CURRENT TOPIC

UDC: 33:61]:614.2
DOI: 10.2298/VSP120205002S

Health care economics in Serbia: Current problems and changes

Ekonomija zdravstvenog sistema Srbije: tekući problemi i promene

Sanja Stošić, Nevena Karanović

Health Care Management, Graduate School of Business Studies, Megatrend University, Belgrade, Serbia

Key words:
health care; insurance, health; serbia; economics.

Ključne reči:
zdravstvena zaštita; zdravstveno osiguranje; srbija; ekonomski faktori.

Introduction

One of the fundamental rights of every human being is to enjoy "the highest attainable standard of health" [1]. Achieving better health requires no only adequate medical knowledge and technologies, laws and social measures in the field of health care, but also sufficient funding for fulfilling people's right to health. However, economic crisis has left every community with limited possibility of investing in health care and forced them to use the available resources more efficiently. This is the reason why health financing policy represents an important and integral part of the health system concerned with how financial resources are generated, allocated and used.

Development of new drugs and medical technologies, population aging, increased incidence of chronic diseases as well as the peoples' rising demands from health care providers lead to a constant increase of health system costs worldwide. In these circumstances, countries in transition, like Serbia, face difficult challenges in financing their health systems. Current economic crisis and budget constraints do not allow the Government to simply allocate more public revenues for health and solve the people's expectations by increasing the spending. Instead, Serbia is forced to start reforms to provide a more efficient health system. The reform processes are positioned within the wider context of European integration and public administration reforms. This paper provides a short description of the health care system in Serbia focusing on the healthcare economics and reforms and their influence on financial sustainability.

System of Obtaining Funds for Financing Health Care in Serbia

There are several main models of healthcare, depending on how the funds are collected: the Beveridge model, the Bismarck model and the Modified market or Consumer sovereignty model (Private Insurance model) [2].

Beveridge model originates from Britain's National Health Service. Health care is financed by the government trough tax payment and it covers the entire population. Doctors may be government employees or may work in privately owned hospitals and ordinations, but are always paid by the government. This system prevailed in Northwestern Europe, i.e. in the UK, Ireland and Scandinavia and in Southern Europe, i.e. in Spain, Portugal, Italy and in Canada. Similar health care funding was used in former USSR and Eastern block countries, but with much less independent providers, and without private practice. It is called the Semashko model.

Bismarck model is based on a premium financed social insurance system with a mixture of public and private providers. Funding is compulsory by employers and employees. Originally, it was not aimed at "universal coverage" because a right to health service was associated with labour status. Nowadays, it is based on the principles of solidarity and covers almost the whole population in many countries. Such type of health insurance represents an alternative form of taxation, because of its linkage to earnings and its detachment from benefit. However, it is more politically attractive than general tax because revenues are directed to health care. The Bismarck social insurance model was current in many Western European countries, e.g. Germany, France, Austria, Switzerland and Benelux.

In the Modified market or Consumer sovereignty model funding of the system is based on premiums paid into private insurance companies. In this model health is viewed as a commodity and ill health as an insurable risk. The great majority of the providers in this model belong to the private sector and the level of health care is directly connected with the cost of premium. This model in its pure form exists only in the USA.

Correspondence to: Sanja Stošić, Health Care Management, Graduate School of Business Studies, Megatrend University, Goce Delčeva Street, 11 070 Belgrade, Serbia. E-mail: stosicsanja@gmail.com

Rising costs of health care make a substantial burden to finance it at the desirable level, even for the high-income countries, so actual health care systems have more or less elements from different models. For instance, in Germany, the Bismarck system of compulsory insurance is prevalent, but it cannot cover health care expenses and some funds have to be transferred from the general budget, like in Beveridge model. In Norway, the system is financed from the budget, but because of the long wait for some free services, increased use of a parallel private market is planned. In USA there is mostly a private insurance system, but health care reforms allow free health care for some categories of people, like in the Beveridge model [3,4].

