

## CASE STUDY

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# Public Health Aspects of the Family Medicine Concepts in South Eastern Europe

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## ABSTRACT

**Introduction:** Family medicine as a part of the primary health care is devoted to provide continuous and comprehensive health care to the individuals and families regardless of age, gender, types of diseases and affected system or part of the body. Special emphasis in such holistic approach is given to the prevention of diseases and health promotion. Family Medicine is the first step/link between doctors and patients within patients care as well as regular inspections/examinations and follow-up of the health status of healthy people. Most countries aspire to join the European Union and therefore adopting new regulations that are applied in the European Union. **Aim:** The aim of this study is to present the role and importance of family medicine, or where family medicine is today in 21 Century from the beginning of development in these countries. The study is designed as a descriptive epidemiological study with data from 10 countries of the former Communist bloc, Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia, Kosovo, Albania, Bulgaria, Romania, Czech Republic, Slovakia and Hungary, just about half of them are members of the EU. We examined the following variables: socio-organizational indicators, health and educational indicators and health indicators. The data used refer to 2002 and as a source of data are used official data from reference WebPages of family medicine doctors associations, WONCA website (EURACT, EQUIP, EGPRN), WebPages of Bureau of Statistics of the countries where the research was conducted as well as the Ministries of Health. **Results:** Results indicates that the failures and shortcomings of health care organizations in Southeast Europe. Lack of money hinders the implementation of health care reform in all mentioned countries, the most of them that is more oriented to Bismarck financing system. Problems in the political, legal and economic levels are obstacles for efficient a problem reconstructing health care system toward family medicine and primary prevention interventions. The population is not enough educated for complicated enforcement for and prevention of diseases that have a heavy burden on the budget. Health insurance and payment of health services is often a problem, because the patients must be treated regardless of their insurance coverage and financial situation. The decrease in production and economic growth, as well as low gross national income in the countries with economic crisis, lead to the inability of treatment for a large number of the population. Such situation a system leads to additional debts and loans to healthcare system. Measures implemented for provision of acute curative care largely did not lead to improvements in the health status of the population. Educational and preventive measures, as well as higher standards for quality and accessibility of health care services for entire population in each country, especially those struggling are bound to joining the European Union and their implementation must start. The most A large number of medical institutions are is inefficient in health education and health promotion and must work to educate patients and families and increase the quality of preventive health services. Modernization of health care delivery and joining the European Union by increasing overall economic stability of countries is one of the primary goals of all countries in Southeast Europe. **Key words:** primary health care, modernization, education, health care objectives, financing, payment for health care services

## 1. INTRODUCTION

Family Medicine is the first step between doctors and patients within care for the sick as well as regular inspections of healthy people. By WONCA definition from March 2002 which was adopted in *Noordwick, Netherlands* family medicine is: (1)

- Clinical specialization and separate academic/scientific

discipline;

- The first contact with the health care system;
- Provides comprehensive services to all family members, regardless of the type of problem, age, sex;
- Provides continuous care over time and in different environments;
- Has its own specific epidemiology and uses a specific

- process in making decisions;
- Deals with health problems in their physical, psychological, social and cultural dimensions;
- Provides access to the care that is oriented towards the patient and which is characterized by creating a close relationship, over time, between doctor and patient;
- Promote good health and well-being through appropriate, safe and effective interventions;
- Makes effective and safe use of resources through coordination of care, management and referral of patients by establishing contact with other professionals.

Over the past two decades in the Southeast European countries there has been a great change. In addition to the economic, political, geographic we also saw a changes on the healthcare plan.

Countries in transition after the collapse of socialism are faced with *problems of the citizens insurance, reduced employment, reduced number of jobs, outdated equipment and a small number of health care institutions* (2). Experts are searching for an effective and feasible way of financing health care through a variety of funds, in order to provide relief to courtiers budgets.

In addition to the disintegration of socialism, war events that occurred in the former Yugoslavia setback also a healthcare system. Additionally began the privatization of health systems, the opening of private health funds modeled on the Western system and the introduction of family medicine among the population.

Before the collapse of the communist bloc in Eastern Europe, began the reforms that were visible in the early '80s in the United Kingdom during the reign of Margaret Thatcher (2). Many of these ideas are still not implemented. On the territory of Yugoslavia the reason was war, while in Bulgaria and Romania the reason was political turmoil and lack of majority of votes in the government (2).

### 1.1. Healthcare in Bulgaria

In Bulgaria, the first health law, which came into practice was written 1918 (3). In 1924 the government has enacted the first law on health insurance which covered all the people employed in the private and state companies. In 1925 is adopted the Act on the Protection of persons who are unemployed. In the period from 1945 up to 1990 was passed several laws related to health care of the population. After the collapse of communism, it was obvious that the health system is in complete collapse. World Bank for development and the European Union have initiated various actions and programs for the reconstruction of the healthcare system. Besides this, the acts are passed for privatization of the health sector.

Bulgaria health care reform began in 1989 (4). In addition to the decentralization of the healthcare system in the system is included also the private sector. Financing of healthcare remained the responsibility of the state until the 1998 when was passed the law on financing whose application started in 2000. HIF was established that coordinates the work of 28 institutes across the country. The HIF is funded by revenues from insurance of the employees, while also the self-employed have to pay for health insurance. The HIF provides a basic set of health insurance in the state or private institutions.

Primary health care is paid by capitation and the principle of payment for services (4). Primary health care is the guardian of the passage of patients to specialized branches in hospitals, although patients themselves can immediately go to a special-

ist hospital. Vulnerable groups of patients are entitled to a basic set of free healthcare. Still, the system itself is not as effective and work must be done to improve it. Financing of health care institutions is provided by the Ministry of Health. Almost 92% of Bulgaria's population is covered by compulsory health insurance.

### 1.2. Healthcare in Romania

Romania until 1960 had a system that was based on the European health care systems. Since 1960 until 1990 the health care system started to stagnate. Emphasis is on 1990 and major changes that have led to unemployment and poor health care. After joining the European Union started new reforms to improve the health care system (4).

Romania has started the health care reform and decentralization over law on healthcare reform from 1991 (4), when was formed 42 departments that are taking care about the health care. The reforms that have been implemented in the 1990s were financed by the World Bank under the leadership of the United Kingdom. After the reform the family medicine doctors are working in their offices completely separate from the system of the private sector. Social health burden is growing constantly with 64.6% in 1998 to 82.7% of the total health services costs in 2004.

