range between the Netherlands as the best ranked country, and Serbia as the worst ranked country. There is a room for improvement of consumers' rights of patients in Croatia, primarily in the area of average waiting time for treatment.

Transparency International provides a general definition of corruption as misuse of public authority for personal gain. [Corruption in the health care sector](#) is defined as misuse of trust given by position. Transparency International analysis shows that health care is very susceptible to corruption, all over the world; corruption is present in both private and public health care systems, both in poor and in rich countries. For 2011, on the Transparency International's Corruption Perceptions Index scale from 0 (complete corruption) to 10 (no corruption) Croatia was evaluated with grade 4.0, which is one tenth of the point lower than in 2010, continuing the trend of the falling of the index that achieved the highest (best) value in Croatia in 2008 (4.4). In the global ranking, according to the Corruption Perceptions Index, Croatia was ranked 66th in 2011, behind the Czech Republic (57th) and Slovenia (35th).

MEDICINES AND ORTHOPAEDIC AND OTHER AIDS

Reduction of unit prices of medicines and implementing regulatory measures modelled upon other European countries, enabled inclusion of a **large number of new medicines** into the Croatian Institute for Health Insurance's (CIHI) list of medicines. Only in the period from 2009 to the end of 2011, 85 new, innovative medicines were put on the CIHI's list of medicines, while keeping the existing medicines on the list. The persons suffering from haemophilia are enabled to use a prophylactic treatment of their disease at home relatively simply, and e-prescribing commenced within the project of informatisation of primary health care that started at the beginning of 2011. The implementation of the project sped up the process of prescribing medicines in primary health care and enabled a simpler and more reliable supply of the prescribed medicine to the patients at any pharmacy under a contract with CIHI.

Deadlines for paying the pharmacies for prescribed medicines were brought within the contracted frameworks, i.e. they were shortened from over 290 days to 180 days. The availability of **especially expensive medicines** to the insured persons is significantly improved: the Fund for especially expensive medicines increased from HRK 350 million in 2008 to HRK 528 million in 2011. The availability of **orthopaedic and other aids** also increased significantly from 2007 to 2011. However, the expenditures for orthopaedic and other aids at CIHI's expense doubled in that period – from HRK 95 million in 2007 to HRK 182 million in 2011.

In the area of medicinal products and medical devices, an important role is played by the **Agency for Medicinal Products and Medical Devices of Croatia** (HALMED), which is a universal legal heir of Croatian National Institute for the Control of Medicines and Croatian National Institute for the Control of Immunobiologicals.

QUALITY MANAGEMENT IN HEALTH CARE SYSTEM

The quality management in Croatian health care system is regulated by legal framework, and it is implemented for the most part thorough the activities of the [Agency for Quality and Accreditation in Health Care and Social Welfare](#). Except the activities of granting, renewing and withdrawing accreditations, the Agency activities also include designing and implementation of the measures for improving the patient care quality and safety. The Agency is also included in the [health technology assessment](#) process, as well as the training processes in the quality assurance, improvement and promotion in the field of social welfare. By March 2012, the preparation of hospitals for [accreditation](#) was initiated in most hospitals that applied for a voluntary accreditation, while a relevant by-law is expected for implementation of the process. Accreditation standards are in the process of international validation. There are 60 [clinical guidelines](#) published in Croatia so far (31 in the journal Liječnički vjesnik and 29 at Croatian Medical Association's web sites), which means that there is still a large number of guidelines and algorithms that must be produced and implemented in practice. It is necessary to additionally strengthen the existing staff and capacity in order to improve the system of health care quality measurement and analysis, as well as for the health technology assessments.

INFORMATISATION AND eHEALTH

Central Health Care Information System in Croatia (CEZIH) with more than 17,000 users and a large number of information systems makes a good basis for informatisation of the entire health care system in Croatia. At the moment, all general practice/family medicine offices (approximately 2350), all paediatric offices (approx. 270), all gynaecological offices (approx. 270), all dentist offices (more than 1900), all pharmacies (more than 1150), primary health care laboratories (approximately 120), all school medicine offices (153), out-of-hospital specialist-consiliary health care (approx. 800) and information system of the Croatian Institute for Health Insurance are connected to CEZIH. All of the listed participants in the system send data into the central database in real time, and receive advanced reports on operation of the health care system from that database. By introducing **e-prescription** on 2 January 2011, complete national coverage was achieved, and a significant step was made towards “paperless office”. Over 50 million of e-prescriptions are issued through CEZIH system each year. Since 15 January 2011, a full national coverage of **e-referral** has been achieved in biochemical laboratory, and millions of electronic referrals and results of laboratory examinations have been exchanged in the system. In Croatia, by implementing the electronic information exchange mechanisms (e-prescription, e-referral, notes after each examination in primary health care, sick leave report, and four messages to Croatian National Institute of Public Health: “Pompidou” form, reports of malignant neoplasms, reports of infectious diseases, and unwanted side effects related to mandatory immunisation), a good ground was set for the central electronic health record of patients in the scope necessary for various health care professionals both in Croatia and in the entire Europe. An extremely important part of such data is a medical treatment history, which already exists in the system as an information.

Increase of **information technology literacy** among health care workers is another significant effect of current informatisation, which makes a significant precondition of future development and application of new information systems. Since 2006, 17,000 health care workers have obtained basic information training and use information applications in their daily work.

Out of the total of approximately 45,000 employees in Croatian hospitals, about 200 are experts in information technology (36 hospitals have an IT department). **Hospital IT system** is present in 42 public hospitals, while about 20 hospitals has almost no central IT system, even though, according to the survey conducted in 2011, only 1.6% of medical documentation is kept manually. Integration of hospital information systems with CEZIH system is for the most part possible through already developed mechanisms, i.e. definitions of data (referral/discharge letter/e-appointments). By implementing the e-referral mechanism in hospitals, the process of writing a discharge letter is informatised, as well as communication with the primary health care physician. Hospitals send invoices to CIHI on daily basis, and they take files from CEZIH portal concerning daily valid insured persons. However, there is no mutual IT connection among hospitals, nor is there a unique set of data monitored and sent, and there

is no reporting system which would include hospital data as well. The project of establishing **e-waiting list** and **e-appointment** is currently in progress, as the first step in integration of the hospital system.

Public health IT system manages more than 33 registers which are, however, neither linked nor standardised. Messages sent to CEZIH – Pompidou form, reporting of malignant neoplasms, reports of infectious diseases and unwanted side effects related to mandatory immunisation – due to poorly developed reporting systems, are used with a delay. The health care system in whole has more than 60 registers. A large number of health reports are still produced by manual data processing.

There are **IT systems for county centres for emergency medicine** in Rijeka, Karlovac and Zagreb. As a part of the emergency medical service reform, partially funded by a World Bank loan, preparation is in progress for construction of a central IT system for all 21 county emergency centres, with a central call centre and advanced system of data exchange with ambulance vehicles.

In Croatia, **telemedicine service**, i.e. medical services provided from a distance through information and communication technologies, are currently provided at the primary, secondary and tertiary level of health care.

Archive and registry material of health care institutions in public sector is subject to legal regulation and protection by the Republic of Croatia as a cultural good of special interest. According to the available data, health care system is responsible for 80,000 – 100,000 of running meters of archive and registry material. A systematic care over the registry material has not existed so far, procedures concerning processing of the registry material were mostly inadequate, and the registry material is kept in unsuitable rooms which do not meet elementary standards by their technical equipment and capacity. In order to address these issues, drafting of the Strategy of integral management of health care archive and registry material in the Republic of Croatia for the period from 2012 to 2020 is in progress. In that document, it is recommended to form a virtual health care archive which would include the entire archive of the health care system and make it available to public, in accordance with the legal provisions defining the availability of the archives.

In general, the main problems of informatisation are insufficient funds and disorganisation in the context of standardisation and exchange of data, operational methodologies, mutual integrations and linking with the central system. Funds invested in information technologies in the health care sector are three to four times smaller than the European and world average.

The ultimate **purpose of informatisation** of health care is:

- To contribute directly to the improvement of the health care service quality, safety and consistency.
- To provide better communication between all participants in the health care through central management of patients' data, in primary, secondary and tertiary care (electronic medical record), centralised managing of processes in the health care system (e.g. e-appointment) and connecting all health care registers.
- To achieve a complete availability of the health care to patients through quick and secure access to their own health record, as well as to information on health services and the quality of health care.
- To enhance efficient administration and better management in the health care system by building an advanced reporting system including all data in the health care system, which would make a reliable support to health care authorities and decision makers and allow more efficient spending of resources.
- To align the health system with the political goals of digitalisation of the public sector and provision of electronic services to population, in coordination with other state administration bodies and in accordance with the strategy of the Republic of Croatia and eCroatia.

SCIENCE, RESEARCH AND INNOVATIONS IN BIOMEDICINE

Research, development and innovations make an integral part of the health care system in the Republic of Croatia. Presently there is no unique policy for science and research in the health care system, despite a clear role of science and research in improving quality of life, preventing and treating diseases. Comparison of data from Croatia with the neighbouring countries and EU average indicates a significantly smaller share of the state budget money invested in science, which, together with a relatively small gross national product, results in a low level of productivity and research efficiency. The situation is even less favourable in the field of health research, since during 2010, 1.6% of the budget money was invested in health-related science and research in Croatia, and the EU27 average was 8.3% of the total investments in science. Until March 2012, the total of HRK 30,485,759.00 or 20.25% of all funds planned in the current cycle of scientific projects run by the Ministry of Science, Education and Sports were invested in the field of biomedicine. A large number of biomedical projects financed by the Ministry of Science, Education and Sports are not sufficiently productive, which makes them less competitive for obtaining international grants and expanding the scope of their results. However, even in these circumstances, there is a small number of research groups that are productive and internationally recognised, and these should be additionally supported.

HEALTH CARE AND TOURISM

Croatia has an abundance of **natural resources** representing great potential for development of health tourism, both at the sea coast and in the continental part of the country. According to the published data, there are 222 localities in Croatia with favourable potential conditions for development of health tourism, with only 10% being used within organised treatment centres. Similar to other Mediterranean countries, Croatia witnessed a wave of wellness centres offering medical and other health treatments, with as much as 80 Croatian hotels declaring themselves as wellness hotels in 2005.

