Health care system and spending in Serbia

I Executive summary

The period of four years in implementing the National Health Accounts (NHA) in Serbia has resulted in increased transparency of financial flow in health sector. It was the first time ever that private sector of health care providers has been observed along with the public sector. The tables have been produced with indicators of health expenditures critical for functional comparison of health system in Serbia with health systems of other countries covering the period from 2003 to 2006.
Four years of observation of the financial flow in health sector alone would not be substantial for accurate analysis and estimation of future finance trends in health sector. However, some results indicate the following:

- Total expenditures for health in Serbia with 8% of GDP in 2005 were similar to expenditures in neighboring countries, such as Slovenia, Macedonia, Hungary and Montenegro[1].

- The greater participation of public sector financing sources within period from 2003 to 2005, starting from 5.66% of GDP in 2003 to 5.72% of GDP in year 2005, resulted in reduction of health care financing from private sources from 2.29% of GDP in 2003 to 2.26% of GDP in 2005, whereas the reduced participation of public sector financing of 5.70% of GDP in year 2006 resulted in increased participation of private health sector financing with 2.48% of GDP in the same year.

It was confirmed that Health Insurance Fund (HIF) was the major financing source of public health. In period from 2003 to 2006, participation of HIF as major health financing source shows constant rise – from 5.22% of GDP in 2003 to 5.33% of GDP in 2005, whereas its participation in 2006 drops to 5.30% in year 2006.
On the other hand, HIF has participated with 63% in 2003 and 65% in years 2004 and 2006 of total expenditures for health.

Although there is a trend of an increased allocation of finances from HIF to health sector, they seem to be insufficient due to several factors (more and more need of elderly population and more costs for introducing the new technologies). The situation does not differ much from the rest of Europe where National Health Accounts face great financial challenges as well[2].

Current blurred situation in private sector policy makers intend to overcome with implementation of new "Fiscal bill policy". From 1.06.2009 all private providers are going to be obliged to provide patients with fiscal bill that would make foundation for more transparency in activities of private providers.

[1] WHO: http://www.who.int/nha/country/en/ document NHA Ratios and Percapitalevels(Excel)
[2] Mosseveld, Cornelis, „International Comparison of Health care Expenditure", PhD thesis, 2003, page 2.

When comparing the participation of public and private financing sector in overall health financing in Serbia to the neighboring countries, it shows almost identical results (70:30) with the relation of public/private sector in Slovenia, Macedonia, Montenegro, Hungary, Romania and Slovakia. [3].

The regional health financing in period 2004 to 2006 shows certain consistencies. However, it was observed that within mentioned time frame HIF has financed the region of Vojvodina with funds less than average, whereas the regions of Eastern, Southeastern Serbia and Kosovo with Metohija were financed with more than average values.

The outpatient hospital care and inpatient care financing changed in period 2003 to 2006 in a way that more funds had been allocated to ambulatory health care with the percentage of 1.36% of GDP in 2003 that increased to 1.77% of GDP in year 2006.

This trend follows the projected priority of health policy makers with greater investment for ambulatory health care in Serbia**,** which is consistent with the objectives of consolidating the fiscal situation and corelate with EU 8 findings from WB paper „Health care Spending in the New EU member states".

Observation of allocated financing sources for health care in period 2003 to 2006 shows trend of constant reduction in finances for curative and preventive care. This trend is followed by increase in financing for rehabilitation, diagnostic and laboratory care as well as pharmaceuticals. Total costs for pharmaceuticals show growth from 1.69% of GDP in 2003 to 1.89% of GDP in 2006.

The increase of drugs consumption[4], and consequently the increase in costs for pharmaceuticals is global trend[5] that each country seeks to solve differently, although with not much success so far.