The source of payment is a capitation, payment for services as well as bonuses that realize the doctors (4). After adjusting laws were in 1997 districts were reformed and they are required to control the financing of primary health care. Health Insurance is mandatory for a basic set of health care and the protection of affected populations. Privatization included pharmaceutical activity and dentists while most of the other medical care are in the public sector, while the private sector is less represented.

### 1.3. Healthcare in Albania

Albania before World War II had a small number of doctors. Also, the number of institutions in Albania was small. Apart from doctors also religious representatives had their own hospitals. Between 1945 and in 1960 the doctors were educated in the Soviet Union as well as in some European countries (5). Between the 1960 and 1970 begins the reform. In 1980 comes the law on health insurance of the population. In 1990 the progress still did not occurred due to poor nutrition, poor health system, etc (5). Due to the breakup of Yugoslavia, the collapse of the communist system in Albania condition was bad. In 2000 was given 160 million US\$ to improve the health system in Albania (5).

Financing of health care in Albania before in 1990 was discreet. Each province was paying for health care services through employee salaries. In political sense health was separated from the rest of the state funding. Hospital managers had to go to the Minister of Health regarding the salaries, employment of personnel, etc. Today, the health ministry has set aside a special fund for the payment of health workers and the maintenance of health facilities. Each province fund health institutions in their region.

In Albania HIF was established in 1995 (4). The system is managed by social insurance for primary health care, hospital care as part of the essential drugs list. Data from 2008 say that 80% of people is still not covered by health insurance in Albania, while 60% paid health insurance by themselves (4). Primary health care is provided to endangered part of population, such as the unemployed, pensioners, children, etc.

#### 1.4. Healthcare in the former Yugoslavia

The health system of Yugoslavia was created before World War II. It is made by the Ministry of Health under the direction of Andrija Stampar. It was based on health centers and staff working within them. In addition to GPs also worked specialists of different professions as well as secondary medical personnel (6).

Specialization in family medicine was introduced in 1960. Still an increasing role in the treatment of patients except for specialists of various profiles were family doctors. The system was centralized until 1974 when it was transformed into a decentralized system. The main executive bodies of the state controlled the operation of all other bodies or managers of primary, secondary and tertiary health care (7). Since 1974 the governing body is elected at the local government level, state or community. Since 1980 in Slovenia and Croatia began implementation of a system of state-private ownerships. The idea was that each patient can choose a private practice or doctor for their medical treatment and diagnostics, while the health insurance fund refunded and paid to private practice. With the arrival of the reforms and the war this type of health care has never come to life in its fullest extent.

##### *Slovenia*

Slovenia is one of the states of the former Yugoslavia. The first specialization in family medicine was started in 1960, although then called primary health care. Among the first was granted independence and first admitted to the European Union. Slovenia's population is about 2 millions (8). In 1991 after the dissolution and separation from Yugoslavia, there have been major political changes as well as changes in the health system of the state. In 1992 the health care system is changed to a decentralized system (9, 10). At the end of 2006 Slovenia has had 29 hospitals that were mostly built in the 1970s, but have been renovated. Number of beds has increased by 33% between the 1980 and 2007. Number of hospital days decreased from 10.4 days in 1995 to 6.8 days in 2007. Number of health centers has increased since 1990 and now within 20km there are health centers throughout the territory of the Republic of Slovenia (10).

The main role still has the Ministry of Health which coordinates the operation and development of the health sector. Institute for health care system is one and it insures all residents. Only the units of health care such as hospitals and clinics are located partly in the private sector. Health Insurance Fund covers 80% of all claims for payment for medical services (10). At the present time the biggest problem is the gap between private and public property. Regulation of payment in these two institutions has not yet been agreed with the government and the Ministry of Health. In July 2008 is adopted the Act on the Reform and Objectives of Health Care and Care for the period 2008-2013.

Nowadays, after health care reform there are two departments of family medicine at Medical Faculties in Ljubljana and Maribor. Educators in primary care today numbering over 2000 trained and certified doctors that pass their knowledge to new generations. The family doctor has an obligation to provide medical care within 24 hours.

##### *Croatia*

In Croatia, the development of health care and insurance for the population reaches to the 1922 when appeared the first private insurance companies modeled on European regulations. The period between the 1920 and 1930 was marked by

professor Andrija Stampar which is one of the pioneers of family medicine in Yugoslavia (11). In Croatia during 1968 there were 960 GPs. Their scope of action was majority *epidemiology and preventive medicine*.

After the breakup of Yugoslavia, there was a formation of a new organization of the health system. In 1993 the Act is designed to address the health care system under the guidance and control of the Croatian Ministry of Health. Among other things, the Act prescribes medications that are on the essential list and surgical procedures covered by the health insurance fund.

The primary responsibility for financing and payment have Institute for Insurance. The funding is almost normal practice in case of vulnerable populations (children, old population, the unemployed, war veterans) covered by the health insurance fund. In addition to this there is an additional service package of health insurance for those who want to improve their basic care. From 2002 the benefit to the new health insurance law that changes some of the principles of health insurance and introduces some new things (4). In 2005 the amendment was placed on the law from the 2002. By this amendment every patient, unless patients under 18 years of age or over 80% disabled people with a disability, have to pay 0.83 U.S.\$ or 1.66 U.S.\$ to obtain the required services in health institutions. In addition to this part of the law was added and part of the participation of patients during transport and during funeral services by whose decree reducing the proportion that is required to pay the HIF.

##### *Bosnia and Herzegovina*

Historical development of health care goes back in 1879 during the Austro-Hungarian rule. The first law was passed in 1888. Organization of health care was like in other parts of the world under the rule of the Austro-Hungarian Empire. After the arrival of the Kingdom of Yugoslavia in 1918 was enacted several laws on health care. The health care was developed equally throughout the territory of the Kingdom of Yugoslavia (12). Regional Hospital in Sarajevo, opened on the July 1st 1894, and was the largest hospital facility in the region and had four department (204 beds) (13). The network of health institutions and ratio of medical staffs per 1000 inhabitants at the end of First World War in B&H was very confort. From 1923 in B&H opened a lot of health centers and dispensaries for providing primary health care with concept of health promotion, home care and polyvalent patronage based on the ideas of professor Andrija Stampar as well as the entire territory of Yugoslavia. From 1976 in Sarajevo, Mostar and Banja Luka till 1990 was organized Family Practice Health Care Units with model of providing family practice at home - home care, paliative care, health promotion, polyvalent patronage and health education of patients at home, schools, work place. Concept was based on motto: "whole family with all members at one place of health care protection" and "all medical data about family members on one family registration card/medical record linkage" (13). In Bosnia and Herzegovina affected by the war in 1992-1995 there was a specific organization of the health system after the breakup of Yugoslavia. Each ethnic group in their area had a specially designed health care system.