A former socialist Yugoslavia's health care system was unique among the European socialist countries in terms of financing, as it was financed through a compulsory social insurance (kind of Bismarck model), but the access to health care was a constitutional right of all citizens. However, the provision of service was more like in the Semashko model, with physicians as salaried state employees [5]. Private practice was prohibited soon after World War II. Political changes in former Yugoslavia allowed it again in 1989 within the Law of Individual Work [6]. After the breakdown of Yugoslavia, Serbia basically kept the same system, but also established some new laws on health care regulating conditions for activities of private enterprises in the field of medicine, dental care, laboratories and pharmacies. By the Current Low on Health Care [7] (2005, changed in 2012) private health care providers are not the integral part of the public health system, but may be included in by contracting. However, there is a short list of such services limited to those which are deficient.

Public health system is mainly financed by the Republic Health Insurance Fund (RHIF). It collects revenues from obligatory insurance, which represent the largest source of its incomes (about 70%) and distributes them to health providers. Though the health insurance system has many potential advantages, this model of financing may not be independently sustainable if the income from insurance does not cover all health care costs. In Serbia, as in many other countries, additional funds must be transferred from the general budget, and some services have to be paid by out of pocket money. It is usual that state or local authorities cover the costs of construction and maintenance of buildings, purchase of major equipment, epidemiological control, medical staff training and research. Funding of staff salaries, medical supplies, and medicines is under the jurisdiction of the RHIF and/or the Ministry of Health (MoH). Except for MoH, regional and local governments, a small part of the funds for health care is provided by the Ministry of Defence, Military Health Insurance Fund and the Ministry of Justice.

Serbian Health Insurance Fund is facing a difficult financial situation in recent years. One of the essential problems is the lack of adequate revenue collection. Economic downturn has led to a high rate of unemployment and low average salary, so the basis for taxation is small. Contributions are high, comparable to those in the European Union (EU), because there is an effective social tax on wages of about 36%, including health insurance, and pension insurance. Even continuous decrease of health care insurance rate, from 19.4% in 1991 to 12.3% since 2004 [8] was too much of a burden to employers, so many of them failed to pay compulsory contributions to the RHIF. Tax evasion has left a lot of employed people and their families' uninsured in the year 2012. In some cases, faced with the workers protests, the government decided to extend their insurance despite the fact that employers did not pay for it. Additionally, the number of insured persons, in accordance with the Law on Health Care Insurance, is increased by more than one million persons such as refugees, exiled persons, temporarily displaced persons from Kosovo and Metohia. They benefit the equal right to health care, and the government is obliged to pay for it from the state budget. According to the official data, the ratio between the insured non-employed and employed persons rate was almost 50 : 50 in 2010 (Table 1) [9]. As the employment rate in Serbia continued to decrease, this ratio is going to become more adverse.

Table 1

Number of health insured persons in Serbia in 2010

Type of health insurance	Number of persons	%
Employed persons*	2,875,243	42.01
Self-employed*	287,214	4.20
Farmers*	320.771	4.69
Unemployed persons	95.358	1.39
Retired persons	1.895.397	27.69
Other	1.370.015	20.02
Total	6.843.998	100.00

***Persons who actually earn funds for insurance**

Private funding through official copayment is practically irrelevant source of financing, because of very low prices and the wide range of persons excluded from this obligation (elderly over 65 years, children, pregnant women, persons with disabilities, unemployed and recipients of social welfare benefits).

Serbian health care has been severely under-funded for many years and consequently, equipment and facilities were not modernized. In the last twelve years, Serbia received multiple international support, mainly earmarked for capacity building (improvement of buildings, medical equipment and education) and to reform the way of health system functioning. For instance, European Union supported health care in Serbia since the year 2000 with more than 100 million Euros [10] and several soft loans were given from the World Bank (WB) and European Investment Bank (EIB) for a project with the similar purposes.

Expenditures for health care in Serbia

Data on expenditures on health care in Serbia differs, depending on the source. According to the World Bank, the total (public and private) health expenditure in Serbia accounts for about 10.4% of gross domestic product (GDP) in recent 4 years [11]. Serbia spends a larger share of GDP only for financing pension expenditures. It is a relatively high percentage, only few European countries spent more of GDP on health in 2010 (The Netherlands, France, Germany, Switzerland, Denmark, Austria, Portugal, Belgium, Bosnia and Moldova). However, Serbian GDP is significantly smaller than in the majority of European countries, so the actual amount *per capita* is low (only Russian Federation and some former members of USSR, Bosnia, Romania, Bulgaria, Macedonia and Albania spend less than Serbia). For comparison with other countries, when this amount is adjusted for purchasing power parity Serbian expenditures *per capita* are around half of the average of the new EU members, and about a sixth of that of the EU-15 [12]. An increasing trend of total health care spending *per capita* was clearly present during last decade world-wide. In Serbia its level reached a maximum of 673 US dollars (USD) in 2008. Since that time, mainly because of the global economic crisis, the GDP in Serbia declined, and so did the total health care spending *per capita* which amounted 546 USD in 2010 [11, 13]. Projections for the future do not predict increase of public funding for health care [14].