An important step in defining the concept of developing Croatian tourism, including health tourism, will be the bringing of new **tourism development strategy**, planned for the final trimester of 2012. The specific features of health tourism, manifested in its interdisciplinarity, makes it difficult to build a coherent legislative framework. In the field of **legislation**, relevant normative documents are missing, concerning health care services in tourism, which would enable the provision of health care and tourist/catering services under the same roof. It is necessary to invest into the capacities of hotel and health care superstructure in accordance with requirements of global tourist demand, which implies educating the staff and increasing competitiveness on the international markets. Thalasotherapy in Opatija, a special hospital for rehabilitation of heart, lung and rheumatic diseases, founded in 1957, may play a significant role in this regard. Since 1993, this hospital is the property of Primorje-Gorski Kotar County, and has been entered into the court register kept by the Ministry of Health. According to the decision of the Ministry of Health in 1998, this institution received a status of a national **Referent centre for health tourism and medically programmed vacation**, and was given an active role in bringing regulations for regulating the health and tourist offer, as well as bringing criteria for categorisation of tourist destinations and business systems for the Republic of Croatia.

IMPLICATIONS OF THE REPUBLIC OF CROATIA ACCESSING THE EU TO THE CROATIAN HEALTH CARE SYSTEM

Accession of Croatia into the European Union will have an impact on all segments of the economy and society, including the health care system. By accessing the EU, the Republic of Croatia will face:

- new **rules and priorities** in accordance with the current European health care strategy. The strategy stresses the importance of developing such a health care system that will be based on common values and principles, reducing inequality. The concept of health care must be included in all relevant policies, especially the policy of social and regional development, taxation policy, educational policy, policy of environmental protection and the research and development area. The need of strengthening the EU voice at the global level is also stressed, through cooperation with international organisations.
- possibility of support from **European cohesion funds**. The priority areas of investing include: health care infrastructure, e-health, enabling access to health care of the most vulnerable groups, emergency medicine, medical equipment, occupational health and safety, promotion of health and prevention of diseases, education and training of health care workers and information technology, cross-border cooperation, etc. Aiming to direct the member states and help them with strategic planning, European Commission prepared the Common Strategic Framework - CSF for the period 2014-2020, in accordance with the cohesion policy. The national and regional governments will use this framework when drawing up applications for the projects to be financed from the CSF funds.
- **workforce migrations**. Free movement of persons within EU is one of the basic rights guaranteed by the EU legislation. Free movement of workers within EU is provided by Article 45 of the Treaty on the Functioning of the European Union. Potential benefits of Croatia's accession into the EU in terms of human resources refer to possibility of providing health care services to the insured persons from other EU countries, taking into consideration advantages of our tourist destination, i.e. further development of health tourism. Possible negative consequences of Croatia's accession into the EU could be doctors, nurses and other health care workers leaving Croatia for EU. In relation to workforce migration, rules on regulated professions are especially

important. Directive 2005/36/EC refers to regulated professions, and it includes five health care professions: (1) medical doctors, (2) doctors of dental medicine, (3) masters of pharmacy, (4) general care nurses and (5) midwives.

- new **guidelines on patients' safety**. The main recommendations refer to: informing the patients and their inclusion in the patient safety development process; encouraging safety through education and training of health care workers; monitoring the occurrence of various adverse events to increase the ability to identify appropriate ways of their prevention; development of communication and technology tools and systems which would increase the safety of patients and facilitate collecting information; development of comparable and significant indicators to make it easier to identify the problems related to patient safety.
- new rules on **patient mobility**, i.e. cross-border health care. Mobility of patients within EU ultimately aims at providing safe and high-quality health care services for all inhabitants, and increased cooperation and coordination of the member states' health care system. The Croatian citizens will be able to use the advantages of a special health insurance card (European Insurance Card). The coordination of the social security system is determined by Regulation (EC) No. 883/2004 of the European Parliament and Commission for the Coordination of Social Security Systems, and the implementing Regulation 987/2009 laying down the procedures for implementing the Regulation 883/2004. A great challenge for EU member states is Directive 2011/24/EU as of 9 March 2011 on the application of patients' rights in cross-border health care, and all member states must include those provisions into their legislation by 25 October 2013. It is important to note that Regulation 883/2004 only determines treatment and reimbursement of expenses to persons in case of using health care in health care institutions working under a contract with insurance fund, while the Directive expands such rights to treatment provided in the private sector.
- rules on **determining the price of medicines**. Directive of the Council 89/105/EEC determines basic measures for determining prices of medicines paid by the funds of national health insurances, as well as measures for including such medicines on the list of medicines.

When defining direction of its development, Croatia must pay attention to the guidelines and decisions of the EU set forth in basic strategic documents in health care, including the actual health care strategy **Together for health**: A Strategic Approach for the EU 2008-2013; Europe health programme for 2008-2013, the new programme for the period from 2014-2020 entitled **Health for growth** with the budget of EUR 446 million; health policy **Health 2020** recommended by the World Health Organisation and wider strategy of EU development **Europe 2020**.

Up to now, Croatia has timely harmonised national regulations with EU regulations in the area of health care sector, in relation to: cross-border health care; regulated professions and educational system; determining price of medicines and their inclusion in the basic and additional list of medicines of the Croatian Institute for Health Insurance; medical devices; blood, tissues and cells, and environmental protection (noise, chemicals and biocide substances, food and radiation).

Health is considered one of the integral parts of the new strategy of EU development, and an important determinant of competitiveness. The area of health care is directly and indirectly regulated by various regulations and directives in the area of policy of medicines, patient's rights protection, public procurement, patients' safety, prevention and other. The health care policy must enable and foster health of all citizens and provide its sustainability. That is why the member states are encouraged to cooperate, develop and acquire new medical technologies, improve the system of monitoring and responding to threats to health, introduce regulations concerning tobacco, alcohol, mental health, as well as other social and economic issues that may influence human health.

VISION, VALUES AND PRINCIPLES

Vision of the health care system in the Republic of Croatia

Croatian health care system will **improve the quality of life** and **create preconditions for economic growth** through preserving and improving health of each individual and the entire population. Respecting the fact that a large number of factors outside the health care system influences health, the health care system **will strengthen its capacity to cooperate with other sectors** and **improve its own capacity to change** in order to better respond to new health challenges and needs of the population.

The Croatian health care system will, in an **efficient** and **rational** manner, implement the measures of health protection and improvement, as well as treatment and rehabilitation of patients, always governed by **scientifically based findings**. The system will **give patients central and active role**, and it will be driven by **high ethical and moral standards**.

Fundamental values and principles

Health is the fundamental value of the Croatian health care system. In order for every citizen to achieve his/her constitutional right to health care in accordance with law, the health care system in the Republic of Croatia is also based on the following values:

- **equity** in access to funds for maintaining or improving health
- **fairness** in distribution of such funds
- **solidarity** among social groups and generations.

The health care system has a task to provide the constitutional right of every citizen to health care. When organising the health care system, it is necessary to adhere to fundamental principles pursuant to which every person is **entitled to health care** and the possibility of achieving the highest possible level of health, in accordance with the provisions of the Health Care Act and the Mandatory Health Insurance Act. When providing health care, all segments of the system and entities performing health care services must adhere to the principle of **focusing on the patient and identified health care needs** and direct their actions in accordance with priorities that protect the fundamental rights of patients and provide well-being to individuals and the entire community.

Besides the principles determining organisation and operation of the system, general principles also oblige every citizen, as **every person must take care of his/her health, and no person may jeopardise another person's health**. Moreover, each citizen must **give first aid** to an injured or sick person in case of emergency and provide that person with access to medical emergency.

Health care of the Republic of Croatia is based on the principles of universality, continuity and availability. Provision of health care is based on the principle of a universal approach in primary health care, and specialised approach in specialist-consiliary and hospital health care.

Universality of health care implies the inclusion of entire population of the Republic of Croatia in provision of appropriate health care measures in accordance with law.

Continuity of health care is achieved by the overall organisation of health care services, especially at the level of primary health care which provides continual health care to citizens throughout their lives. In providing continuous services, the health care system in the Republic of Croatia must be functionally connected and concerted. At the same time, the principle of **subsidiarity** is respected, i.e. resolving health problem on the lower level of health care where possible.

Availability of health care is achieved by such distribution of health care institutions, companies performing health care activity, and health care workers on the territory of the Republic of Croatia, which will allow the population to have a similar access to health care services, especially on the primary health care level. The health care services must be provided in such a manner so that all citizens may use them, irrespectively of their education, economic conditions, religious beliefs or any other personal and social circumstances.

In organisation and regulation of health care provision, the principle of **integral approach** of primary health care applies. This principle must be provided by implementing consolidated measures for improving health and preventing disease, as well as treatment and rehabilitation in primary health care.

Permanent improvement of quality and effectiveness of work is another specific principle of health care provision.

For specific needs and complex health problems, the principle of **specialised approach** applies, which is provided by organization and development of specific clinical and public health accomplishments and knowledge, and their application in practice.

The basic principles in the **protection of patients' rights** are humanity and availability. The principle of humanity in the protection of patients' rights is achieved by ensuring that the patient is respected as a human being, by ensuring the right to physical and mental integrity of the patient, and by protecting the personality of the patient, including respecting his/her privacy, world view and religious beliefs.

SWOT ANALYSIS

Most elements in the analysis of strengths, weaknesses, opportunities, and threats (SWOT) are based on quantitative data or descriptions presented in previous chapters of the Strategy. Several elements were identified on the basis of qualitative analysis and contributions of members of the committees, participants in partner conference and public discussions conducted in the process of drafting the Strategy.

The object of SWAT analysis is the health care system of the Republic of Croatia.

- **Strengths** – current situation and trends that are positive or have a positive influence, and refer to health care system or population health indicators.
- **Weaknesses** – current situation and trends that are negative or that have a negative influence, and refer to health care system or population health indicators.
- **Opportunities** – current situation and trends referring to broader social, political or economic environment, which are positive or have a positive influence to population health or health care system.
- **Threats** – current situation and trends referring to broader social, political or economic environment, which are negative or have a negative influence to population health or health care system.

STRENGTHS

- Life expectancy is increasing and mortality rates are decreasing.
- Epidemiological situation concerning infectious diseases is favourable, with a very high vaccination coverage.
- The public health network is developed.
- There are national preventive programmes.
- There is an infrastructure for monitoring and supervision of the quality of the environment and harmful environmental influences to human health.
- Croatia is one of the leading countries in the world based on the rate of realised organ donors and the number of transplants of kidneys and liver per million inhabitants.
- Coverage of the inhabitants by health care is good.
- Territorial coverage by hospitals is good.
- Each inhabited island has at least one intervention heliport.
- Croatia has a trend of improvement of patients' rights, based on the Euro Health Consumer Index.