After the signing of the Dayton Agreement established are the two Entities and the Brcko District which together form the Bosnia and Herzegovina. In the Federation of Bosnia and Herzegovina has been proposed health care system modeled on the

British system while the money to enable the implementation provided the World Bank development fund (4). Health Care Act and the Law on health insurance is adopted in 1997. Each of the 10 cantons has its own health insurance fund, which is filled by tax revenues and contributions from employed population. The fund is filled by contributions of the employed population in the state sector, the private sector, employed as farmers as well as payment of certain services.

Primary health care, which included one doctor and one nurse was made in 2001, and payment on the principle of capitation in 2005 brought a reform which covered the majority of the population.

#### *Serbia*

The health care system in Serbia after the changes in 1990 suffered great stagnation and degradation. After integration in 2000 is adopted a set of laws and regulations for health sector reform. Health Care Act and the Health Insurance Act was adopted in 2005.

The mere reform of family medicine involved the selection of doctors for each person individually in their health center. Ownership and financing is decentralized to the municipalities. However, if the reform itself well designed and financed by the European Agency for the Development of reform itself was not accepted by the best medical specialists of different profiles. The law protecting endangered population as well as the principle of capitation payment. For the majority of the population is needed additional payment for medical services. Health Insurance does not cover the full scope of costs. For primary health care is spent 24.6% and 19.1% of the budget is spent on health centers (14). The local community participates with 4.4% and 0.2% from donations. Another 11.6% is earned by commission from other services such as—provision of services and renting space. From this 70% is spent on salaries, 14.5% on training and services while the medicines, equipment and other supplies consumed 15%.

In 2009 is published plan for the development of the medical sector in which it concluded that today's health care system is too large, inefficient, outdated, out of control medical, personnel and other resources and the need to urgently launch reforms for its improvement (14).

#### *Montenegro*

The health system of Montenegro was incorporated into the system of Serbia until the 2006 (4). After the separation the system is based on the free choice of family medicine doctors and dentists in a region that Health Center covers where patients live. There are four types of selection for the population (4) doctors for children up to 15 years (pediatric), women health (gynecologists), doctors and dentists for adults. The higher health care is possible in health centers. The system of payment is provided in part through capitation and partly through performance-related payment (4).

System of insurance relies on the Health Insurance Fund of Montenegro which covers around 97% of the population (4). After obtaining the funds from the European Development Fund started the further modernization of health care system.

#### *FYR Macedonia*

Health care reforms were needed in the Republic of Macedonia from early phase of transition. Immediately after political changes in 1991, the Government initiated a program for health care reforms by adopting new Health Care Law and establishing

a single, centralized Health Insurance Fund within the newly created Ministry of Health (15-20). Ministry of Health asked the World Bank for assistance for further implementation of the reform, and Macedonia became a member of the World Bank in December 1993. In 1996, a comprehensive health care reform was undertaken when the World Bank awarded the Ministry of Health a loan of US\$19.4 million in order to achieve universal access to high quality health care through developing a capitation plan for primary health care (PHC) providers and concept of family medicine in PHC, as well as to establish cost effective finance and delivery systems (16, 17). The Health Insurance Law was adopted in March 2000 and the Health Insurance Fund (HIF) was established as an independent institution outside of the Ministry of Health. PHC reform has increased patient choice through patient enrolment and capitation-based payment to physicians. The capitation is calculated on the basis of numbers of insured persons that have chosen a certain physician as their own primary care physician, the determined number of points for each category of population group and the determined value of each point. Additional incentive is provided for physicians' practices that are located in remote rural areas.

The paradigm of family medicine offers effective, efficient and financially sustainable primary health care. The first initiatives for introducing family medicine concept in R. Macedonia appeared in mid 1990s. The Government of Macedonia in 2007 adopted a document "Health Strategy of R. Macedonia by 2020 with decision for introducing specialized family physicians as the leading team members ("team leaders") that provide health services at the PHC (19, 20). Currently different profiles of doctors are working at the PHC level (general practitioners, specialists in general medicine, pediatricians, school medicine specialists, occupational medicine specialists, gynecologists), whose qualifications are also different, which might be an obstacle to providing a comprehensive and holistic health care to the population (19). The decision of the Government to introduce highly trained specialists in family medicine in primary health care is in compliance with the global policies for achieving quality standards for offering a good, equal and quality health care to the whole population, in accordance with the WHO Strategy "Health for All in 21st Century" and toward the integration process of R. Macedonia for reaching the standards of the European Union. According to these standards, all medical practitioners should have undergone appropriate postgraduate training before they would be allowed to practice family medicine independently. Two crucial elements in this regard need to be emphasized:

- Specialization in family medicine was introduced in October 2009 and, until the end of 2012, 82 physicians passed the final exam and become specialist in family medicine (19, 20);

- Additional education, i.e. additional training for doctors working at the PHC level to achieve level of specialists in family medicine, started from the mid 2010 through the Center of Family Medicine within the Faculty of Medicine in Skopje. Duration of the training is from 3-12 months. Training consists of three different categories and locations (Center for continuous medical education, hospitals and outpatient doctors' offices). The Center was supplied with appropriate equipment by the Ministry of Health of Macedonia and the expert and educational support was provided by the Department of Family Medicine at the Faculty of Medicine in Ljubljana. A Working

Group of selected experts from the Faculty of Medicine and from university clinics in Skopje created clinical guidelines and protocols (clinical pathways) in nine priority fields for practicing evidence based medicine at PHC level. Until the end of 2012 more than 130 doctors completed additional training in family medicine (19, 20).

In November 2013 the strategy of the HIF from 2014 to 2015 was presented publicly. The area that concerns doctors of choice at the PHC level is called “More health services at one door” with goal to introduce family doctors in the health system in Macedonia in 2015 with broadening the scope of health services to be available at PHC level (echo diagnostics, measurement of blood sugar, lung capacity, some services from the general surgery i.e. placing cannulas, replacement of stoma bags and litter, removing suture-threads, as well as eyesight measurement, examination of the skin, removing foreign bodies from ears, taking microbiological samples etc.). In addition, HIF promoted some incentive measures for doctors and teams during the first 18 months of their practice and, especially for doctors practicing in rural areas. Introducing electronic diary, electronic health card and abolishing health books by replacing them with electronic health record at the PHC level was promoted as project entitled “Less administration—more time for patients”. HIF announced to start a campaign to promote health in cooperation with all stakeholders in the health system and non-governmental organizations which aims to raise awareness about certain good habits such as proper diet, physical exercise and healthy lifestyle, and to combat harmful habits (smoking, overweight etc.) and their impact on health (20).