For many years there was no exact evidence or even reliable assessment on private expenditures on health care and current data are based on estimation from the household budget survey [13] because private funding is almost completely based on out-of-pocket money. There are two types of out-of-pocket patient payments: official copayments and informal (unofficial) patient payments. Official copayments for services in public health system in Serbia are very modest and do not represent the financial burden for patients. However, in Serbia, like in many low- and middle income countries, informal payment may create an access barrier to health care for the patients who cannot afford to pay. These expenditures mainly include buying of medicines which are not on the positive list and use of private health care services [15, 16]. Private Medical Chamber reported more than 20 million services *per* year estimating that more than 50% of the population use them, mainly for dental and specialist care and diagnostics [17]. Possibility for doctors employed in public health system to additionally work in private facilities made private expenditures more pronounced. As some measure for control of funds flow in private sector, providers are obliged to share fiscal invoices with patients.

In recent years, the flow of funds through the health system in Serbia is monitored by the National Health Accounts (NHA). Development of this institution was supported by MoH and financed by the World Bank, and the first national health accounts was produced at the beginning of 2006. Among the main challenges to deal with for NHA is weak transparency in public and private financial flows, particularly informal payments [15]. NHA assessed that private spending on health, including under-the-table payments to providers, was significantly larger than reported from official statistical data. It was estimated that health insurance covers approximately 61.9% of the total health care expenses, and 38.1% of payment is additional out-of-pocket money. Proportion of expenditure that can be attributed to private spending is much larger than in the EU making health care less accessible to the poor.

Public funds for health care are currently allocated on the basis of the number of staff and/or beds at health facilities. In 2010 the total number of public health institutions in Serbia was 375 which included primary health centers (158), general hospitals (24), specialized hospitals (24), clinical centers (4), clinical-hospital centers (4), public health institutes (23), pharmacies etc. with 122,695 employees (114,432 permanently employed). The total number of hospital beds in 2008 was 39,660 (540 *per* 100,000 people) but the reduction to 525 *per* 100,000 was planed. It is less than European average of 570 per 100,000. About 18% of employees are medical doctors, 35% nurses, 21.5% other health workers (pharmacists, dental doctors, lab staff, etc.), and 25.5% are workers in administration and logistics. There were 281 medical doctors employed in public health per 100,000 people (European average was 321 *per* 100,000). However, according the number of licensed medical doctor registered at Doctors Chamber, which included and doctors in private practice, this number was 387 per 100,000.

About half of medical doctors from the public health care facilities are employed in hospitals [18, 19]. The number of dental doctors in public health care system is relatively small because the financing of dental care is limited only to children, students, pregnant women and some special categories of patients. Facing inherited problems the MoH made the action plan for building of human resources to meet international standards. Human resources strategy was not appropriate for decades and education policy was not coordinated with the needs of health care, so the number of unemployed doctors was constantly increasing (about 2000 medical doctors and 1200 dental doctors were looking for the job in the health sector in 2012). At the same time, there was insufficient number of some specialists (radiologists, anaesthesiologists, cardiac surgeons, etc.) [20, 21]. Low salaries and high unemployed rate create an incentive for doctors to emigrate.

The largest proportion of RHIF's expenses is designed for the salaries of employees in the public system. In accordance with the effort to constrain public spending, the share of total expenditures for employee's salaries decreased from 61.20% in 2008 to 56.21% in 2010 [19]. Divergences between wages of different medical professions (e.g. specialists, general practitioners, pharmacists, nurses) are small and the doctors' salaries are among the lowest in Europe [12]. Salaries for medical staff represent the greatest part of the health services expenditures in many European countries, including EU. However, in these countries gross salaries of employees in health care are much higher than countries average, while, in Serbia, as in other Western Balkan countries, they are lower.