The worrying fact however is that not only the finances allocated for Public Health Institutes (HP.5) were reduced, but decrease of preventive services and occupational health services has been observed as well in period 2003 to 2006. The participation of

[3] WHO: http: http://www.who.int/nha/en/

[4] Hogerzeil HV.Promoting rational prescribing: an international perspective. British Journal of Clinical Pharmacy, 1995; 39:1-6., The rational use of drugs. Report of the Conference of Experts. Geneva, World Health Organization, 1985.; Promoting rational use of medicines: core components 2002. WHO Policy Perspectives on Medicines No.5, Geneva, World Health Organization, 2002.; Ronning M,et al. Problems in collecting comparable national drug use data in Europe. Berlin, Springer-Verlag.2003; Dukes MNG, ed. Drug utilization studies. Methods and uses.WHO, European Series No.45 .Copenhagen, World Health Organization, Regional Office for Europe, 1993; International Society for Pharmacoepidemiology, (http:// pharmacoepi.org); Quick JD, Rankin JR, Laing RO, O'Conor RW, Hogerzeil HV, Dukes MNG, Garnett A, (eds). Managing drug supplay. 2nded. West Hartford, CT, Kumarin Press, 1977; Ross- Degnan D, Laing RO, Quick J, et al. A strategy for promoting improved pharmaceutical use: the International Network for Rational Use of Drugs. Soc. Sci.Med. 1992; 35" 1329-41.

[5] *Boston Univ. School of Law Working Paper No. 06-36* , University of Queensland Law Journal, Vol. 26, No. 1, p. 111, 200, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=932903#

0.74% of GDP in 2003, 0.68% in 2004 and 0.65% in 2005 was reduced to only 0.64% of GDP in year 2006.

The analysis of total expenditures in primary health care of pre-school children, women and adults opens questions of further exploration of preventive and curative care and comparison between regional distribution of health care services with the average in Central Serbia, Vojvodina and Republic in general. Furthermore, the more profound analysis should be needed bottom up from the single institutional level, enabling corrections and planning in future system of health care.

The growth of the expenditures for the employed in health sector for period 2004 to 2007 shows slower trend than total revenues increase that is complementary with planned decrease of expenditures for the employed in HIF. Revenues in period 2004 to 2007 increased in total of 85.87%, whereas gross salaries have increased in total of 77.91%.

In 2007 the share of salaries represented 58.14% of the total revenues what was similar to EU8 countries. Although salaries of employed in health sector grew for more than 20% annually, they are still 22%[6] lower than the national average what is very different in the EU8 and EU15 countries[7].

An analysis has indicated significant progress achieved in the area of health status indicators as the most important final outcome of the health system performance gratifying efforts and resources invested in this sector. However, it is observed that the indicators still significantly differ from the EU population indicators and that more can be achieved in the area health indicators of vulnerable population, primarily Roma.

When looking into main causes of mortality of population, trends between Serbia and EU are still the same but the inevitable conclusion is that investments into prevention and changes of life styles must be increased.

The positive changes are observed in decreased number of referrals from primary to secondary and tertiary levels of health care indicating improvements in organization and referral protocols.

[6] Schnaider, Final NHA report , October 2007
[7] Health Care Spending in the New EU Member States, WB Working Paper., 2003

II Introductory remarks

Health care sector of Serbia was one of the sectors that were affected by the waste set of reforms commonly branded as a transition process. Reforms started after a decade of destructive and difficult events that started after the breakdown of former Yugoslavia, followed by wars, hyperinflation, sanctions and NATO bombing.

Serbia, like other parts of former Yugoslavia, has inherited a health system financed by compulsory health insurance contributions, based on 12.3% payroll taxes. The system was used to provide easy access to comprehensive health services for all population.

Unfortunately, political problems that shaped the economic performance, has resulted in a substantial health system resources reduction. The viability of the system was challenged by the reduced financial basis of health insurance contributions where two million employed financed seven million insured. A cumulative effect of all this events caused significant deterioration of the health status of population widening the gap between the Serbian and the EU population.