- A volume of medicines consumption, as well as consumption of orthopaedic and other aids is increasing on all levels of health care, which indicates an increase in availability.
- There is a network of occupational medicine offices, and the number of preventive examinations of the working population is increasing.
- The number of hospital beds and trend of the decrease thereof in Croatia is in accordance with the EU average.
- Compared to European average, there is a sufficient number of MRs, CTs and mammography devices per inhabitant.
- There is a trend of increasing the number of family medicine specialists.
- There is a trend of increasing the number of physicians in emergency medicine.
- The number of dentists is satisfactory and exceeds the European average.
- There is a well-developed network of faculties of medicine and health schools.
- Agency for Quality and Accreditation in Health Care and Social Welfare has been established.
- The health care system is informatised to a certain degree, with a central primary health care IT system with advanced functions (e-prescription, e-referral for laboratories).

WEAKNESSES

- The life expectancy is below, and the mortality rate is above the EU15 average.
- The mortality rate from chronic liver disease, lung cancer, colorectal cancer, cervical cancer, diabetes, chronic obstructive pulmonary disease and injuries is above the European average.
- The rate of hospitalisation for depression is increasing; the rate of suicides is above the EU15 average.
- There is no systematic monitoring and analysis of environmental factors and their influence on health, there is no “map” of pollution sources.
- There are significant regional differences in health indicators.
- There is insufficient number and unfavourable age structure of the health care workers, especially physicians and nurses.
- Higher levels of qualifications of health care workers are insufficiently recognised and awarded.
- Monitoring and improvement of the health care quality is insufficiently developed; number of published and updated Croatian clinical guidelines is relatively small, no hospitals have been accredited so far.
- There is a trend of decreasing number of preventive examinations and home visits in primary health care.
- Community mental health care and rehabilitation are insufficiently developed.
- The infrastructure for providing palliative care does not suit the needs.
- The number of beds in clinical institutions (tertiary level) is inappropriately large compared to general hospitals (secondary level).
- Daily hospitals are insufficiently developed: number of beds in inpatient wards is 18x greater than in daily hospitals; number of stays in inpatient wards is 3x greater than in daily hospitals.
- Emergency medical flights and rapid marine transports are performed by military helicopters or unsuitable, privately-owned ships, or vessels of the Ministry of the Interior.
- Energy consumption of health care facilities is inappropriately large.
- Out of the total number of insured persons, only 35% contribute to the mandatory health insurance fund, with a trend of decrease in that number.

- The total liabilities of the Croatian Institute for Health Insurance exceed HRK 4.5 billion.
- The share of expenditures for prevention in the Republic of Croatia is several times less than the European average.
- The private health insurance market is underdeveloped; although the share of private expenditures for health care is less than the European average, the share of inhabitant's out-of-pocket payments for health care in Croatia is greater than in the EU, the Czech Republic and Slovenia.
- IT connections within the health care system is incomplete; there is no adequate communication between hospitals and primary health care, nor among the hospitals.
- The quality and structure of data, and methodology of collecting data in the health care system, are not standardised.

OPPORTUNITIES

- Possibility of improving the infrastructure and development of human resources by using the EU structural and cohesion funds.
- Development of health and medical tourism market.
- Strengthening competition in the health care market and possible direct investments in the health care sector.
- Convenience of a special health insurance card (European Insurance Card).
- Transfer of knowledge and best practice through intensive communication and cooperation with European experts.

THREATS

- A large number of foreign tourists in Croatia, which increases the pressure on the medical emergency service, especially during the tourist season.
- Outflow of health care workers after Croatia's accession into the EU.
- Population ageing, with a consequent increase of the needs for health care.
- Lack of understanding and rejecting the need for reform measures in the Croatian society.
- Insufficient acceptance of personal responsibility for own health.
- A decrease of interest in health care profession among the young.
- Undermined trust in public sector institutions as a result of perceived corruption.
- An increase of unemployment and reduction of working population.
- An increase of the number of disability support pension users.
- A deficit of state budget and high indebtedness.
- Regionally uneven economic strength and ability to finance health care..
- Increasing energy prices.
- Global economic crisis.
- Potential infectious diseases pandemics, disasters and other crisis situations.

STRATEGIC PROBLEMS IN CROATIAN HEALTH CARE

Based on the presented quantitative and qualitative data, consultations with the committees and participants of the partner conference, SWOT analysis and public discussion, five areas of strategic problems in Croatian health care were identified:

1. **Poor connectivity and insufficient continuity of health care**
2. **Uneven or unknown quality of health care**
3. **Inadequate efficiency and effectiveness in the health care system**
4. **Poor or uneven availability of health care**
5. **Relatively poor health indicators**

1. Poor connectivity and insufficient continuity in health care

Although **informatisation** of health care in the past 10 years has developed significantly, the main problem is that the IT system was for the most part built as a group of isolated islands. Most hospitals send information and invoices to the central health care information system on daily basis. However, there is no mutual connection among hospitals, there is no unique group of data that are monitored and sent, and there is no reporting system which would include hospital data as well. There is also no IT connection necessary for a unified procurement, joint use of medical equipment or human resources exchange. There is no IT connection between primary health care and hospitals. The public health system manages more than 60 registers which are neither linked nor standardized by their data model. The pharmacists have no insight into necessary items of the patient's medical file (e.g. about allergies, results of biochemical and haematological examinations, etc.)

By introducing **concession** into primary health care, the continuity and universality of the health care which was previously an important characteristic of Community health centres has been weakened. There are almost no group practices and interdisciplinary teams in primary health care. At many places, there are difficulties in organising continuous primary health care and in finding replacement for health care workers during annual leave or sick leave. Usually, there is no appropriate communication among the family medicine doctors and patronage nurses, pharmacists and other workers in the health care system.

The continuity of health care is also unclear **on three levels** - patients often “skip” primary level and seek health care services directly at hospitals. Besides, a significant share of activity in tertiary hospitals might be taken over by secondary level hospitals.

In some health professions there is no clear continuity in the **levels of education**, which reduces vertical mobility of health care workers. Education of physicians is from the very beginning directed towards working in secondary and tertiary institutions (this is, at least in part, due to the fact that their education takes place at tertiary institutions). Consequently, after completing medical studies, physicians are insufficiently prepared for working in primary health care.

The entire healthcare system is insufficiently connected with **other segments in the society** (civil society, other public services and state administration).

2. Uneven or unknown quality of health care

Although there is a proclaimed goal of introducing and implementing external evaluation of the quality of health care institutions, no institution has been **accredited**, and only a small number of medical laboratories has been accredited. The existing staff and capacities for implementing the health care quality, measurement and analysis are in most cases insufficiently developed. Labour law and collective agreements do not provide sufficient possibilities for **rewarding** high quality and **sanctioning** poor quality of work. Moreover, there is no clear link between financing of health care institutions and the quality of care they provide.

In most hospitals, the quality control structure has been established (quality assistant director, quality unit, quality committee). However, its implementation is 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 of them are even obsolete.

Accreditation standards in the Republic of Croatia are still not validated, and only a small number of people with suitable level of education necessary for performing complex activities and tasks of the Agency for Quality and Accreditation in Health Care and Social Welfare are employed there. There are no **quality indicators** which would 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.

Insufficiently regulated cumulative teaching and clinical work, as well as insufficient number of teachers, especially considering an increase in number of students and study programmes, has a negative impact on **training quality of health care workers**.

3. Inadequate efficiency and effectiveness in the health care system

In Croatian health care, there is room for improvement of **efficiency** (level of achieved results considering the set goal) and **effectiveness** (level of achieved results considering the invested resources), and such an improvement becomes a necessity in the light of unfavourable economic situation and fiscal deficit of the Republic of Croatia.

High and increasing expenditures for health care reflect inefficiency, both on the side of supply and demand. Inefficiency **on the side of supply** is a result of the payment system, based on capacity and payments based on inputs, which encourage hospitals to keep beds full and prolong the stay of patients. A significant share of the care that should be provided on the primary level is forwarded to the secondary level since the primary level physicians are paid through annual compensations for the number of patients and there is little competition among primary health care service providers. Inefficiency **on the side of demand** is a result of: a) significant share of population over 65 years of age, with greater needs for health care than the young population, and b) the current system of payments for health care, with relatively low levels of additional payment which, together with a wide range of exemptions from contributions, encourage demand for health care services.

In general, there is a problem of insufficient **transparency of financing** health care. Moreover, **managing health care institutions** is often inappropriate and insufficiently professional, which is partly a result of divided commitment to clinical work and management, and partly of non-existent interdisciplinary expertise, as well as human and IT capacities for planning and analysis. Expenditures for medicines are disproportionately high and often unjustified, among other things because there is no functional process **of health technology assessments** or sufficient number of high-quality **clinical guidelines**. Payment deadlines are too long.

Hospital system is insufficiently adapted to the needs of the population, considering the changes in demographic and epidemiological trends, as well as to the current medical technologies.

The physical infrastructure of hospitals is huge, poorly maintained and with low energy efficiency. Sophisticated diagnostic and therapeutic equipment in hospitals is mostly used only in one shift. Expensive hospital capacities for acute treatment are often used for chronic and long-term treatment. The role of **pharmacy profession** in preserving health and quality of life, prevention of disease or implementation of therapy, as well as in rationalisation of consumption of medicines, is neither sufficiently recognised nor used. **Medical emergency service** is often used for mere transport of patients. Efforts in **prevention of diseases** are insufficient, although an effective prevention might contribute to reducing expenses and increasing efficiency of health care.

Monitoring the work of health professionals (including their respect for working hours) is the basis for an efficient health care system. However, the current **monitoring system** is not sufficient to identify and prevent inefficiency and ineffectiveness in the health care system, which is partly due to inadequate system of data collection.

Although there is an objective lack of physicians and nurses in the health care system, engagement of existing human resources and mobilisation of new ones could be improved. Currently, there is no task shifting from physicians to nurses with higher level of education. **Mobility of workers** is very poor in the health care system, and **volunteering** is almost completely unregulated and undeveloped.