The structure of RHIF's expenditures in recent years has been almost the same: generally, more than 50% of funds are directed towards secondary and tertiary health care, almost 25% towards primary health care and more than 12%

are expenditures for prescribed drugs. The rest include all other expenditures (rehabilitation, dental care, sick leave benefits, etc.) [21].

Current efforts to achieve financial sustainability

Expenditures for healthcare in Serbia absorb a large share of GDP and there is no fiscal space to increase public expenditures, especially in current economic situation [22]. Despite the fact that the needs were recognized, from 2009 to 2012 less funds from the budget were always allocated than for the real needs of people without insurance. Some drug wholesalers also bear the responsibility for the financial problems in the health system.

Since 2010 some of them started the "inflating balloon", similarly to the other institutions on the planet in financial crisis – the money (they have been receiving from the pharmacies with a grace period of three months) were given to the producers very late, even up to a year, or more. This put the pharmaceutical industry in Serbia in a serious problem so producers stopped with the drug delivery to the health institutions.

As there is practically no possibility for the better financial support of the health care from the state budget, it has to be done by reforming the system. From the economical point of view, there are two essential ways to achieve financial sustainability: increasing revenue collection and allocating the available resources more efficiently.

Compulsory prepayment of health insurance with the controlled pooling mechanisms by RHIF is planned to continue to be the major source of funds for health care. Avoidance of insurance premium payment was identified as a serious problem. The practical solution for improvement of efficiency of revenue collection may be in increasing the financial discipline by imposing new laws on punishing tax evasion including evasion of compulsory insurance contributions.

Public health system had a chronic debt which continued to increase annually. For many years, RHIF revenue collection from obligatory insurance was less than expected, and the government has not always made adequate provisions for its contributions in respect to non-payers [8]. There is no available exact data on the level of the deficit and the only available information is from the statements published in press that contributors owe to RHIF more than 1,000 million Euros [23, 24]. This situation, low income from insurance payment and insufficient transfer of funds from the budget, on the one hand, and the extensive package of services covered by health insurance, on the other, commenced a cycle of debt in which RHIF failed to pay on refund to hospitals and other providers, who in turn delayed payment to suppliers such as drugs and utilities companies. It resulted in shortage of some drugs and patients were often forced to purchase them in private pharmacies. In recent years, the debt continued to increase, so with about 26 billion dinars (RSD) or almost 300 million USD, health sector accounts for the substantial part of Serbia's public debt in 2012. Of the total debt, hospitals owe more than 13 billion to the pharmaceutical industry, while the remaining 13 billion is to be paid by RHIF for the prescribed medicines distributed by pharmacies.[25] Recently, efforts to improve financial sustainability of the RHIF were made by the Government. Some agreements on debt reprogramming and 50% discount are made between the representatives of Government and pharmaceuticals suppliers.

After declaring the debt of health sector to the providers as public debt, the repaying of the rest (a half the amount of 26 billion RSD) was agreed in Parliament [26]. This means that in 2013 RHIF could start without burden of a huge chronic debt. As pharmaceutical procurement and pricing system had great impact on RHIF expenditures, to avoid further debts, a new system of centralized procurement will be established. It is expected that it could be the way of preventing the corruption and to save the funds by achieving the lower prices of pharmaceuticals negotiated with suppliers [27]. According the World Health Organization (WHO) estimates, appropriate use of medicines could save countries up to 5% of their health expenditure. It means prescribing equally effective but cheaper drugs if available, avoidance of drugs overusage (especially antibiotics and injections), better storage and wastage and appropriate procurement [28].

However, to achieve financial sustainability of the RHIF, additional funding may be needed. Financial planning in respect to contribution rates was not appropriate and though the rates for health insurance were high, they are not set according to an actuarial analysis of expected costs. They tend to be based on a combination of estimates of desired revenues (which may not reflect the actual revenue that can be feasibly collected) and the assessment of the political acceptability of adding to already high tax burden [12]. The WHO recommended some innovative financing of health care for countries world-wide. Taxes on products harmful to health may have dual positive effect by reducing consumption and increasing funds. Since 2006 one dinar of the tobacco excise tax is already allocated to the MoH. Additional funds from taxes on alcohol may be collected. Some countries are also considering taxes on other harmful products, such as sugary drinks and foods high in salt or transfats [29, 30]. Serbian Government may implement those that best suit the economy of the country and are likely to have political support. Serbia currently has a kind of paradox, since the Government subsides the price of the unhealthiest type of white bread, while the bakery products made of integral grain are much more expensive.