Gaps between expenditures and revenues in the system have been met through increased out of pocket payments, by already physically and materially vulnerable population. Marked lack of funds has resulted in low salaries of medical workers, poor investment in the infrastructure and equipment of medical facilities and a large deficit in the Insurance Fund, created by health-care costs. The system was suffering from the lack of medicines and medical material, bribery and corruption, transfer of patients and a part of equipment from the state to the private health sector etc. All this has jeopardized accessibility, the basic principle of the health care of the population..

For all these reasons Serbian Government has found itself, more than ever in need for proper planning and organization of healthcare financial funds. The highest levels of Serbian government have publicly declared that reforming the health system was a national priority. In August 2002, representatives of Ministry of Health (MoH), Health Insurance Fund (HIF) and Institute of Public Health (IPH), articulated an overall health vision for the health sector in Serbia.

The ambitious reform aimed to reform and put the focus on the primary health care service and preventive measures versus curative, in order to decrease rate of preventable diseases and also reduce heath expenditures. It also aimed to reconfigure hospitals to more effectively respond to the needs of patients, to develop new basic package of health services that will be in balance with the available resources. Changes on the side of the health system financing were supposed to change the flow of money so that it doesn't follow the existing structure and staff but patient's movement through the system. Capitation was chosen as an option for the primary health care and the model of Diagnostic Related Groups (DRG) for payments in secondary health care. One of the

important goals was also integration and better oversight over the provision of the private health care services.
One of the biggest problems at the beginning of health reform was a deficit of reliable data that would build the baseline and enable evidence-based policy making and monitoring within the health sector.
Policy-makers have realized that if they wanted to develop policies to enhance the performance of their systems, they needed reliable information on the quality of financial resources used for health, their sources and the way they were used. As National health accounts (NHA) could produce evidence to help policy makers and health managers to understand their health systems and improve their performance, Serbian Government decided to implement NHA in Serbian health system.

With NHA methodology policy makers expect to monitor and evaluate:

1) who pays how much;
2) how much money goes to where;
3) what areas of reform are consistent with the objectives of consolidating the fiscal situation;
4) health spending pattern in Serbia with other countries

Work on development, implementation and institutionalization of NHA, as a tool to help policy makers to better manage their health resources started in the end of 2004 under Ministry of Health project called: "Serbia health project," financed by the World Bank.
The formation of new department for NHA production in the Republican Institute of Public Health represents a major reform accomplishment, after WB project was finished. NHA became an assigned programmatic job of MOH, with the new established financial line for NHA production.

So far the NHA Team has produced five NHA tables for 2003, 2004, 2005, 2006 year and five NHA basic tables for public sector for 2007, analysis of public ambulatory care, basic cost of illness account, study called "National health accounts in Serbia in period from 2003-2006", as well as 57 health indicators requested by World Health Organization (WHO), for every observed year.

In this paper indicators obtained from NHA data will provide evidence on spending patterns for all sectors – public and private, different health care activities, providers, and country regions. Information will be used to make assessment if changes in expenditures reflect the main strategic orientations on the reform of the health system and compare results with those of other countries.

III Health status of the population

The health status of the population in Serbia in late nineteen eighties began to deteriorate as compared to the post-war trend of continued improvement of health indicators including a drop in the mortality rate, an increase in life expectancy, a reduction in infant mortality rates and deaths caused by infectious diseases. The cumulative effect of the negative factors to which the population was exposed over the last decade of the 20th century is the underlying cause of the poor health status of the population.
The situation was additionally aggravated by an increased number of internally displaced people and refugees.

Life expectancy at birth is one of the basic indicators of the health status of the population and unfortunately it is still showing a significant gap between Serbian and EU population. Although smaller difference than in the case of Serbia, the most of EU8 countries have on average 5 years shorter life expectancy than in EU15 group.