4. Poor or uneven accessibility

Lack of health care workers is a structural problem restricting availability of health care, especially in rural areas and on islands, but also in small towns. In certain professions there is an **uneven distribution** among the health care levels, e.g. there is a sufficient number of medical biochemists on secondary and tertiary level, but not on the primary level. In long-term perspective, the high average age of health care workers additionally jeopardises availability of health care at all levels and geographical areas.

Health care professions are **less and less attractive** for the young choosing their future profession. Within the health care system, there are professions and work places that are less attractive, e.g. due to lower levels of salary (e.g. public health institutes), due to unfavourable effect on lifestyle ("big" specialisations, such as paediatrics, surgery, internal medicine and gynaecology), or due to inadequate legal and working position (e.g. nurses compared to physicians in family practice or a physical therapist compared to rehabilitation physicians in concession). In some professions, training and specialisation must be paid from personal funds, which additionally decreases the attractiveness of such professions.

Network of pharmacies is incomplete, since it does not pay off to work in geographical areas that cannot achieve profit on the market.

Formally, all services are available to all insured persons, however, in reality, there are still great differences in availability of health care services, which is partly related to insufficiently transparent waiting list. **The plan and programme of health care measures** from the mandatory health insurance is not up to date, it is too wide and difficult to accomplish in practice.

5. Relatively poor health indicators

Although a trend of reducing the total mortality rate and the mortality rate from major diseases, such rates are still high compared to European average. The situation concerning **health behaviour** of the population and **risk factors** such as smoking, obesity and overconsumption of alcohol, is alarming. Another indicator of poor health is an increased number of workers obtaining disability support pension. Injuries and injury-related death rates also exceed European averages. An increasingly difficult **social and economic situation** jeopardises the health of the population. There is no culture of taking **personal responsibility** for one's own health or for responsible usage of health care.

STRATEGIC DEVELOPMENT DIRECTIONS, PRIORITIES AND MEASURES

When defining strategic goals and priorities in the period 2012-2020, at least two time perspectives must be taken into consideration: short-term and long-term perspective. **Short-term perspective** finds its starting point in analysis of the current situation, as well as in the existing documents with a short time horizon, such as Strategic Development Framework 2006-2013, Government Programme Strategy for the period 2012-2014, Programme of the Government of the Republic of Croatia for the period 2011-2015 and Pre-accession Economic Programme 2012-2014.

Long-term perspective starts from the analysis of the current situation, but it takes into consideration the projections of trends in the future, as well as European strategic documents with a longer time horizon, primarily Europe 2020 and Health 2020.

Strategic development directions and priorities should ensure that the health care system develops gradually and continuously, always with respect to suggestions and inputs given by different entities that provide and implement health care. It is imperative to **avoid radical reforms** for which adverse effects are difficult to predict, and which can cause even greater problems than the ones that were supposed to be resolved by such reforms. On the other hand, **incremental development** ("step by step") allows permanent monitoring of the effects of the implemented measures and their further adjustment and modification in accordance with the achieved results and new circumstances. The strategy itself must be understood dynamically, not as a document "chiselled in stone" for the next eight years. The Ministry of Health will, therefore, appoint a special group to monitor and evaluate the implementation and effects of the Strategy each year, and recommend its amendments and improvement.

Strategic development directions arise immediately from strategic problems presented in the previous chapter. In order to achieve the desired development directions, priority areas have been identified, as well as suitable measures, each with the goal of achieving one or more development directions, which is displayed graphically by "+" sign in tables 1-8. It is important to note that priority numbers (1-8) neither imply their relative importance or value, nor that they immediately add to one another concerning time or process. Furthermore, although the measures have been divided in eight priority areas for categorisation and better clarity, it is evident that many of the measures from various priorities are mutually connected and they affect each other.

In accordance with conceptual determination of the Strategy, described in the introductory chapter, the development directions, priorities and measures listed here do not provide detailed specification of individual activities, responsible actors and deadlines for implementation. Such specification will be given by **operational documents** for individual health care segments (e.g. Strategic plan of human resources development in health care, Hospital master plan, Strategic plan of informatisation in health care, Strategic plan of health tourism development), and this Strategy provides the basis for production, evaluation, and revision of such operational documents.

STRATEGIC DEVELOPMENT DIRECTIONS:

1. Improving connectivity and continuity in health care
2. Standardizing and improving quality of health care
3. Improving efficiency and effectiveness of health care system
4. Increasing accessibility of health care
5. Improving health indicators

Priority 1: Informatisation and eHealth development

Integration and standardisation of health information and equalisation of the level of informatisation in the health care system

Healthcare information system must **integrate all data** circulating in the health care system, and provide accessibility of data to authorised entities, with a high level of safety and protection. For complete and functional integration, it is important to **define a minimum of functionalities** of internal operation for each type of health care institution: medical (diagnoses, medical findings, radiographic images, descriptions of operations with disposable and implantable medical devices, etc.) and business (accounting, admission of patients, accommodation of patients, kitchen, etc.), in accordance with the available funds, with regular annual audit.

It is also necessary to **standardise** data models, common code lists, manners of data transfer and mutual communication in the systems. It is necessary to establish an integration of information systems in hospitals and specialist-consiliary health care, and **information exchange** both among individual entities, and with the central information system. Integration also implies **connecting all registers** in health care and compilation of data. It is necessary to achieve **interoperability** of information systems in health care with all state administration bodies (joint services), as well as with the EU countries. It is necessary to make official web pages and portals of key health care institutions uniform, in order to standardise architecture of information towards population. That will be achieved in cooperation with the **eCroatia** project, as a part of consolidation of all portals of state administration bodies.

Integration will also be achieved through **joint procurement** and harmonisation of standards for computer equipment, licenses, communication infrastructure, maintenance and technical support.

Establishment of Electronic Health Record

Each health care user must have his/her own **unique Electronic Health Record** (EHR) which is filled by various segments of health care (general/family medicine practice, specialist clinical practice, hospital, laboratory, diagnostic unit, private health care institution and other places). Physically, it does not necessarily have to be in one place, but there must be a possibility of connecting parts of that record whenever necessary and when an authorised person requires it (e.g. physician, when providing health care services to the patient), always with the patient's consent. Each health care user must have a possibility of complete and easy insight into the information on to whom, when, and which of the patient's data were given to use, and based on which right or authority. By establishing the EHR, all preconditions will be met for automatized communication of all types of health care (primary, secondary, tertiary) and communication between the health care system and the patient, which will reduce the number of unnecessary tests and increase the quality of treatment.

Using health care and statistical information to support decision making and establishing the reporting and warning system

Data on health condition of health care users and data on services provided in health care institutions form a basis for producing periodical **statistical reports** used by the Croatian Institute for Health Insurance and the network of county institutes of public health, as well as other agencies and institutions. The purpose of the health statistics is to assess the health status of the population and functioning of the health care systems, as well as to create the basis for health care interventions in the population and organising/reorganising the health care system itself. By direct retrieval of the patient's data from the Electronic Health Record (data concerning treatment, prevention, health care procedures, etc.), health and statistical reports will be up to date and without delay, and will serve as high-quality support for decision making (business intelligence). Using data in all parts of the health care system increases the quality of work. A part of the health care and statistical information must be available to the users outside the health care system as well.

It is important to establish the system of **warning in case of deviations** from standard values defined by the profession, which require initiation of escalation procedure and intervention of the managing body.

Functional improvement, modernisation and maintenance of the existing information systems in health care

The existing information systems in health care must be **functionally improved** through the development of e-waiting list, e-appointment, e-certificate of entitlement to orthopaedic aids, e-lists of medicines, e-guidelines for prescriptions, e-clinical guidelines, e-prevention, e-managing of chronic diseases, e-patronage nursing, e-transplantation, e-archive of health documentation, national public health information and communication system, information system for sanitary inspectors, information system as a support to the quality management in health care, information system for county medical emergency centres, systems for managing documents and digital records of diagnostic devices, systems for managing physicians and nurses' documentation, system for support to joint procurement and other joint processes of hospitals and entire health care, connecting occupational medicine practices, connecting with private health service providers, and mHealth – using mobile devices in medical and public health practice. Telemedicine must be integrated in medical emergency service and

other health care professions. In order to standardise and improve the quality of providing services in health care, physician forums and knowledge bases for information exchange will be developed.

For the purposes of developing the **pharmacovigilance system**, apart from current spontaneous reporting of medicines' adverse effects through forms available at the web site of Agency for Medicinal Products and Medical Devices of Croatia (HALMED), it is necessary to develop electronic reporting through HALMED web site, both for health care workers and for patients. However, there is also a possibility of direct reporting of adverse effects from the information system of family physicians towards HALMED – the institution which keeps the national database of medicines' and vaccines' adverse effects. In the second phase, it is necessary to develop a pharmacoepidemiological programme of adverse effects monitoring based on data available in Central Health Care Information System in Croatia (CEZIH), so that the data on patient's taking of medicines, together with their diagnoses, would be sent to a special pharmacoepidemiological database for analysis of possible association between the occurrence of certain diseases and taking medicines.

The existing applications in healthcare must be **modernised**, which implies changes in technologies, optimisation of the programme code and improvement of transmission and safety of messages. Moreover, hardware, programmes and network platforms must be continually replaced by new ones.

Standardisation and certification

Standardisation is a precondition for proper functioning of the system. Standards, among other things, imply medical guidelines, as well as the recommendations of international bodies and organisations. Concerning standardisation of health care information systems, European standards (CEN, CENELEC etc.), international standards (ISO, HL7 etc.) and Croatian standards (Croatian Standards Institute) must be adhered to.

Information systems in health care must pass the **certification** procedure before use, which implies functionality, data and system safety, and interoperability check. For that purpose, it is necessary to define major criteria the product must meet, to establish a body which will implement the certification procedure, to define the period the certificate will be valid in, and the conditions for potential re-certification of the product. When it comes to health care information system, EHR, etc., the certifying body must include **different professions**: (1) users, or health care professionals, (2) medical information technology specialists, i.e. experts in information and communication technology, (3) legal experts, (4) other interested professions and individuals.

All software solutions must be **compatible**. That means that by developing a software solution, direct interoperability with other software solutions must be ensured. By defining a standard data form, any software solution should be able to use it. Defining the necessary criteria for software solutions, applying international standards, and insisting on certifications that software solutions need to get before their implementation in practice will increase the responsibility of producers and the freedom of users (health professionals) in choosing or replacing software solutions. Prescribed standardised structure of data that are meant to be used by more than one institution in health care system must be made available to all interested public in order to increase transparency and efficiency of the entire system.