#### *Kosovo*

Health care reform in Kosovo was conducted by UNMIK after the war in 1999. The new health care system started from “scratch” by a committee appointed by the WHO. The system itself is based on the European model of health care system (21).

This way of ensuring health care consists of family medicine doctor that serve as entry into system to further treatment and care for the patient. The problem is the dualism between Albanians and Serbs living in the same area (22). The private sector is legalized in Kosovo, and in the absence of the state sector in some parts it replaces functioning of health care (4). The World Bank has given the money as part of the reconstruction program. In addition to prevent fraud has signed agreements with some institutions for primary health care.

#### **1.5. Healthcare in Hungary**

Hungary has a long tradition of health care that originated from the 11th century. Ambulances were led by monks. The first hospital was built in *Selmec* 1422. The first act on the health care system was passed in the 1876. In 1840 the act was passed on health insurance of workers and farmers. By the 1940 the health care system is carried out through the private sector, as well as through some state hospitals. In 1949 the communist system brings about the health care law, which says that the health of national concern. During 1950's, 60's and 70's the system has had great difficulty with the payment and the maintenance of health care (23).

After the fall of communism was established the new government. The law that they voted is based on the reconstruction of health care from 1990 to 1994 (23). The model has allowed the differentiation of local government of the state, authority over hospitals, clinics and health centers. During the period from

1990 until 1994 the emphasis is given to primary health care as the first contact of the patient and the doctor, the principle of capitation payment, choosing a family doctor. In 2001 the Law was introduced on the basic package of health insurance for every citizen. In the period until 2011 was introduced a new reorganization of the health system, which is a image of the system in the European Union.

#### **1.6. Healthcare in the Czech Republic**

Czech health care system until 1990 was organized by the communist system according to *Semashko*. Czech Republic after the breakup met with a number of problems of payment for services, outdated systems and little trained personnel (24). Such a system demanded reforms that began in 1990. Payment of health care services differed depending on whether person is an employee or employer, and depending on whether they allocated money for health care. Since 1992 begins the work of a small private health insurance companied. Their number until 1995 increased to 27. Due to the impossibility of payment most of them are closed. In order to prevent such events has been established insurance fund.

Health care reform began implementation during the 2005 and 2006. In addition to hospitals, reform cover also primary health care. In January 2009 reform have been completed (24).

#### **1.7. Healthcare in Slovakia**

Slovakia during 1990s passed turbulent years after the collapse of communism in that country. Besides Bismarck system began the privatization of hospitals. Due to the high corruption and malfeasance system was brought to the bankruptcy. Between the 2002 and 2006 there have been significant reforms. In 2007 year began reforms and projects related to health education and promotion of healthy lifestyles (25).

According to international statistics Slovakia has a progressive gross national income. Indirect taxes and paying out of pocket increased in the period 2002-2005. The reforms that have been implemented have improved the health care system and its financing (25). After the elections in 2010 have been adopted a new decision on further upgrading the health care system in Slovakia as a standard diagnostic entering the basic insurance, new directions in medicine based on evidence, accreditation of health institutions, supervision of medical institutions, as well as prescribing medications and providing basic medicines to those who are not insured (25).

## **2. GOAL**

The Goal of this study is to present the role and importance of family medicine, or where is family today in the 21st Century since the beginning of development in these countries.

## **3. MATERIAL AND METHODS**

The study was designed as a *descriptive epidemiological* study with data from 10 countries of the former Communist bloc: *Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia, Kosovo, Albania, Bulgaria, Romania, Hungary, Czech Republic and Slovakia.*

The following variables were observed: (1) *Economic and organizational data*, (2) *health and educational indicators* (3) *Health indicators.*

The data used refer to the period 2002-2012, and as a source of data were used official data from reference web pages of associations of family medicine doctors, WONCA website

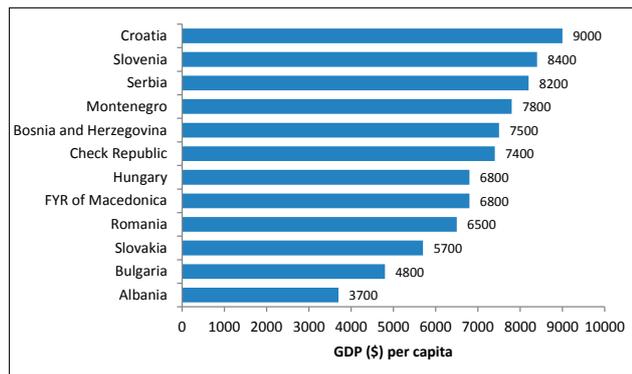


Figure 1. GDP per capita in countries of SE Europe

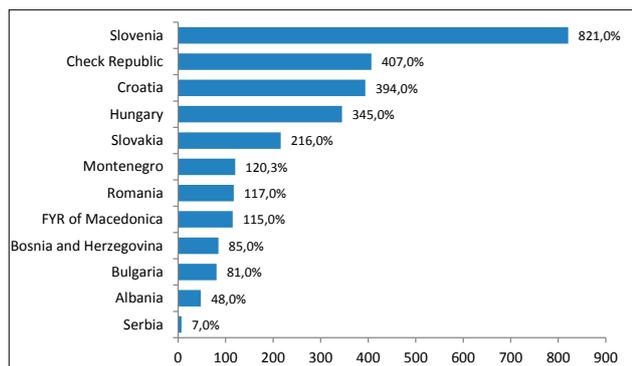


Figure 2. Total expenditure per capita in the countries of SE Europe

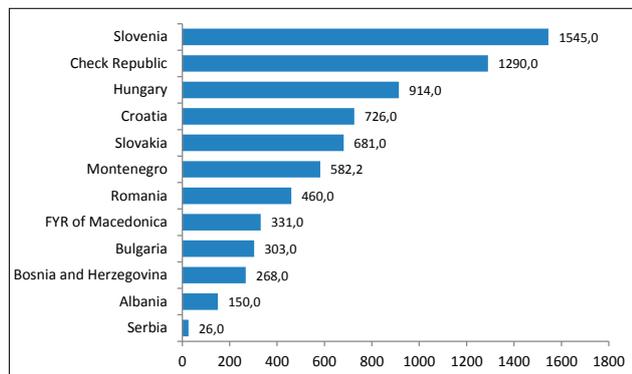


Figure 3. Health expenditures per U.S. dollar exchange rate in the countries of SE Europe