Table 1. – Life expectancy at birth [83]

	Republic of Serbia		EU
	2005	2007	2005
Total	73		78.7
Men	70	70.8	75.6
Women	75	76.2	82

Another important indicator, **infant mortality rate**, was seriously affected by the years of crises during 90-ies. From 14.6 in 1991 it dropped to 8.0 in 2005 but is still much higher in comparison with the EU15 countries (4.6). The most frequent causes of death are respiratory distress and congenital anomalies. It should be also noted that the rate varies in different districts – while it is 4.5 to 5.8 in Vojvodina, it reaches 12 in Jablanicki and Pirotski district.[14]

Table 2. – Infant mortality rate

	1991	1993	1995	1997	1999	2001	2003	2005	2007
Total	14.6	16.8	13.8	12.1	11	10.2	9.1	8	7.1
Male	16.4	18.6	14.8	13.8	12.2	12	9.7	9.6	
Female	12.7	14.8	12.8	10.3	9.6	8.3	8.4	6.3	

Child mortality is another important indicator that is improving with time but is still almost twice higher than desirable (In EU15 4.7 in 2000). The most indicative is the mortality rate of Roma children living in Roma settlements. Such a high disparity

[13] WHO, 2005, 2007
[14] Institute of Public Health of Serbia

between the general population and the Roma children argues that the health care system still didn't manage to develop tools and services to reach the most vulnerable.

Table 3. – Child mortality rate

	General population [9]			Roma in settlements 2005[10]	
	2001	2003	2005	male	female
Under 5 mortality rate	11.8	10.4	9.2	36	23

When comparing death rates from main causes, a clear direction is given on what are the areas of possible improvements within the health service provision. Standardized Death Rates (SDRs) from all causes for EU15 is 640 on average, while in the EU8 group they vary from 795 to 1114. According to the WHO,

Table 4. Leading causes of death (expressed as standardized death rates (SDR)[11]

Indicator (Year=2005 or last available year)	Serbia	WHO European Region	European Union*
SDR, all causes, all ages, per 100 000	1017.8	930.2	678.1
SDR, diseases of circulatory system, all ages per 100 000	567	457.6	272.7
SDR, malignant neoplasms, all ages per 100 000	202.7	175	184.1
SDR, external cause injury and poison, all ages per 100 000	44.8	83.2	42.3

Cardio-vascular diseases are cause of more than a half of fatalities (56.04%). The number of heart attacks declined, but the number of cardio-vascular diseases seriously increased. Neoplasm, mainly respiratory tract cancer and colon cancer, are the second major cause of death (20.19%).

Violence and injuries as a cause of death are still low as compared to European countries. Deaths caused by infectious and parasitary diseases account for less than 1%.

Most of the causes of death are non-communicable diseases resulting from an unhealthy lifestyle. For instance, almost 50% of adult population are smokers, which is one of the largest rates in Europe.

Although communicable diseases no longer represent a major cause of death and deformities, some of them still pose a social health issue. This mostly refers to *tuberculosis* which has an incidence of 27.2[12] (per 100.000 populations).

[9] Republic Statistical Office – Dev Info

[10] Multiple Indicator Cluster Survey, UNICEF 2005

[11] *Source: WHO Regional Office for Europe, Health for All database http://www.euro.who.int/hfadb*

That is relatively average as compared to other countries in the region, but three times higher than in EU 15 countries and the effect of which is particularly noticeable in temporarily displaced persons and refugees.
Although official statistics shows that the current AIDS rate is very low, Serbia seems vulnerable in this sphere too. Manifest is a lack of information about diseases and disabilities affecting the age-specific population – for example, Alzheimer's Disease (World Bank data).[13]

IV Overview of the health care system in Serbia

Health Care Services
Health care in Serbia is provided through a wide network of public health care institutions owned and controlled by the Ministry of Health. The law provides for private practice which, however, may be pursued exclusively by way of private funds.
The whole of the private health care sector is not included in the public funding scheme and as such, it represents no supplementary component of the public system nor does it offer to insurers the possibility to exercise rights arising from compulsory insurance.