Development of the Electronic Health Record must be in compliance with the European initiative in the area of eHealth. European Institute for Health Records (EuroRec) has initiated a project of harmonising the quality of electronic health records in the European Union. Founding a **ProRec centre** in the Republic of Croatia would enable a direct connection with European activities in the

eHealth area and inclusion into European and Euro-Atlantic projects of the European Commission coordinated by EuroRec. By being included into the epSOS project, Croatia will have a possibility of information exchange concerning patients and prescriptions.

Change management and training

Introducing information and communication technology (ICT) in daily work of individuals or organisations means changing the manner of operation. Therefore, **change management** (reorganisation of work, training) must be a part of every informatisation project.

Education in every health care profession must contain topics on eHealth. For an efficient use of contemporary ICT in medical and health professions, it is necessary to understand the principles and possibilities of ICT, and master the skills to use it. That means that health care professionals have to master certain knowledge and skills related to medical health care information technology, while IT specialists have to acquire certain knowledge and skills related to medicine and health care. Taking into consideration a large number of users in the health care system, it is necessary to build an **e-learning system**, which will facilitate the training and will allow the managing body to draw up the learning contents that, apart from professional and user instructions, may contain recommendations concerning behaviour, relationship with patients, managing crisis situations, safety rules, etc.

It is necessary to educate health care workers in basic computer operation skills, so they would be able to use all applications in the field of their work, as well as about the patients' rights and the manner of operation of the health care system.

In order to provide quick and high-quality support to all ICT users in health care, it is necessary to establish a **call centre** and **customer relationship management**.

From the organisational point of view, taking into consideration large projects and complex systems in healthcare that must be developed and connected, it is crucial to **identify and unite** all knowledge and experts in the field of medical information technology, both within and outside the health system.

Funding and legal regulation

Apart from significant **increase of funds** for informatisation in the total health care budget, it is necessary to increase the capacity for **writing project proposals** and **project management** of the projects financed from EU funds. Moreover, **international activities and cooperation** must be strengthened, with the goal of initiating bilateral projects and joining large European projects. A great opportunity, but also the challenge in financing the health care informatisation is provided by a World Bank loan granted to the Ministry of Health.

The entire area of e-Health must be fully supported by the appropriate **legal framework**, which means that the existing laws and ordinances must be brought in compliance or amended.

It is necessary to define **rights and obligations** of all participants in the informatisation of health care system. For an integrated information system, it is extremely important to define the authority of patients and health care workers in the public and the private sector, with an emphasis on rights and obligations of the suppliers of the information and communication software and equipment with regard to regulations on protection of personal data and information safety. It is necessary to centrally regulate the form and content of **medical documentation**, including Electronic Health Record, and the policy and rules of **information safety**.

Table 1. Measures planned within the Priority 1: Informatisation and eHealth

Measures	Strategic directions				
	1	2	3	4	5
1.1 Equalisation of the level of informatisation in health care, integrating health care information and establishing communication among all levels of health care (primary, secondary, tertiary), between the health care system and patients, and between the state administration and European health care systems	+	+	+		
1.2 Establishing information systems for monitoring health care statistics and the analysis of data, and producing reports serving as support for decision making (business intelligence)	+	+	+		
1.3 Functional improvement and modernisation of the existing information systems and applications in health care, as well as development of new ones.	+	+	+	+	+
1.4 Construction of the IT system for supporting the joint procurement and other common processes of hospital and the entire health care system	+		+		
1.5 Integration of telemedicine in emergency medical service and other health care activities	+	+	+	+	
1.6 Standardisation and certification of information systems in health care, with continual check of functionality, data- and systems-safety, and interoperability	+		+		
1.7 Joint procurement and harmonisation of standards for computer equipment, licenses, communication infrastructure, maintenance and technical support	+		+		
1.8 Training of health care workers and management of change when implementing information-communication technologies	+		+		
1.9 Increase of funds for informatisation in the total health care budget, in synergy with the EU funds	+				
1.10 Legal regulation of eHealth	+				

Priority 2: Strengthening and better use of human resources in health care

Strategic plan of human resources development

Healthcare workers are the biggest and the most important resource in Croatian health care system and most measures within the framework of all priorities set forth in the National Health Care Strategy 2012-2020 should, directly or indirectly, influence the improvement of work as well as the position

of health care workers. Without a sufficient number of satisfied, protected and properly engaged health care workers it is not possible to achieve appropriate health care of the Croatian population.

Taking into consideration the alarming lack of health care workers in the Republic of Croatia, it is necessary to produce a Strategic plan of human resources development in health care, which would: a) assess in detail the **status of available staff**, the existing systematisation of workplaces and the need for human resources at all levels of health care and in all geographical areas of the Republic of Croatia, b) recommend mechanisms and tools for **better monitoring and assessment** of human resources, c) recommend mechanisms and tools for appropriate **recruitment, retention, continuing education, and professional development** of health care workers, d) recommend the ways and concrete directions of **appropriate allocation** of the existing human resources with the goal of increasing the efficiency and availability of health care and e) recommend the economically sustainable system of **rewarding and encouraging** the work of health care workers.

Taking into consideration the complexity and social sensitivity of that task, the Strategic plan of human resources development in health care shall be made in cooperation with domestic and international experts for human resources in health care. In drafting the Plan, it will be necessary to include all professional chambers and other key participants in health care, and the data will be collected and analysed down to the level of individual institutions.

Protection of health care workers

Professional liability insurance is becoming a necessary precondition for high-quality work in medical profession, and it is necessary to improve models of physician's insurance. When concluding an insurance policy, it is necessary to consider and clarify the risks in detail, as well as general and special insurance terms and conditions referring to professional liability in health care.

At the national level, it is necessary to establish **data collection on law suits** and collection of data on other procedures initiated against the health care providers, primarily physicians, due to possible mistakes in performing their services. This is important in order to obtain a more complete insight into the current situation and improve the professional liability insurance. A systematic **collection of data on all forms of attacks** on health care workers would contribute to protection, and the chambers should play an important role in that. It is also necessary to improve the existing regulations determining the relationship between the providers and users of the health care service and procedures.

Considering the crucial role of court expert witnesses of medical profession in speed and quality of resolving damage claims in court and out-of-court procedures, **continuing training of expert witnesses** should become mandatory. The role of the expert witness is important for preserving the dignity of the medical profession and responsible professional behaviour of physicians. It is crucial that the evaluation of the expert witness be founded on evidence-based medicine and that expert witnessing in concrete cases is performed exclusively by physicians from relevant professions with extensive experience in performing the procedures which are the object of expert witnessing.

Finally, protection of health care workers also implies **protection of their health and occupational safety**, for which a national programme must be drawn up and implemented, in accordance with the Workers' health: global plan of action, confirmed by the World Health Committee.

Vertical and horizontal mobility

All health care workers should have a possibility of obtaining **higher educational levels**, which will have a positive influence not only on their competences but also on the attractiveness of health care professions in general. In order for the higher levels of education to be properly recognised, possibilities must be created for **advancement in the profession** and task shifting in accordance with the achieved higher level of education, which may also be connected with organisational changes (e.g. organisation of units/wards in maternity facilities which are run and monitored by midwives with an appropriate level of education, and the so called walk-in centres, primary health care units for minor health problems or injuries, which are run by qualified nurses, and which are available to all citizens without any notification or appointment). It is necessary to strengthen vertical mobility by encouraging **research** in professions such as nursing, where scientific activity is insufficiently developed, which has a negative impact not only on development of the profession, but also on the overall health care quality and safety.

In the conditions of a relative lack of health care workers, and considering constant changes in health care needs of the population, it is necessary to increase the horizontal health care mobility, namely, to enable their easier **transfer from one workplace to another** within an institution or within a network of institutions.

Territorial mobility, especially of the workers in primary health care, directed towards places and workplaces for which the interest is lower (rural and isolated areas, islands), must be encouraged by active stimulation and awarding.

Planned approval of specialisations

Specialisations must be approved based on **clearly documented needs** in the public health service network in order to avoid over-concentration of specialists in certain areas, and lack thereof in other. Taking into consideration the expected increase of the share of elderly population and specific health needs of that population, it will be necessary to introduce specialisation in geriatrics, for which the textbooks and curriculum have already been prepared, with the educational programme lasting four years, and which is in compliance with the specialisation programme of the European Union of Medical Specialists (UEMS).

It is expected that, based on detailed estimates provided in the aforementioned Strategic plan of human resources development in health care, it will be necessary to introduce new specialisations or sub-specialisations (e.g. prevention and treatment of chronic pain), or encourage extremely scarce specialisations such as child and adolescent psychiatry. With the goal of improving the quality of work, it is necessary to introduce **obligation of specialist education** for all team leaders in primary health care.

Work after mandatory retirement age

Taking into consideration the lack of health care workers, but also the increase of their life expectancy, it is reasonable and pragmatic to enable the health care workers to continue working even after the legal retirement age, for those who want it and where there is a need for that. This measure is in accordance with the conclusions of the Croatian Economists Congress in Opatija that took place from 15 to 17 November 2006, when a recommendation to prolong the working life of functionally capable workers even after the age of 65 was accepted as one of the guidelines for economic policies of Croatia.