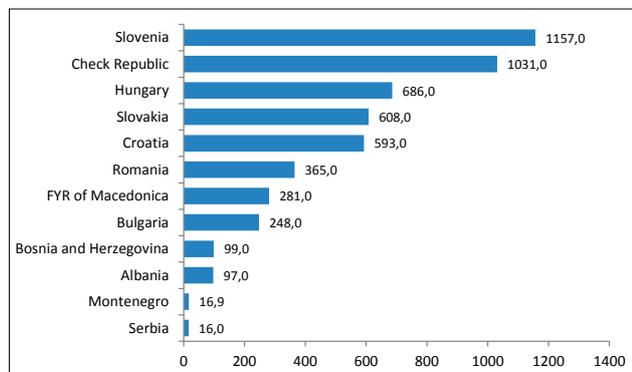


Figure 4. Claims for health per capita per U.S. dollar exchange rate in the countries of South Eastern Europe

(EURACT, EQuIP, EGPRN), web page of the Bureau of Statistics of the countries where the research was conducted as well as the Ministries of Health (21).

Data collected in the above manner were then entered in

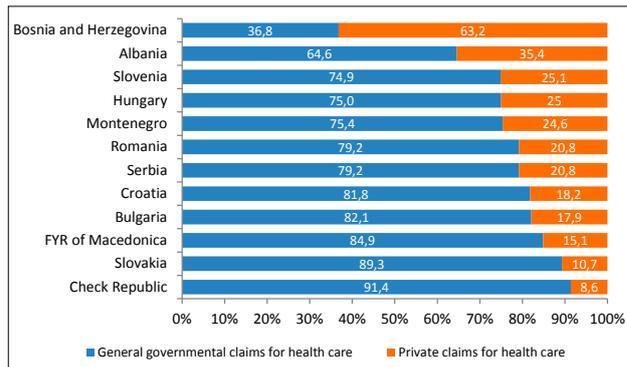


Figure 5. Claims for health care from state and the private sector in the countries of South Eastern Europe

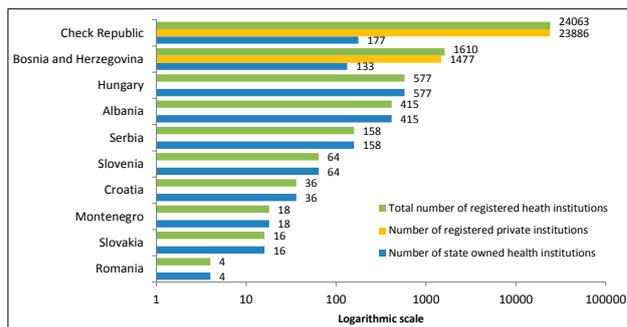


Figure 6. Number of health facilities by type of sector in the countries of South Eastern Europe

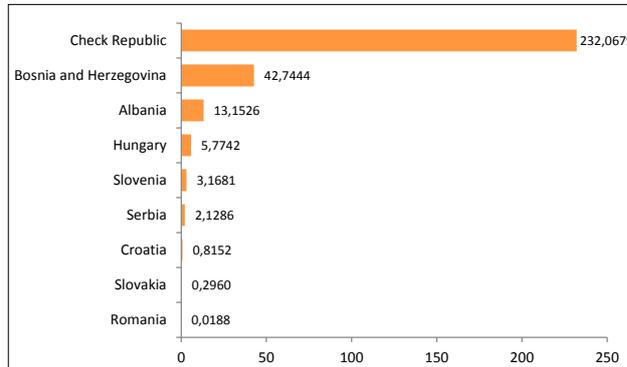


Figure 7. The density of health facilities per 100,000 inhabitants in countries of South Eastern Europe

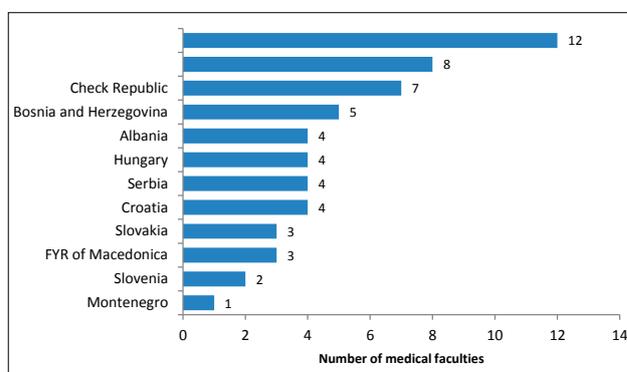


Figure 8. The number of medical faculties in the states of SE Europe

a purpose-created database. The data were analyzed by using Microsoft Office 2010 (8).

#### 4. RESULTS

##### Economic and organizational indicators

Of the total number of observed countries of South Eastern Europe (n=12), the highest gross domestic product (GDP) per capita has Croatia (\$ 9,000), followed by Slovenia (\$ 8,400), Serbia (\$ 8,200), while the countries with the lowest GDP are: Albania (\$ 3.700), Bulgaria (\$ 4800) and Slovakia (\$ 5,700). Bosnia and Herzegovina is located in the middle of the table, with its GDP per capita of \$ 7,500 (Figure 1) (22,23,24,53).

The highest total expenditure per capita has Slovenia (821%), Czech Republic (407%) and Croatia (394%), while Serbia has the lowest (7%), Albania (48%) and Bulgaria (81%). Bosnia and Herzegovina is located in the middle of the bottom part of the table with 85% (Figure 2) (22,23,24,53).

The largest expenditures for health care by U.S. dollar exchange rate has Slovenia, Czech Republic and Hungary, while the lowest have: Serbia, Albania and Bosnia and Herzegovina (Figure 3) (22,23,24,53).

The highest claims for health care per capita per U.S. dollar exchange rate have: Slovenia and the Czech Republic, while the lowest has: Serbia and Montenegro. Bosnia and Herzegovina is located in the lower part of the table (Figure 4) (22,23,24,53).

Of the total number of observed countries of Southeast Europe (n=12), Bosnia and Herzegovina has the highest claims for health care in the private sector (63.2%), followed by Albania (35.4%), Slovenia (25.1%) and Hungary (25.0%), while the lowest claims in the private sector have the Czech Republic (8.6%) and Slovakia (10.7%) (Figure 5) (22,23,24,53).