At the same time, in the Republic of Serbia there is no additional, supplementary, parallel private health insurance which could enrich the existing scarce financial resources of the system. The private provision of health care services, although limited, is on the rise, particularly in certain areas such as dentistry. However, it should be stressed that the private sector is insufficiently regulated and that it mainly employs consultants from public sector on temporary basis. The absence of private health insurance has created an unbalanced market system, where the system of private service providers, rather than powerful finance institutions, negotiates prices with individual beneficiaries (patients).

Primary care is provided in 159 Health Care Centres and health care stations throughout the country, according to WB data from 2009 survey[14].
The provision of primary health care to the population in Serbia is relatively decentralized, where services for children and women are offered by paediatricians and gynaecologists along with general practitioners. Even given the presence of specialist doctors at primary level, a study of the Belgrade primary healthcare system for 1991 to 2000 by Belgrade Institute for Public Health in May 2001 showed that one third of patients were referred on to secondary care. This is a very high referral rate by international standards even from healthcare systems where the primary care level is largely staffed by general practitioners. This feature of high referral rates to other levels of the system is symptomatic of poor organization and a lack of well-defined referral protocols.
Situation has changed according to the World Bank's latest survey[15]:

[12] WHO, 2005
[13] World Bank Document (24 May 2005), *Serbia PEIR Update*, p. 3-4
[14] Baseline Survey on Cost and Efficiency in Primary Health Care Centers before Provider-Payment Reforms, World Bank, January 26, 2009
[15] Baseline Survey on Cost and Efficiency in Primary Health Care Centers before Provider-Payment Reforms, World Bank, January 26, 2009

"Referral rates are relatively low among DZ-s but significantly higher in DZ-s that are part of a health center (Table 5). Overall, 7.1 percent of consultations result in a referral to a specialist, and 5.5 percent result in a referral to a hospital. The total mean referral rate is 12.6 percent, which is reasonable. Rural DZ-s have a higher rate of referrals to hospitals (6.2 vs. 4.9) and total referrals (13.3 vs. 12.0), although these differences are not statistically significant. DZ-s that are part of a health center have a significantly higher rate of referrals to specialists than stand-alone DZ-s (8.9 vs. 6.4), but there is no significant difference in the rate of referrals to hospitals or total referrals. Easy access to specialists in health centers may lead DZ providers that are still part of a hospital complex, to more readily refer their patients."

Table 5: DZ Referrals, number of referrals and in percent of total visits[16]

	All DZs	**Stand-alone**	**In Health Center**
Total # of referrals to specialists(% of total visits)	19,795 (7.1)	17,924 (6.4)	24,318 (8.9)
Total # of referrals to a hospital(% of total visits)	17,450 (5.5)	16,224 (5.4)	20,418 (5.7)
Total # of referrals (% of total visits)	37,245 (12.6)	34,148 (11.8)	44,735 (14.5)

Health Centres differ in view of the services they provide; they may include a pharmacy or even hospital beds. Likewise, they may provide public health care services, physical therapy and rehabilitation and occupational medicine services.

Secondary and tertiary health care services are offered to both inpatients and outpatients in a string of health institutions across the country, including general hospitals, specialized hospitals or institutes and academic hospitals.

Hospital or stationary health care in the public sector in the Republic of Serbia is provided by 37 general hospitals, 14 specialised hospitals, 19 specialized health centres, 23 single speciality clinic, 38 malty speciality institute, 5 clinical hospital centre, 3 clinical centre, according to WB data from 2009.survey.

According to an official analysis of health care services drawn up by the EAR [17] in 2003, Serbia disposed of some 48,000 hospital beds, 43,000 of which were standard hospital beds. Most of the beds were intended for short-term use (73%), some 25% is for long-term use, while the remainder was accommodated by primary care centres.