Table 2. Measures planned within the Priority 2: Strengthening and better use of human resources in health care

Measures	Strategic directions				
	1	2	3	4	5
2.1 Drawing up the Strategic plan of human resources development in health care		+	+	+	
2.2 Strengthening the personal liability protection for health care workers				+	
2.3 Drawing up and implementation of the national programme for health care and safety of the healthcare workers			+	+	+
2.4 Enabling achievement of higher levels of education for all health care workers	+			+	
2.5 Defining competences and enabling task shifting in accordance with the higher level of the achieved education of health care workers	+	+	+	+	
2.6 Increasing horizontal and vertical mobility of the health care workers within Croatian health care system	+		+	+	
2.7 Approving specialisations based on clearly documented needs in the public health service network				+	
2.8 Enabling health care workers to continue working even after the retirement age, for those who want it and where there is a need for that				+	

Priority 3: Strengthening of management capacities in health care

Education and differentiation of management

Management capacity is an important precondition for efficient and effective functioning of the health care system, and it is therefore necessary to continue with the systematic **education of the management staff** in health care. This applies to all levels of management, not just the highest ones. Managers on all levels must be aware that by managing and decision-making they produce financial effects and are therefore liable to financial management and control stipulated by the Public Internal Financial Control Act. Pursuant to the Finance (Budget) Act, the head of the budget user is responsible for legal, purposeful, efficient and economic use of the budgetary funds. For executing the managing duties and responsibilities, it is necessary to have specific knowledge and skills, but also to be able to dedicate full time to management. Since it is not appropriate or realistic for a physician to take over the management responsibilities and stop the clinical work completely, it is necessary to **separate organisation and finances management from medical management**. Organisational and financial managers must spend full time at the management positions, and they do not have to have primary medical training, but a specific expertise (economy, law, management) qualifying them for the job. Financial management will have use of the **centralisation** instruments, such as joint public procurement. Medical

management does not have to imply a full time job, but it must be entrusted to health care workers with an extensive clinical expertise and be directed towards health care quality management, safety of patients, implementation and supervision of clinical guidelines and other activities closely related to the medical profession. Medical management should follow the principle of **decentralisation**, i.e. the implementation and supervision as close as possible to individual patients.

Data analysis, planning and researching the health care system

Both organisational and financial, as well as medical management could be improved by **establishing departments** in health care institutions which would deal with data analysis, planning and management of projects (including EU-funded projects).

An important contribution to strengthening the management capacities, especially at the level of policy-making, may be given by scientific institutions and research groups through targeted and methodologically robust **studies of Croatian health care system**. Such studies will help evaluate the impact of individual health care policies in primary, secondary and tertiary health care and public health on improvement of health indicators in the population; contribution of clinical guidelines, accreditation and health care technologies to health care outcomes; success of existing or proposed models of health care financing and health care insurance; and suitability of the current educational model for the future needs in health care.

Strengthening the management authority of community health centres

Pursuant to the Health Care Act, community health centres must ensure the realization of principles of comprehensive, integral approach in primary health care, and the principles of accessibility and continuity of health care provision in their geographic areas. In order to be able to meet those responsibilities, community health centres must have a **stronger managing authority**, e.g. when planning working hours of general practice physicians in concession. That must be achieved through a legal framework that more clearly defines and regulates concessions in health care.

Table 3. Measures planned within the Priority 3: Strengthening of management capacities in health care

Measures	Strategic directions				
	1	2	3	4	5
3.1 Training of management staff		+	+		
3.2 Separation of organisational-financial management and medical management		+	+		
3.3 Establishing departments for analysing, planning and projects management		+	+		
3.4 Encouraging health care system research		+	+		
3.5 Strengthening of management authority in community health centres through legal framework that more clearly defines and regulates concessions in health care	+		+	+	

Priority 4: Reorganisation of the structure and activities of health care institutions

Integration and cooperation in primary health care and public health

Important and purposeful form of integration in primary health care is **establishment of group practices** through which greater efficiency, continuity and quality of work can be achieved by joint use of space, diagnostic and therapy equipment, non-medical services (e.g. accounting, cleaning), organisation of standby duties and replacements, planning and implementing additional preventive and curative programmes (vaccination, home treatment, etc.) and possibilities of professional consultations and differentiation of clinical expertise among the partners in group practice. The costs of monitoring, implemented by the insurance company, are smaller for group practice than for individual offices.

Home treatment is an integral component of group practice, with patronage nurses as the key partners. Group practice must be a voluntary decision of health care workers, based on common professional and financial interests of all the partners. Teams within a group practice must define the rules and obligations related to professional and financial position of each partner, especially concerning the distribution of financial assets.

General practitioners in isolated geographical areas must be enabled to **use telemedicine** and create “virtual group practices” with a support of information-communication technologies. Provided they received appropriate professional training, these general practitioners must be allowed to perform additional diagnostic and therapy procedures (e.g. physical therapy, diagnostic ultrasound, certain dermatological and surgical procedures, a part of laboratory diagnostics, PAPA smear). Furthermore, they should be able to arrange control examinations by psychiatrists, neurologists, eye specialists, cardiologists and other specialists for their patients in their general practices.

For connecting primary health care in isolated geographical areas with secondary and tertiary health care, as well as for provision of emergency medical care in such areas (islands, mountain areas, motorways) it is necessary to obtain **appropriately equipped vehicles** (helicopters, boats) for emergency medical air and maritime transport of patients.

In general, contemporary health care needs and medical technologies require strengthening of **interdisciplinary cooperation** in health care and **community work approach**. Nursing care and rehabilitation, protection of mental health and palliative care are some of the areas where multidisciplinary approach in the community is more desirable than institutional care and should be encouraged. Cooperation of physicians and pharmacists, and joint work of health care and non-health care professions in monitoring and assessment of environmental factors and their impact on health, are further examples of desirable multidisciplinary approach in health care and protection.

In order to provide continuity and universality of health care on the primary level, it is necessary to **improve the legal framework regarding concessions** for performing public health care.

Efficiency of the county public health institutes network may be increased by establishing **associations of institutes** with a functional or institutional integration and with concentration of certain services or activities in one or only a few units within the association, wherever appropriate. Services of health ecology, microbiology, school medicine, as well as mental health care and out-of-hospital treatment of addictions should remain within the scope of work of the county public health insti-

tutes. In performing these services, institutes should strengthen their cooperation and connections with other participants in the health care system and the society in whole. At the level of the public health institutes it is necessary to establish **joint public procurement** and achieve more uniform prices of services.

Hospital Master Plan

Hospitals make the largest part of Croatian health care system, both in terms of number of employees and the funds allocated for their activity. Reorganisation of the structure and operation of hospitals has a huge potential to contribute to improvement of efficiency, effectiveness and availability of health care. The Ministry of Health initiated the production of Hospital Master Plan, which is financed from the World Bank loan, while the implementation of the Hospital Master Plan is to be funded from the state budget, EU structural funds, and possible future loans by the World Bank. The Hospital Master Plan will analyse in detail the situation in the hospital system and will use the morbidity and mortality data, as well as demographic and other projections, to recommend concrete measures of restructuring and reorganisation, down to the level of individual institutions.

The National Health Care Strategy 2012-2020 provides the analysis on the level of the entire health care system and defines the key directions of development of the hospital system, which will be further elaborated in the Hospital Master Plan. Implementation of the Hospital Master Plan should resolve many of the problems that arose in the hospital system due to an unplanned expansion of hospital network and the services they provide. Joining the hospitals in **regional hospital networks** or **associations of institutions** will enable the redistribution and concentration of hospital services, better use of all contracted facilities, opening up of the possibility of contracting new facilities where needed, and avoiding unnecessary accumulation of sophisticated diagnostic and therapeutic procedures at small geographical distances. At the same time, **national and regional centres of excellence** will be defined, which will enable purposeful and targeted equipping of hospitals with technology and staff, in accordance with their role in the health care system and the needs of the patients they care for.

Hospitals on the secondary and tertiary level, together with the existing and possible new educational units in primary health care and public health, should be integrated into **functional educational networks** in order to fully use the scientific and educational capacity that already exists outside the clinical institutions, which might be additionally encouraged and strengthened through the educational network.

Considering the decreasing trend of hospitalizations in all categories of mental patients, except in those suffering from various forms of dementia, bed capacities in psychiatric hospitals must be directed towards that group of patients.

The Hospital Master Plan will pay special attention to rationalisation of acute care through **strengthening day hospitals** and opening up the capacities for long-term and palliative care. Day hospitals represent modern, sparing, efficient and multidisciplinary approach, which significantly improves the quality of health care. Day hospitals must be connected with community health centres, specialist-consiliary health care in hospitals, mental health services in county institutes of public health, and primary health care offices, to build a functional whole where most health-related problems of the population will be dealt with, including small surgeries ("one-day surgery"), as well as palliative care (including terminally ill children). Desirable development of day hospitals implies building reconstructions and modifications which would result in health care workers gathering around the patient, instead of patient going round the hospital searching for the next service or person to provide it.

Structural modifications and reconstructions of hospitals in general must be directed towards an increase of **energy efficiency**, which will reduce the maintenance costs, and, at the same time, contribute to the achievement of one of the key goals in the strategy Europe 2020: a 20% increase in energy efficiency. Furthermore, structural and organisational modifications must be directed towards reduction of pollution of the working environment and safe disposal of waste, in order to improve occupational health and safety of the health care workers. Hospitals, as well as other health care institutions, should accept “green”, i.e. ecologically aware and responsible public procurement.

The Hospital Master Plan must suggest the approach to **reorganisation of pharmaceutical profession in hospitals** and its more active inclusion in provision of health care.

Reorganisation of structure and operation of emergency medical service must be directed towards **integration of out-of-hospital and hospital service** in order to achieve optimum care for all persons whose lives are in danger due to sudden disease or aggravation, injury or poisoning. Horizontal connection of emergency medical network with conjoint emergency hospital wards shall make the emergency medical service more efficient, at the same time providing excellence in caring for emergency patients. An adequate system of care for injured, especially politraumatized patients, will imply development of **trauma centres network**, including a classification of hospitals based on their capacity to provide care for the injured.

Joint public procurement for hospitals owned by the Republic of Croatia has already been initiated as one of the direct measures to improve efficiency in the hospital system. Another such measure will be transferring the responsibility for certain **non-health care services** from hospitals to an independent state-owned company (spin-off) or outsourcing such services to private companies.

Table 4. Measures planned within the Priority 4: Reorganisation of the structure and activities of health care institutions

Measures	Strategic directions				
	1	2	3	4	5
4.1 Encouraging the establishment and equipping of group practices in primary health care	+		+	+	
4.2 Strengthening interdisciplinary cooperation in health care (e.g. rehabilitation, mental health protection, palliative care in the community)	+		+	+	
4.3 More precise legal regulation of the concessions for performing public health care service	+		+	+	
4.4 Preparation and implementation of the Hospital Master Plan	+		+	+	
4.4.1 Integration of hospitals in regional hospital networks or associations of institutions	+		+	+	
4.4.2 Redistribution and concentration of hospital services within regional hospital networks or association of institutions	+	+	+	+	
4.4.3 Integration of secondary- and tertiary-level hospitals in educational networks	+	+	+	+	
4.4.4 Functional integration of community health centres, family medicine/general practices in concession, day hospitals and specialist-consiliary health care in hospitals	+	+	+	+	

Measures	Strategic directions				
	1	2	3	4	5
4.4.5 Increasing the capacity of day hospitals and capacity for long-term and palliative care		+	+	+	
4.4.6 Functional and structural modifications of hospitals, with increased energy efficiency			+		
4.4.7 Transfer of certain non-health care services from hospitals to an independent state-owned company (spin-off) or outsourcing such services to private companies			+		
4.5 Joint public procurement for hospitals owned by the Republic of Croatia	+		+	+	
4.6 Integration of out-of-hospital and hospital emergency medical services	+		+	+	
4.7 Procurement of vehicles and equipment for emergency air and maritime transport of patients	+			+	

Priority 5: Fostering quality in health care

Monitoring, education and informing

In order to implement consistently the adopted standards of health care quality and safety, it is necessary to improve two key processes: monitoring and education.