Health is one of the most important subjects that require global solidarity. High-income countries and the international community financially supported the Serbian health care. Donations currently come from various sources and there is no exact data on the purpose and total sum. Identifying the priorities and making action plan for using them could considerably improve their positive impact and even contribute to bring in more funds in future.

Efforts to improve efficiency and productivity through payment reform

Collecting sufficient funds is essential, but it could not guarantee sustainability and quality of health care if the resources are not used appropriately. From the economics

point of view, the intention of reforms is to allocate resources more efficiently, which means to distribute existing funds for health in a different way and achieve better outcomes. In the long-term, the increase of preventive services is expected to result in decreasing the need for more expensive diagnostic services and hospital treatment. Planned changes in treatment behaviour should lead to increased productivity and reduced costs, so some expenditure may be shifted from staff and utilities to medicines and supplies. Contracting and change of methods of payment may also be valuable tools to improve efficacy.

The introduction of the capitation system into the primary health care was the first major payment reform measure. Primary health care in Serbia is provided in out-patient centres, known as *Dom zdravlja* (DZ) by three types of doctors: general practitioners, paediatricians and gynaecologists. The introduction of the concept of selected doctors, or "chosen doctors" at the primary level is supposed to enable better coordination between different levels of care, but also to promote health and preventive services, as opposed to the current system which is dominated by a clinical (curative) approach [31]. Capitation as a method of payment was recommended by the World Bank which conducted a cost and efficiency study of 147 DZs [32]. The study showed a very little variation in the cost-efficiency of DZs, because expenditures were largely pre-determined by the prices of input factors, mainly personnel wages (70% of total cost) which were set according the line budgeting and not according the outcomes.

Payment *per capita* means that doctors should be basically paid by the number of patients who choose them. It started in 2012 and according the capitation formula, the main additional criteria for calculating salary include prescribing (the cost of drugs prescribed), the number of actually treated patients and the number of preventive and screening examinations.[33] Introduction of capitation should motivate doctors to provide more preventive exams and to reduce the need for more expensive diagnostic and therapeutic procedures, to prescribe less expensive medications, and to avoid unnecessary laboratory tests. So far, there have been no estimates of its functioning, except for the coverage of registered insured persons with chosen doctors.

The increase of salary according the proposed criteria is limited to 4% maximum, so there is a suspicion as to how effective it would be in changing the behaviour of medical staff.

Reforming hospital payment mechanisms is one of the areas where substantial efficiency gains could be made. Expenditure on hospital services is one of the largest shares of total health care spending in Serbia, as well in other European countries [34]. Both rich and poor countries face similar challenges with regards to ensuring efficiency and value for money through hospital payment mechanisms. These mechanisms mainly include global budgets, fee for service, daily rebates and case payments. Each of these modalities motivates providers' behaviour differently [35]. Many countries world-wide accept Diagnosis Related Groups (DRGs) as kind of case-based payment and it is the most common mechanism for reimbursing hospitals in Europe. DRGs are classification systems that group patients according to the consumption of resources required for their treatment and their clinical characteristics. Originally, DRGs are developed in the USA and its use as an instrument for cost containment for hospitals started in 1983. Many countries developed their most suitable variants (Australia, Germany, Switzerland, etc.) [36, 37]. Variables used to define DRGs are diagnosis code (principal and secondary), procedure code (i.e. surgical or non surgical), age, sex and discharge status (released home, transferred to other hospital, death, etc). These classifications have to be changed frequently due to the use of new diagnostic and treatment procedures.