The largest number of state owned health institutions was recorded in Hungary (n=577) and Albania (n=415), while the data for the registered private institutions was available only for the Czech Republic (n=23,886) and Bosnia and Herzegovina (n=1477) (Figure 6) (22,23,24,53).

The highest density of health facilities per 100,000 citizens is found in the Czech Republic (232.1), followed by: Bosnia and Herzegovina (42.7) and Albania (13.2), while countries such as Romania (0.02), Slovakia (0, 29) and Croatia (0.82) are the countries with the lowest density. Data for other countries covered by the study were not available (Figure 7) (22,23,24,53).

*Health and educational indicators*

The countries with the highest number of public medical faculties are: Romania (n=12), Bulgaria (n=8) and Czech Republic (n=7). Following, Bosnia and Herzegovina (n=5), Albania, Hungary, Croatia and Serbia (n=4), Slovakia and Macedonia (n=3), Slovenia has two medical faculties and Montenegro has one medical school (Figure 8) (22,23,24,53).

In Macedonia, Albania, Croatia, Hungary and Slovakia all students who begin training in family medicine complete the specialization. Of the total number of participants in the education in family medicine in Bosnia and Herzegovina (n=126), 115 of them or 91.3% complete residency in family medicine. Of the total number of participants at the beginning of specialization in the Czech Republic a total of 90% of them complete the specialization, in Slovenia and Serbia 83.3% and 73.5% in Romania (Figure 9) (22,23,24,53).

In Montenegro, Serbia, Croatia and Slovenia specialization in family medicine lasts four years, unlike Slovakia, where specialization is 3.5 years. In the Czech Republic, Romania, Bulgaria, Hungary, Macedonia and Bosnia and Herzegovina specialization lasts three years, but only in Albania last two years (Chart 10) (22,23,24,53).

*Health indicators*

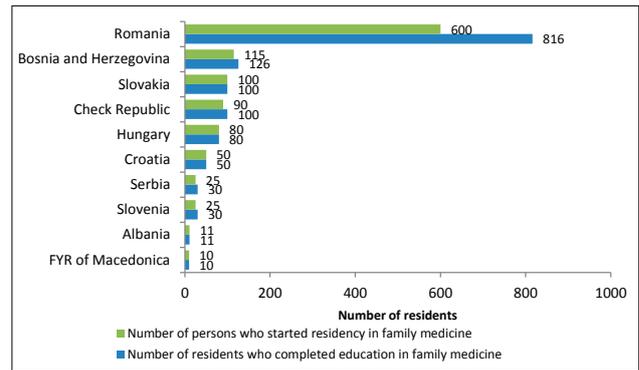


Figure 9. The number of participants and of those who completed residency in family medicine in the countries of South Eastern Europe

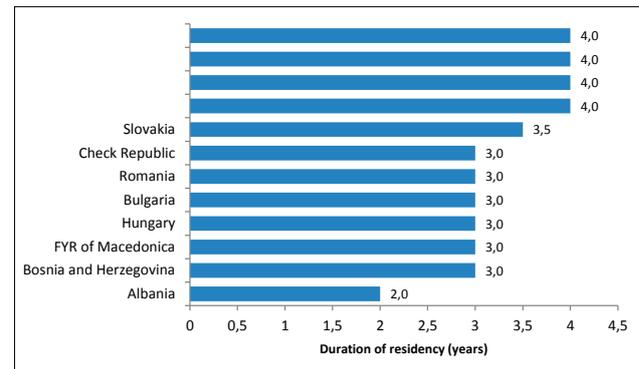


Figure 10. Duration of residency (years) in family medicine in the countries of South Eastern Europe

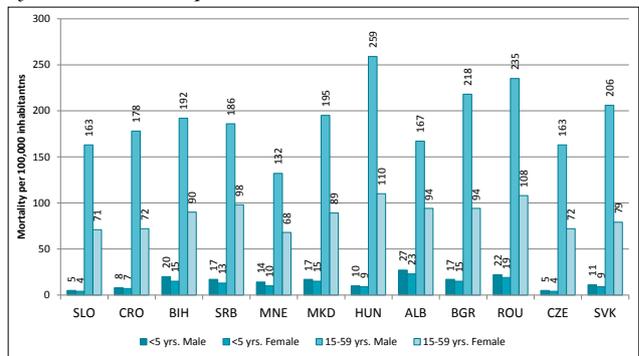


Figure 11. Mortality by the age groups per 100.000 inhabitants in countries of South Eastern Europe

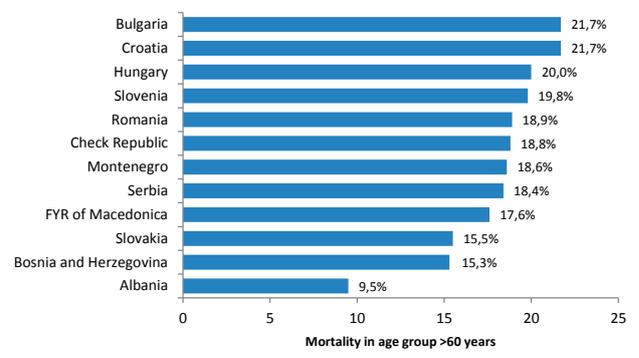


Figure 12. Mortality in age group over 60 years in countries of South Eastern Europe

The lowest mortality rate in the age group <5 years for males have Slovenia and the Czech Republic (5.0/100,000), while the highest mortality rates in this age group for males is in Al-

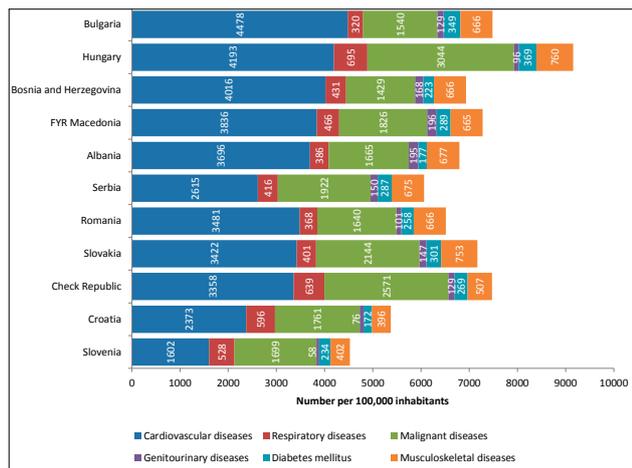


Figure 13. The most common diseases in the population at 100,000 inhabitants in the countries of South Eastern Europe