Health inspection service of the Ministry of Health, professional chambers, and committees or officials for quality assurance appointed in individual health care institutions must participate and mutually cooperate in **monitoring of mandatory quality standards** of health care, with clearly defined and divided authority. The capacity for control of health care quality, safety and patients' rights will become stronger through improvement of legal regulation, informatisation and training of all participants in that process. Introducing a certain number of publicly accessible indicators of quality of health care institutions would enable ranking such institutions according to their quality, which is one of the Euro Health Consumer Index indicators on which Croatia is poorly rated.

Contents related to health care quality and safety of patients need to be included in **all levels of education** of health care workers. Education and informing should not be directed only to health care workers, but also to patients, i.e. health care users who need to know their rights, be able to exercise informed choices, and participate in assessing the quality of health care. **Strengthening the health care users** must be achieved also by establishing a functional system of receiving and processing complaints, which must respect the subsidiarity principle, with problems being reported and resolved at the lowest level possible, i.e. the closest to the place where the problem occurred.

Clinical guidelines and accreditation

Clinical guidelines, algorithms and protocols are the key instruments in improving and standardizing the health care quality. This refers to instructions or recommendations for prevention, diagnosis and treatment of specific conditions or diseases, which need to be based on the best available scientific evidence and approved by relevant experts or a committee. The professional associations such as Croatian Medical Association and Croatian Nurses Association must have the leading role in that process, with participation of professional chambers and other interested institutions, organisations, groups and individuals.

Clinical guidelines must be developed **for all levels of health care** – primary, secondary and tertiary, and the guidelines for self-treatment and standard operative procedures for pharmaceutical services must also be produced (including those for combating forged medicines).

Monitoring of application of clinical guidelines, algorithms and protocols is a constituent part of **accreditation**, the second key instrument of improving and standardizing the quality of health care and the patients' safety. A voluntary procedure of harmonisation of a health care institution with accreditation standards implemented by the Agency for Quality and Accreditation in Health Care and Social Welfare must be systematically encouraged and awarded.

Contracting and payment in relation to quality

Contracting of health care must be related to **measurable indicators of efficiency and quality**, for which it is necessary to define and monitor the key quality indicators and establish organisational and informational infrastructure which supports those processes. Moreover, it is necessary to establish a legal framework and model of paying health care workers which would **award high-quality work**. Cooperation of insurers, health care institutions and unions will be necessary for implementation of such measures.

Safe and high-quality health care should become a priority of each part of the health care system and every individual involved in health care. All employees in the health care sector must be encouraged in their everyday work to seek possibilities and areas for improvement of quality and reducing the possibility of unwanted events that might pose the risk to the patient. Stimulation must be directed towards development of new approaches to quality, reducing differences in health care provision, and improvement and expansion of the principles of best professional practice.

Health technology assessment

It is necessary to strengthen Health technology assessment (HTA) in order to obtain impartial, professional, objective and transparent recommendations on justifiability of application of new health care technologies or replacement of existing ones. Direct users of such recommendations might be the Croatian Institute for Health Insurance, the Ministry of Health or managers of health care institutions. Ultimately, the goal of HTA is to provide the best possible health care, taking into consideration the economic analysis as well as ethical, social, legal and organisational factors.

In order to strengthen the HTA, the legal framework must be improved and include definitions of the process itself, its users, and the obligation of obtaining HTA when making decisions on health care policy, capital investments in health care, new health care programmes, inclusion of new medicines on the Croatian Institute for Health Insurance's lists of medicines, introduction of new medical devices

and other technologies, and decisions on their complete or partial reimbursement. Moreover, it is necessary to **strengthen human resources for performing HTA** in Croatia through permanent education and fostering international cooperation. Finally, it is necessary to strive for **transparent inclusion** of representatives of patients' associations, professional societies and pharmaceutical industry, i.e. manufacturers of medical devices in the process of HTA.

Table 5. Measures planned within the Priority 5: Fostering quality in health care

Measures	Strategic directions				
	1	2	3	4	5
5.1 Strengthening health care inspection		+	+		
5.2 Introducing contents related to health care quality and safety of patients at all levels of education of health care workers		+			
5.3 Establishing a functional system of receiving and processing of patients' complaints		+	+	+	
5.4 Producing clinical guidelines, based on scientific evidence and best practice		+	+		
5.5 Accreditation of health care institutions		+	+		
5.6 Monitoring and analysis of quality indicators at all levels of health care	+	+	+		
5.7 Establishing the model of contracting health care based on measurable indicators of efficiency and quality		+	+		
5.8 Establishing the payment model for health care workers which would award high-quality work		+	+	+	
5.9 Strengthening the health technology assessment		+	+		

Priority 6: Strengthening preventive activities

Emphases in prevention

Croatian health care system must increase its focus on the prevention of disease, for which it needs to gradually **increase the share of preventive programmes and activities in the health care budget**. The primary focus in prevention must be on the biggest health problems of the Croatian population – chronic non-infectious diseases, malignant tumours, injuries, mental disorders and risk behaviours, including smoking, misuse of alcohol and drugs, physical inactivity and poor nutritional habits. Interventions must be directed towards prevention and treatment of chronic pain, which is a typical and very common symptom of chronic non-infectious diseases that has a negative influence on the quality of life. In prevention of obesity and allergic diseases in children, it is crucial to encourage breastfeeding, including bringing the Breastfeeding Protection and Promotion Act, whose preparation was

initiated already in 1993 by the relevant ministry in cooperation with UNICEF. In preventive activities directed towards the children and adolescents, prevention of tooth decay is among the priorities, and for that purpose it is necessary to adopt and implement the National Programme for Prevention of Caries, which was drafted in 2003 in cooperation with the committee for prevention of caries and the Croatian Society for Paediatric and Preventive Dentistry of the Croatian Medical Association.

Special attention must be paid to working population and workplaces with special working conditions. Occupational medicine as a profession on the primary level with its preventive activities must be a part of the multidisciplinary team and participate in creation of a “healthy workplace”. Preventive activities for **preserving health of the working population** and creating a “healthy workplace” environment will significantly improve stability of the financial system of the country.

Taking into consideration the demographic trend of ageing population and importance of promoting healthy, active and productive ageing, expressly stated in the Europe 2020 strategy, it is important to develop **community-level care for elderly people**. At the same time, it is necessary to apply gerontological standards, especially in terms of referrals from general practices to gerontological centres, where primary prevention for elderly people is provided. Such prevention, with a development of geronto-services, postpones the growth of health care use by elderly people, and contributes to the economic development of the entire community.

Managing preventive activities and programmes

Preventive activities must be encouraged **in all areas and on all levels of health care**, especially where there is a great potential for strengthening the preventive work (primary health care teams, patrol-nage service), and where the preventive activities have not been sufficiently developed so far (e.g. pharmacy). There is a need for better **management of preventive activities and programmes** in order to improve coverage of the population and evaluation of individual programmes, and to enable coordination, rational planning, encouraging and directing preventive activities in the community. Informatisation will be an important support not just for management and implementation of the preventive programmes, but also for strengthening the analytical capacities in the health care system. Additional incentive for preventive work in primary health care should be established by introducing a model of health care **contracting based on measurable performance of preventive activities**, separate from the capitation. At the same time, it is necessary to better define the preventive activities on the primary health care level, develop procedure algorithms, and implement a uniform system of recording such activities in general practice/family medicine.

Harmful environmental factors and the Early Warning and Response System

Considering the importance of the protection of human health from harmful environmental factors, which is regulated by numerous directives and regulations of the EU, there is a clear need in Croatia for further strengthening of the **sanitary inspection** and laboratory and analytical capacities for **monitoring the environmental factors** and their influence on health. It is necessary to legally regulate the monitoring of recreational and swimming waters (swimming pools) and monitoring pollen in the air.

Finally, it is necessary to develop the system that will continuously collect and analyse **information on threats to health in Croatia and the surrounding countries** and exchange them with the Early

Warning and Response System of the EU and the World Health Organisation. In case of occurrence of health threats within Croatia or cross-border health threats, the system must **provide early warning and coordination action** in removal of threat within the country, and coordinated action with other EU member states in case of incidents expanding beyond their borders.

Table 6. Measures planned within the Priority 6: Strengthening preventive activities

Measures	Strategic directions				
	1	2	3	4	5
6.1 Increase of the health budget share for preventive programmes and activities		+		+	+
6.2 Encouraging preventive activities in all areas of health care	+			+	+
6.3 Improvement of management of preventive activities	+		+	+	+
6.4 Establishing a model of contracting health care based on measurable performance of preventive activities		+	+	+	+
6.5 Development of analytical capacities of the Croatian National Institute of Public Health		+	+		
6.6 Strengthening the monitoring and prevention of health care risks caused by environmental factors		+			+
6.7 Development of health care component of the system of early warning and action against health threats	+		+		

Priority 7: Preserving financial stability of health care

Strengthening voluntary health insurance market

In Croatia, the share of private expenditures for health care is one of the smallest in Europe. However, the share of out-of-pocket payments in the total private payments for health care is one of the greatest in Europe. That is partly the result of poorly developed market for voluntary health insurance, which should be encouraged by **developing a supportive legal and regulatory framework**. Private payment through health insurance policies could be increased in the part of the population that wishes to expand the scope of the health care services available from insurance (e.g. aesthetic and cosmetic treatments), the level of non-health care, i.e. comfort during treatment (e.g. single-bed hospital rooms) or shorten the waiting time for diagnostic or therapy procedures in non-urgent cases.

A well-developed voluntary insurance market will be a good incentive for development of new private health care (e.g. midwife practice). Private health care service providers must be encouraged to partly transfer to payment through private insurers.