Current funding on the basis of the number of staff and beds does not motivate providers to improve efficacy, quality of care and health outcomes, so the Serbian Ministry of Health plans to reform the payment system. The Serbia's Health Care Development Plan 2010–2015 [18] includes change of the funding of secondary and tertiary care. Implementation of payment by DRGs is planned for acute inpatient care. Expectations from this financing model are provision of equality of all hospitals and patients, increase of efficacy and transparency when contracting health care services and basing payments on the best available data. Reforms are supported by the MoH and financed by the World Bank soft lone. A system developed in Australia ("Australia refined" – AR-DRGs) has been chosen based on the experiences of neighbouring countries and positive results in an initial pilot study for reporting purposes in six hospitals. DRGs introduction would be incremental: in the beginning the system is planned to be applied as an analytical coding tool, then for reporting purposes and only after several years as a hospital reimbursement method. Trainers for coding skills have already been trained in order to disseminate knowledge about the new system [38].

Payment according to DRGs means that hospitals are basically paid the average cost for a case. It establishes a transparent link between funding and activity which is absent under retrospective global budgets. Formula may include indirect costs such as teaching, or be adjusted to some specific cost in the area or other economic conditions.

Introduction of DRGs based payment in hospitals is expected to minimize the cost of hospital stay. However, DRGs payment motivates hospitals to reduce the cost per episode of hospitalization irrespective of outcomes and may lead to lower quality of service as a way of cost saving. It is very difficult to monitor and control quality of care because it is almost impossible to distinguish whether a bad medical outcome is a result of low quality of care or the severity of illness. To optimize the payments they get, hospitals may implement organizational change and to introduce utilization of new technologies and procedures, but also may skip some medically indicated tests and therapies, or over-provide certain services to put the patient into a higher-paying category. They also may discharge patients earlier than clinically appropriate and–readmit them, or not admit patients whose treatment costs are likely to be higher than the average. Studies of the impact of DRGs on hospitals behaviour

showed the increased rate of admission, classification of illnesses as more severe and shortened length of hospital stay in many countries (Sweden, Norway, Denmark, Germany, England, etc.). In the majority of European countries, the introduction of DRGs payment increased total hospital costs, partly due to classification of diseases in higher DRGs and increased efficiency. This system of reimbursement may have contradictory effects for different patients groups depending on the price incentives provided by different DRGs [39–41].

It can be supposed that the implementation of the capitation formula and the diagnosis-related groups can make the system more efficient, but only with an adequate system of control. It includes the quality monitoring and more administrative costs. Some studies in the USA showed that the savings on clinical resources were almost fully invalidated by higher administrative cost [42, 43].

Conclusion

Each country has a system of health financing that it has developed over decades and there is no universal single effective strategy on how to finance health. When introducing reform measures, possible factors such as culture and tradition, the way of living and legislative aspects may have an important impact on the structure and quality of health care.

The Serbian public health system is founded on equity and solidarity and despite the political and economic changes the idea of universal coverage for the extensive level of services was kept. Some services, like dental care were cut, but there are no plans for radical market oriented reforms. The entire population has the right to use a large package of services (prevention, promotion, treatment and rehabilitation) and virtually everyone is protected from severe financial risks.

Countries, in which entire populations have access to a large package of public health services, including Serbia, usually have relatively high expenditures for health care – more than 5–6% of GDP. Nevertheless, it is not enough even for the high-income countries that are commonly said to have achieved universal coverage actually to cover the whole population for 100% of the services available and for 100% of the cost – and with no waiting lists. In the report on health financing published in 2010 by the WHO [28] it is stated: "All health systems, everywhere, could make better use of resources, whether through better procurement practices, broader use of generic products, better incentives for providers, or streamlined financing and administrative procedures". This report pointed to the changes of the Serbian health care system which could improve its financial sustainability and efficiency.