In 2007 Serbia had 41100 hospital beds including 1220 day-beds, according to IPH data. This means that the number of 5.57 beds per 1000 people in 2007 is relatively high in comparison to the countries in the region, but is still below the EU15 standard (7.6). The number of beds per 1000 people is the lowest in Srem (3.2), and the highest in Zaječar (11.1).

With 6.9 beds per 1000 people, the capital Belgrade is slightly above the country average.

[16] Source: WB Baseline Survey on Cost and Efficiency in Primary Health Care Centres, 26.01.2009

[17] World Bank Document (24 May 2005), *Serbia PEIR Update, p*. 4

Although the number of beds correlate with the same indicator in other countries, the problem comes from an inadequate structure of hospital capacities that is not adjusted to the needs of population in particular territories.
The unplanned development of this sub-system of health care is also mirrored in huge differences in the performance of certain branches of medicine, non-rational internal organization, often with small hospital units, including activities from the tertiary care sphere such as neurosurgery, maxillofacial surgery and the like.

At the end of 2004, there were some 120,000 full-time employees and some 9,200 fixed-term **employees in the public health care sector**. According to Institute of Public Health data at the end of 2007 there was a reduction of full-time employee to 111068 (decrease of 7%), as it was planned strategically. Within the network of public institutions, employee salaries are almost entirely funded by the Republican Health Insurance Fund (RHIF). The remuneration system in heath care is input-based, and employee earnings have by far the largest share in overall costs in the health care service findings show that expenditures in DZ in 2008. are dominated by personal costs(70% of total costs).[18] Although salaries of employes did show significant growth from 2004 to 2007 that was exceeding 20% annualy, comparisons across different sectors of the Serbian economy show that the wages in the health sector were about 22% below the national average in January 2006.[19] Situation is quite different in the EU 8 countries. Salaries there account for 60% of health expenditures that is similar to situation in Serbia but they are all above national averages and are increasing the pressure on overall health spending[20].

Table 6. Employees expenditures within Public Health Sector in Serbia in period from 2004. to 2007. in thousands of dinars and percentage[21]

Year	2004	2005	*2005: 2004*	2006	*2006: 2005*	2007	*2007: 2006*	*2007: 2004*
Total Revenues	82,032,443	101,251,427	*123.43*	121,955,767	*120.45*	152,470,157	*125.02*	*185.87*
Percentage	100.00	100.00		100.00		100.00		
Employees gross expenditures	49,826,456	59,876,117	*120.17*	69,727,429	*116.45*	88,644,977	*127.13*	*177.91*
Percentage	60.74	59.14		57.17		58.14		

[18] WB baseline Survey on Cost and Efficiency in PHC before Provider Payment Reform (January 2009)

[19] Schnaider, Final report, 2007
[20] Health Care Spending in the New EU Member States, WB Working Paper , 2003
[21] Source: Chamber of Health Institutes

The private sector includes 1220 medical offices and clinics, 1663 dental offices, 1835 pharmacies and 149 laboratories. In the private sector, there are 81 hospitals and 58 polyclinics[22].

Health insurance system

Serbia has inherited a health care system oriented towards securing an easy availability of all health care services to the entire population. In principle, insurance coverage is provided to (i) all employed persons, (ii) pensioners and (iii) self-employed people and farmers who are contributor payers, including the spouse, dependant children and elderly parents of an insurer. The Budget transfers to the Republic Health Insurance Institute (RHIF) a guarantee that, in principle, health insurance coverage is also provided to unemployed, internally-displaced people and refugees, as well as to people who belong to vulnerable categories. A special system of health insurance coverage is applied to the army, army civilians and armed forces' pensioners and their family members and dependants. The RHIF offers a generous package of health services, including special services, such as medical treatment abroad and military hospitals, or compensations for goods purchased on the private market. Besides, there are other categories of transferring healthcare-related funds, such as sick leave costs.