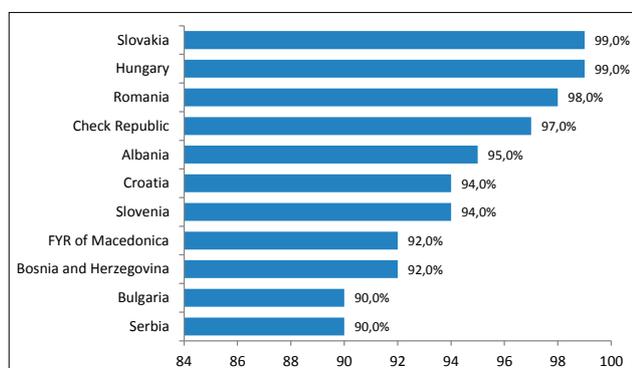


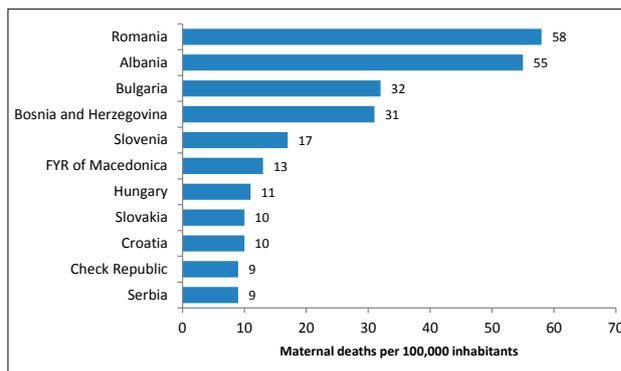
Figure 14. The coverage of immunization of children against rubella aged <1 year in the countries of South Eastern Europe

bania (27/100.000) and Romania (22.0/100,000) and Bosnia and Herzegovina (20.0/100,000). The lowest mortality rate in the age group <5 years for females also have Slovenia and the Czech Republic (4.0/100,000), while the highest mortality rates in this age group is in Albania (23/100.000) and Romania (19.0/100.000), and Bosnia and Herzegovina, Macedonia and Bulgaria (15.0/100,000) (22,23,24,53).

The lowest mortality rate in the age group 15-59 years for males is in Montenegro (132.0/100,000), Slovenia and the Czech Republic (163.0/100,000), while the highest mortality rates in this age group for males are in: Hungary (259/100,000), Romania (235/100,000) and Bulgaria (218.0/100,000). The lowest mortality rate in the age group 15-59 years for females, too, have Montenegro (68.0/100,000), Slovenia (71.0/100,000), Czech Republic and Croatia (72.0/100,000), while the highest mortality rates in this age group for is in Hungary (110/100.000) and Romania (108.0/100,000) (22,23,24,53).

In percent, the highest mortality in the population above 60 years of age was observed in Bulgaria and Croatia (27.1%), while the lowest in Albania (9.5%) and Bosnia and Herzegovina (15.3%) (Figure 12) (26, 27, 28).

In all the countries of SE Europe, the most common are cardiovascular diseases, with the highest rate of incidence in Bulgaria (4.478/100.000), Hungary (4.193/100.000) and Bosnia and Herzegovina (4.016/100.000). The lowest rate of developing cardiovascular disease are in Slovenia (1.602/100.000) and Croatia (2.373/100.000). The highest incidence rate of developing respiratory diseases is in Hungary (695.0/100,000) and



Graph 15. Maternal mortality rate per 100,000 inhabitants in the countries of South Eastern Europe

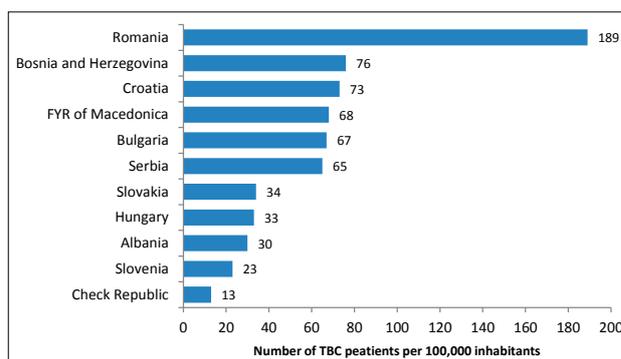


Figure 16. The prevalence of tuberculosis per 100,000 inhabitants in countries of South Eastern Europe.

Czech Republic (639.0/100,000), while the lowest rates are in Bulgaria (320.0/100,000) and Romania (368.0/100,000). The highest incidence rate of developing malignancies have Hungary (3,044.0/100,000), Czech Republic (2,571.0/100,000) and Slovakia (2,144/100.00), while the lowest rate are in Bosnia and Herzegovina (1,429.0/100,000) and Bulgaria (1540.0/100,000). The highest incidence rate of developing genitourinary diseases have Macedonia (196.0/100,000) and Albania (195.0/100,000), while the lowest rates are in Slovenia (58.0/100,000) and Croatia (76.0/100,000). The highest incidence rate of developing diabetes mellitus have Hungary (369.0/100,000) and Bulgaria (349.0/100,000), while the lowest rates are in Croatia (172.0/100,000) and Albania (177.0/100,000) (26, 27, 28, 32, 33).

The highest incidence rate of developing musculoskeletal disorders are in Hungary (760.0/100,000), and Slovakia (753.0/100,000), while the lowest rates are in Croatia (396.0/100,000) and Slovenia (402.0/100,000) (26, 27, 28).

Best coverage of immunization against rubella among children <1 year of age have Slovakia and Hungary (99%), while the lowest coverage is in Bulgaria (90%), Serbia (90%) and Bosnia and Herzegovina (92%) (Figure 14). The highest rate of maternal mortality are in Romania (58.0/100,000) and Albania (55.0/100,000), while the lowest mortality rates have Serbia and the Czech Republic (9.0/100,000), as well as Croatia and Slovakia (10.0/100,000). Bosnia and Herzegovina is located in the middle of the table with a maternal mortality rate of 31.0/100,000 (Figure 15) (26, 27, 28, 32, 33).

The highest prevalence of TB has Romania (189.0/100,000) and Bosnia and Herzegovina (76.0/100,000), while the lowest

rates are in the Czech Republic (13.0/100,000) and Slovenia (23.0/100,000) (Figure 16) (26, 27, 28).