REFERENCES

1. *World Health Organization*. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference; New York; 1946 June 19−22; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 19487 April 7. Washington, DC: The National Academies Press; 1988. p. 19.
2. *Lameire N, Joffe P, Wiedemann M*. Healthcare systems: An international review: an overview. Nephrol Dial Transplant 1999; 14(Suppl 6): 3−9.
3. *Mossialos E, Dixon A, Figueras J, Kutzin J*. Funding health care: Options for Europe. Buckingham – Philadelphia: World Health Organization, European Observatory on Health Care Systems Series. Open University Press; 2002.
4. *Magnussen J, Vrangbaek K, Saltman RB*. Nordic health care systems: Recent reforms and current policy changes. Berkshire, UK: European Observatory on Health Care Systems Series; 2009.
5. *Grielen SJ, Boerma WG, Groenwegen PP*. Unity of diversity? Task profiles of general practitioners in Central and Eastern Europe. Eur J Public Health 2000; 10(4): 249−54.
6. *The Socialist Republic of Serbia*. Law on personal work. Official Gazette of SRS in 1989, 54 / 89th (Serbian)
7. *The Republic of Serbia*. Health Care Act. Official Gazette 2005, 107 / 05th (Serbian)
8. *Vukajlovic S*. System of Financing Health Care in Serbia: Republic Health Insurance Administration between wishes and possibilities. In: *Damjanovic D*, editor. Toward Health Care Reform in Serbia. Belgrade: PALGO Centar; 2006. p. 14−8. (Serbian)
9. *Republic Institute for Statistics*. The structure of insured persons in the Republic of Serbia on 31/12/2010. Available from: http://www.zso.gov.rs/doc/statistika/zdravstveno/
10. *European Agency for Reconstruction*. EU support to health care in Serbia. Available from: http://ec.europa.eu/enlargement/archives/ear/sectors/main/documents/HEALTH_SERBIA_EN.pdf [cited September 2007].
11. World Bank. Data indicators. Available from: http://data.worldbank.org/indicator/ SH.XPD.OOPC.ZS [acessed 2010 June 24].
12. *Bredencamp C, Gragnolati M*. Financing in the Western Balkans: An Overview of Progress and Challenges. South East Europe Review 2008; 11(2): 151–84.
13. *Gajić-Stevanović M, Dimitrijević S, Vuksa A, Jovanović D*. Health care system and spending in Serbia from 2004 to 2008. (Serbian) Available from: www.batut.org.rs
14. *Republic of Serbia*. Draft Law on the Budget of the Republic of Serbia for the 2013. Available from URL: mfp.gov.rs/.../Predlog%20zakona%20o%20budzetu%20za%202013. (Serbian)
15. *Gajić-Stevanović M, Teodorović N, Dimitrijević S, Jovanović D*. Assesment of financial flow in the health system of Serbia in a period 2003-2006. Vojnosanit Pregl 2010; 67(5): 397−402. (Serbian)
16. *Stepurko T, Pavlova M, Gryga I, Groot W*. Empirical studies on informal patient payments for health care services: a systematic and critical review of research methods and instruments. BMC Health Serv Res 2010; 10(1): 273.
17. *Radivojevic B*. Half Serbians treated by private owners. UPKLS, Jan 2011. Available from URL: http://uplks.com/pola-srbije-lece-privatni-doktori
18. *Republic of Serbia*. Decision on Health Care Development Plan of the Republic of Serbia. Official 2010, 88/2010. Available from *URL:* http://www.lawscanner.org/index.php?option=com content&view=article&id=173:odluka-o-planu-razvoja-