The new Health Insurance Law (2006) has decreased a number of entitlements in the basic health service package. It abolished the right to dental health care (with the exception of children, people over the age of 65, pregnant women and emergency cases), compensation for the period of temporary work incapacity for women with preterm labour has been reduced from 100% to 65%, the right to compensation of travel expenses associated with exercising rights to health care in the region of the branch institution has been abolished. According to the new law, non-marital partners gain the right to insurance after only two years of their partnership. Savings made in such a way should had have been directed into better functioning of other parts of the health system

Health system financing

The health care system in Serbia is funded through a combination of public finances and private contributions.
The most important source of health care financing in Serbia is the Republic Health Insurance Fund (HIF). Funds from employees and employers are collected directly to HIF sub-account. Ministry of Finance has the access to that account, so it is their sub-account as well. Health Insurance Fund is financed also with supplementary financing from various budgetary sources, such as Pension Fund, Ministry of Finance fund for the unemployed, etc. The appropriate compilation of these public financial flows provides not only the basis for the Serbian Health Accounts but also for the analysis of the financial stability of the system.

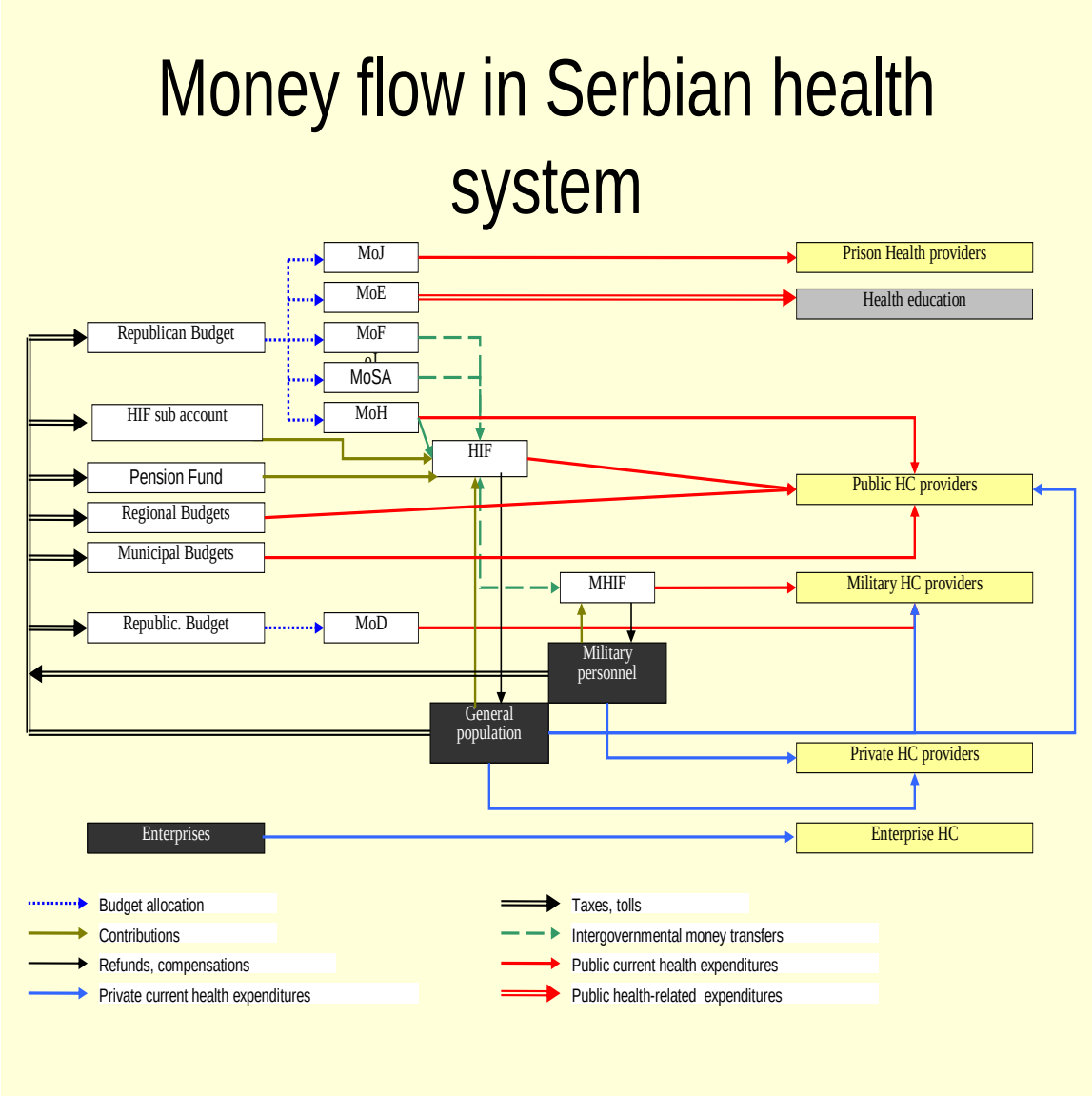
[22] Public Health Institute data obtained from the Republican Statistical Office (all data related to Private Sector).