## 5. DISCUSSION

Overview of the development of family medicine in the countries of Southeast Europe provides the possibility of understanding also the development of health care in these countries. Comparison of the system of education in undergraduate and postgraduate studies, the number of illnesses and the state of the global population health in areas that have been investigated also allow the comparison that is the basis for health care the system. Cross-section of the results provides insight into the further development of family medicine and the problems that should be focused.

The highest gross national income of the countries in the region has Croatia, followed by Slovenia, Serbia, Bosnia and Herzegovina which is located in the middle of the scale. Croatia unlike Bosnia and Herzegovina has developed summer tourism, which contributes to filling the budget, and thus more payments in the health sector. Croatia is the only country that is after the breakup of Yugoslavia held the growth of tourism (29, 30, 31).

Slovenia unlike the Croatia, by entering the European Union has lost markets and regulation that had before. Albania, Bulgaria and Romania are the countries affected by the transition after, the collapse of communism. Weak growth of production and investment have led to a low GDP.

When talking about the expenditure, the highest are in Slovenia, followed by Czech Republic and then Croatia. The preparations for Slovenia's entry into the European Union have led to the need for alignment of regulations with European standards in healthcare (11). Croatia also due to the aspirations for the European Union have a need to improve its health care system. Czech Republic, which is in the European Union prepares its health insurance system compatible with Europe. Serbia, Albania and Bosnia and Herzegovina as a countries in which the reconstruction of health system has not yet been completed, as well as harmonization of standards with EU standards has the lowest cost for health care in the region (32-35).

Demand for health services is highest in Slovenia, the Czech Republic and Hungary. European funds and education of the population have led to an increase in demand of the population for health services (12). Bosnia and Herzegovina is located on the bottom. The reason for these results lies in the fact that the majority of citizens is uninsured and only in emergencies seek doctor's help.

The largest number of medical institutions is registered in the Czech Republic, Bosnia and Herzegovina and Hungary. The reason for these results is the large number of private funds in the Czech Republic, unregulated market of health services in Bosnia and Herzegovina, insufficient investment in the health sector in Bosnia and Herzegovina, as well as a lack of personnel (24). Moreover big problem is the failure to report the exact number of visits to private institutions in order to reduce the tax on services.

The highest density of medical institutions is located in the territory of the Czech Republic, Bosnia and Herzegovina and Albania. The number of medical institutions in Bosnia and Herzegovina and Albania is inversely proportional to the number of quality health services and customer satisfaction with these services.

The largest number of educational medical institutions is in Romania, Bulgaria and the Czech Republic. Bosnia and Herzegovina is located at the 4 place. The number of students who choose to specialize in family medicine is the largest in Romania, Bosnia and Herzegovina and the Czech Republic. The reason for these results lies in the fact that the number of physician specialists in deficit and that a larger number of new family medicine doctor (12).

Period of residency in family medicine varies depending on state in which residency takes place.

The mortality rate of children under 5 years is highest in Albania, Romania and Bosnia and Herzegovina and the lowest mortality rate is in Slovenia and Croatia. The reason for these results is associated with improper parenting, lack of parents education as well as poor health care. The lowest mortality in the group of 15-59 years has Montenegro and Slovenia. The reason for this is a good standard, health promotion, as well as regular health check-ups in health care institutions. The highest mortality rate in this age group have Romania and Serbia. The reason for this situation are factors such as population migration, poorly monitored and planned pregnancies, poor health care, poor health and safety, etc (30). The population that has the highest mortality rate is over 60 years old and most are represented in Bulgaria and Croatia. Factors that are the most common causes of death are obesity, cardiovascular disorders, cancers.

The most common diseases are cardiovascular diseases, and their number is proportionate in all the neighboring countries. Has the highest rate of Bulgaria, Hungary and Bosnia and Herzegovina. The reason for this is Improper diet, lack of enforcement and poor prevention of cardiovascular disease as well as a little sports. Countries that have been developed such as Croatia, Slovenia and the Czech Republic have the lowest rate of cardiovascular disease.

The highest rate of respiratory diseases has Croatia and Slovenia. The reason is that these are developing countries and the air pollutants are increased. Countries in transition such as Bulgaria and Romania have the lowest rate, due to the regulated production and reduced factors that lead to respiratory diseases.

Injuries of the musculoskeletal system are most present in Albania and Serbia. The reason lies in the reduced road and workplace safety because the work equipment is outdated and poorly inspection of safety at work (16).

Immunization against rubella is the best in Slovakia and Hungary. The reason for this lies in the fact that they implemented numerous educations of the population under the auspices of the European Union (12). The minimum coverage is in Bulgaria, Serbia and Bosnia and Herzegovina. The rate of maternal mortality is the highest in Romania and Albania, while it is lowest in Serbia, the Czech Republic, Slovakia and Croatia. The reasons for reduced mortality is prevention and education as well as births in hospitals (24).

The prevalence of TB is highest in Romania and Bosnia and Herzegovina. A large number of Roma citizens is not insured. Poor living conditions have led to an increased number of patients suffering from tuberculosis (24). Slovenia and the Czech Republic have the lowest incidence of tuberculosis (26, 27, 30). The prevention, inspections and standard of living have led to a small number of patients.

## 6. CONCLUSION

Results indicate the failures and shortcomings of health care organizations in Southeast Europe. Example of the most common diseases, quality of care, the number of health facilities and the number of doctors who are located in a particular area of the country compared to the rest of the region. The number of health facilities in the area would have to be reduced to the norms of the European Union as in Croatia and Slovenia. The biggest stumbling block is the funding and low gross national income. Terms of payment, insurance and levels of health care have to be in accordance with European standards and thus to economic development of the country to improve health care. Number of family medicine doctor must be increased and provide an incentive for choosing specialization in family medicine. The introduction of new technologies to diagnose diseases is necessary to promptly diagnose the disease and reduce the inflow of patients to secondary and tertiary levels of health care. In this way the savings in the budget will be increased. The modernization of information systems and connectivity in a single whole would reduce the number of patients waiting as well as the issuance of findings. Prevention of diseases that are most common is the most important item, since chronic disease are one of the major problems of family medicine. Networking of doctors and pharmacies will facilitate prescribing a sufficient number of recipes would improve the management of chronic diseases. Education of patients suffering from chronic diseases is very important because the proper lifestyle can reduce the consumption of medications and thus lead to a decrease in cost. The 24 hours operation at the level of family medicine would lead to a reduction in spending on secondary and tertiary levels and significantly improve the level of health care and citizen satisfaction .

CONFLICT OF INTEREST: NONE DECLARED.

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