Monitoring financial operations

It is necessary to increase **financial discipline** in the health care system, which can be achieved by better supervision of financial operations (with informatisation as an important tool in the process), by awarding financial excellence and demanding personal responsibility for poor financial operations. Financing must become tightly connected to the measurable indicators of performance, which can be achieved through appropriate models of contracting health care services.

Strategic allocation of resources according to priorities

No country in the world is rich enough to be able to equally invest in all areas and projects in health care. The Republic of Croatia must invest the funds available to the health care system to address the identified and documented needs, and according to clearly **defined and justified priorities**. That is especially important in the context of Croatia's accession into the EU and the possibility of support from structural and cohesion funds for which national co-financing and strategic planning of the investments are necessary.

Fighting corruption and informal payments

Development of voluntary health insurance market will reduce the need for private out-of-pocket payments, including informal payments. In general, corruption must be prevented by the application of **objective and measurable criteria** (e.g. for employing or selecting candidates for speciality training), increasing **transparency in operation** of the health care system (e.g. for waiting list and public procurement) and strengthening **control mechanisms** (e.g. monitoring the performance of health care workers and institutions, respecting the publicly announced waiting lists).

Informatisation will be one of the key tools for increasing transparency and control in the health care system. A clear legal framework is the second significant precondition for fighting corruption and informal payments in health care. It is especially important to better regulate the legal conditions based on which physicians working in public health care institutions may provide health care services within the private practices. Moreover, in the part of training of health care workers financed by donations of the pharmaceutical industry and other economic subjects, it is necessary to provide equal opportunities and transparency in distribution of donated funds.

Table 7. Measures planned within the Priority 7: Preserving financial stability of health care

Measures	Strategic directions				
	1	2	3	4	5
7.1 Development of regulatory framework for strengthening supplemental and additional health insurances in order to increase the share of private health care payments in the population which can afford it			+	+	
7.2 Better control of financial operations			+		
7.3 Strategic allocation of resources according to the defined priorities and in synergy with the EU funds			+	+	
7.4 Fighting corruption and informal payments in health care			+	+	

Priority 8: Cooperation with other sectors and the society in general

European strategy Health 2020 clearly stresses the significance of joint efforts, partnerships and inclusion of all participants in health care and society in achieving key goals: improvement of health and well-being of people, reducing inequality in health, and insuring sustainable and people-oriented health care systems. The “**health in all policies**” approach, “**whole-of-government**” approach and “**whole-of-society**” approach must be among the priorities of the strategic development of Croatian health care in the following period. Possibilities of cooperation are so great and numerous that it is neither possible nor necessary to prescribe them. Below are only some of the existing and possible forms of cooperation which should be strengthened and coordinated in order to ultimately improve health care indicators in the Republic of Croatia.

Intersectoral cooperation

In the government of the Republic of Croatia there is practically no ministry which is not at least indirectly connected with health of the population. The ministry of health must be the leader in creating a **consensus on health** as a key precondition for the entire social and economic life of the nation. Each ministry should become aware of its role and opportunities for actions to improve health and prevent diseases or injuries, and the Ministry of Health must encourage or coordinate such actions in other sectors.

Considering the existing shortages of health care workers and central role of research in the contemporary medicine, **the science and higher education system** directly influences the development of health care in the Republic of Croatia, therefore the cooperation between responsible ministries is crucial in that area. These ministries should jointly define and financially support the research priorities in biomedicine and health care, and the funds must be concentrated in priority areas and centres of scientific excellence. Cooperation is necessary in planning the education of health care workers, taking into account the needs for staff in health care.

Cooperation with the **education system** must be directed towards common development of health promotion in schools and kindergartens, support to families for improvement of parenting skills and early interaction, and strengthening abilities of children to face every day life challenges and resolve crisis situations.

Activities of the **Ministry of the Interior** during the past years greatly contributed to the reduction of accident-related mortality rate, which is a good example of the role of other ministries in improvement of population health indicators. Since the injury rates in Croatia are still above the European average, it is necessary to strengthen intersectoral cooperation with the goal of preventing traumatism and violence, whereby it is necessary to work with the ministry responsible for **family and youth**. That ministry plays an especially important role in developing the family support programmes, as well as in implementation of the National Programme for Youth, which includes a part on the health care and reproductive health of youth.

The health care system is in many ways connected with the **social welfare** system, and the support and community care programmes for the most vulnerable groups such as physically and mentally ill chronic patients and dying persons, as well as their family members, should result from the cooperation of those two sectors.

The Ministry of Health must cooperate with the ministry responsible for **labour** in order to establish and implement preventive examination of employees; the ministry responsible for **environmental protection** concerning disposal of medical waste; the ministry responsible for **war veterans** concerning improvement of health of that population; the ministry responsible for **defence** concerning crisis management and health care of armed forces members; the ministry responsible for **regional development and EU funds** concerning health of the population on islands, rural health, and financing projects and investments in health care and health tourism through EU funds; the ministry responsible for **agri-culture** concerning monitoring of food safety and antibiotic resistance of bacteria, and for ensuring quality of drinking water; the ministry responsible for **justice** concerning court expert witnessing; the ministry responsible for **civil engineering** concerning the improvement of energy efficiency in health care facilities; the ministry responsible for **physical planning** concerning the impact of urbanism, architecture, and physical planning on human health; and the ministry of **finance** concerning financing the health care system. Development of the health tourism is an example of the area where intersectoral cooperation is not only desirable but necessary, with participation of the ministries responsible for **health, economy, and entrepreneurship and crafts**. From the perspective of the ministry responsible for health, health capacities in the public sector should primarily be directed towards the health needs of the population, i.e. the persons covered by the mandatory health insurance system, and any surplus capacities might be directed towards health tourism. Investments in the health tourism should be facilitated and simplified for private investors, both in the surplus capacities in the public health care sector and in building of new capacities, i.e. objects.

Cooperation with regional and local self-government

Regional and local self-government plays an important role and has good opportunities in improving the health of the population. Mutual **cooperation and connection** of regional and local self-government units may contribute to strengthening their abilities to accomplish their legal rights, obligations, tasks and goals in the area of health care. Regional and local self-government units should **identify health priorities** in their own environment, and design and implement programmes of health care promotion, disease prevention, and development of specific health care capacities (e.g. medical and health tourism) in accordance with the local needs and resources, with County Health Councils playing the crucial role. The **community health care** concept implies participation of regional and local self-government. Regional and local self-government units may play an important role in **attracting and encouraging employment** of the health care workers in rural areas, on islands, and other areas where there is a weak interest for working in the primary health care (e.g. by consigning a publicly owned space for establishment of general practice). Regional and local self-government units are particularly well-positioned to act as catalysts of cooperation among various participants (e.g. health care workers, educational institutions, organisations of civil society, media) with the goal of health promotion.

Cooperation with organisations of civil society and media

Civil society organisations contributed greatly to the social life development from the very founding of the Republic of Croatia, and many of them have become a significant **partner in the health care system**, especially in the area of protecting the patients' rights, health promotion, and prevention

of diseases and injuries. Two civil society organisations – Croatian Red Cross and Croatian Mountain Rescue Service – are of such importance that special legal acts are dedicated to them. It is important to plan the cooperation of emergency medical service and Croatian Mountain Rescue Service in obtaining and use of **helicopters for emergency air transport of patients**.

The second important area of cooperation of the civil society with the emergency medical service, but also with the Croatian Medical Association, is the use of **automated external defibrillators**. In order to establish the programme of defibrillator availability in Croatia, it is necessary to bring relevant legal regulations and train as many lay citizens as possible in the use of such devices. Placement and proper use of defibrillators should be encouraged by the local community (e.g. on main town squares, swimming pools, etc.), companies (e.g. in large shopping centres, airports under concession, etc.) and governmental and non-governmental organisations (e.g. Croatian Red Cross, associations of citizens). In general, it is necessary to strengthen the **skills in giving first aid** among the citizens, for which training programmes and appropriate incentives for participating in them are necessary.

Civil society organisations can help in resolving strategic problems of the shortage and geographically uneven distribution of the health care workers. In short- and mid-term perspective, that help can be achieved through **the system of volunteering** which, with a relevant legal regulation and training of volunteers, may reduce the shortage of health professionals, especially in certain segments of health care (e.g. palliative care or emergency care on islands).

Huge potential of the civil society in **promoting health and prevention of disease and injuries** should be used through multifunctional counselling centres, which could be established in community health centres, county institutes of public health, in facilities of regional and local self-government or other suitable places, where educated volunteers would provide various forms of health care support and consultation to citizens, with the support of health care professionals. At the same time, it is important to use modern **communication and information technologies and mobile technologies** which could help in empowering the patients, especially those with chronic diseases, and help them cope with their health problems. Civil society organisations, especially associations by youth and for youth, may play an important role in health promotion and disease prevention through **informal education and organisation of free time of youth**. That especially refers to prevention of substance abuse, but also prevention in the area of sexual and reproductive health.

In the long run, civil society organisations may help overcome the shortages of health care professionals through **advocacy and promoting attractiveness of health care professions** among the young, with media playing the key role, especially the state-owned public television which should assume an active role in educating the public in healthy behaviours.

Finally, civil society organisations and the media, but also all conscientious and responsible citizens of the Republic of Croatia, must advocate and promote **taking responsibility for own health and responsible use of health care**. It is true that, in accordance with the law, all citizens are entitled to health care and have a right to achieve the highest level of health possible. However, the citizens are also obliged to take care of their own health, participate in health and preventive activities, and avoid endangering health of others. Taking care of one's own health implies behaviour which reduces the risk from disease and increases the quality of life.

Responsible use of public health care means that the citizens must respect the restrictions in approach to health care system, i.e. respect the rule according to which the public health care system should be approached through primary health care physician, and not directly to the level of specialist-consiliary health care.

When all participants in the health care system – both health care providers and users – take **responsibility for their actions and behaviour**, a key precondition shall be created to achieve the vision of the health care that we really want by 2020.

Table 8. Measures planned within the Priority 8: Cooperation with other resources and the society in general

Measures	Strategic directions				
	1	2	3	4	5
8.1 Strengthening intersectoral cooperation (among ministries)	+	+	+	+	+
8.2 Strengthening cooperation with local and regional self-government	+	+	+	+	+
8.3 Cooperation with civil society and media	+	+	+	+	+

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