zdravstvene-zatite-republike-srbije&catid=15:medicinsko-pravo-e-biblioteka-domai-zakoni&Itemid=10. (Serbian)
19. *Gajić-Stevanović M, Perišić-Rainicke D, Dimitrijević S, Teodorović N, Živković S*. Public Health Sector Workforce in Serbia and World Economic Crisis . Stom Glas S 2012; 59(2): 71−82. (Serbian)
20. *Republic of Serbia, Ministry of Health*. Decision on deficient medical fields in the Republic of Serbia, 2012. Available from: http://www.minzdravlja.info/downloads/2012/Februar/Februar2012OdlukaODeficitarnimSpecijalizacijama2012.pdf (Serbian)
21. *Karanovic N*. Implementation of the action plan for human resources in the health system of Serbia: facing inherited problems. Cah Sociol Demogr Med 2010; 50(3): 271−84. PubMed PMID: 21086765
22. *National Health Insurance Fund*. Financial reports for 2008. Available from URL: http://www.rfzo.rs/download/informJan_Dec2008.pdf (Serbian)
23. *Živanović K*. Aleksandar Vuksanović, Director HIF, answers to the Minister of Finance: I am not guilty as cash registers of Health Insurance Fund are empty. Danas, January 15, 2013. Available from: http://www.danas.rs/danasrs/drustvo/nisam_kriv_sto_je_prazna_kasa_zdravstvenog_fonda.55.html?news_id=251853 (Serbian)
24. *Spasojević VC*. Stanković: The cure has only the Government. Vecernje novosti June 20, 2012. Available from: http://www.novosti.rs/vesti/naslovna/aktuelno.290.html:385118-Stankovic-Lek-ima-samo-vlada. (Serbian)
25. TANJUG. Dinkic: Healtcare up most of public debt. 2012. Vesti 2012 June11. Available from: www.tanjug.rs/.../dinkic-healthcare-ran-up.
26. *Republic of Serbia*. The law of health care obligation to wholesalers to supply medicines and medical supplies and turning these commitments into public debt of the Republic of Serbia. Official Gazette 2012, 119/2012. Available from URL: http://urrgb.com/index.php?topic=5011.0 (Serbian)
27. *IHS Global Insight Perspective*. Serbian government intervenes to save pharmaceutical market and announces launch of centralized public procurement for healthcare. Available from: http://www.ihsglobalinsight.com/SDA/SDADetail21952.htm [cited 2012. November 28].
28. *World Health Organization*. The world health report – Health systems financing: The path to universal coverage. Geneva: World Health Organization; 2010.
29. *Leonhardt D*. The battle over taxing soda. New York Times 2010 May 18. Available from: http://www.nytimes.com/2010/05/19/business/economy/19leonhardt.html?_r=0
30. *Holt E*. Romania mulls over fast food tax. Lancet 2010; 375: 1070.
31. *Vuković D, Perišić N*. ASISP Annual National Report 2011: Pensions, Health Care and Long-term Care, Republic of Serbia. 2011. Available from: www.socialprotection.eu/.../asisp_ANR11 (Serbian)
32. *Cashin C, Koettl J, Schneider P*. Setting Incentives for Health Care Providers in Serbia. Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/10173/567080BRI0Box31ealth1Care1in1Serbia.txt?sequence=2.
33. *Republic of Serbia, Ministry of Health*. Decree on Amending the Decree on corrective coefficients, the highest per cent increase of the basic salary, the criteria for part of the salary which is realized on the basis of performance, and the method of calculating the salaries of health care facilities. Official Gazette 2012, No. 101, 23 October. (Serbian)
34. *Cylus J, Irwin R*. The challenges of hospital payment systems. Euro Observer 2010; 12(3): 1−3.
35. *Langenbrunner JC, Wiley MC*. Hospital payment mechanisms: theory and practice in transition countries. In: *Mckee M, Healy J*, editors. Hospitals in a Changing Europe. Buckingham: Open University Press; 2002. p. 112−24.
36. *Fetter RB*. Diagnosis Related Groups - understanding hospital performance. Interfaces 1991; 21(1): 6−26.
37. *Leister JE, Stausberg J*. Comparison of cost accounting methods from different DRG systems and their effect on health care quality. Health Policy 2005; 74(1): 46−55.
38. *Mathauer I, Wittenbecher F*. DRG-based payment systems in low- and middle-income countries: Implementation experiences and challenges. Geneva: World Health Organization; 2012.
39. *Kastberg G, Siverbo S*. Activity-based financing of health care: Experiences from Sweden. Intl J Health Plan Manag 2007; 22(1): 25−44.
40. *Busse R, Geissler A, Quentin W*. Diagnosis-Related Groups in Europe: Moving toward transparency, efficiency and quality in hospitals. Berlin: European Observatory on Health Systems; 2011.
41. *Geissler A, Scheller-Kreinsen D, Quentin W*. Do diagnosis-related groups appropriately explain variations in costs and length of stay of hip replacement? A comparative assessment of DRG systems across 10 European countries. Health Econ 2012; 21(Suppl 2): 103−15.
42. *Arrow K, Baily M, Börsch-Supan A, Gaber AM*. Health Care Productivity. London: McKinsey Global Institute; 1996.
43. *Kutzin J, Cashin C, Jakab M*. Implementing Health Financing Reform – lessons from countries in transition. Geneva: World Health Organization; 2010.

Received on February 5, 2012.
Revised on May 27, 2013.
Accepted on June 5, 2013.
OnLine-First January, 2014.