Funds for the health care of the insured persons are provided from the Republic Health Insurance Fund, whereas funds for the health care of the uninsured citizens, health promotion, and prevention of illnesses, special programmes and health protection measures for the whole population are provided from the Republican budget.

Due to the absence of private health care insurance, private funding is more or less completely based on out-of-pocket payments and is supplemented by contributions from a small number of major companies which have (and fund) their own institutions which specialize in the treatment of occupational diseases and also provide primary care services. More than 90% of public costs are financed through the RHIF or inter-departmental transfers via the RHIF. Similar coverage is envisaged for those who are entitled to health care services by military service providers.

Health services in prisons have a relatively small market share. They are provided within their own framework without any statistical data.

Graph.1 Money flow in Serbian health system



Availability of data for NHA production

The public provision of healthcare services in Serbia is fairly well documented, and quite a substantial amount of data is routinely collected. With respect to health accounts, the most useful data is the financial report of the Republic Health Insurance Fund (HIF), as the HIF stands for more than 90% of public health care spending in Serbia.

The second important set of information comes from the reporting of the institutions in the network of providers as organised by the Chamber of Health Institutes. Whereas the public healthcare system is generally well documented, the opposite holds true for the **private healthcare providers**. Virtually nothing is known about the structure, the turnover made, the number of employees, or the number of patients treated.

Some limited information exists on the bigger private institutions (e.g. a private hospital), but the majority of institutions constitutes completely uncharted territory. The Statistical Office has obtained an estimated number of institutions via the business register, and Ministry of Health has obtained the list of private institutions with work permit.

Currently all data on **private healthcare financers** are taken from the household budget survey (HBS) estimates, i.e. from what private households indicate as having spent on healthcare. The usefulness of HBS data has never been questioned in principle, but there are serious dangers of systematically underreporting health-related expenditures in HBS, as the amounts are discontinuously spent (different from expenditures for food, rent or the like) and the true amount spent may not always be fully remembered. Furthermore, private healthcare is likely to be primarily consulted by high-income households, which are known to be systematically underreported in HBS data in all countries worldwide.

The second difficult subject is the area of **international donations**. Serbia receives quite substantial donations earmarked for health, both from public and private institutions and both in money and in kind. As donations can be held in foreign-currency accounts with Serbian commercial banks, it is not easy to get a complete estimate for the total value of donations. Different approaches have been followed; data from the National Bank, from the Ministry of Finance, as well as websites of the international donor society have been consulted. The amount currently attributed still incorporates substantial estimation risks and needs further work in the future. As the majority of donations trigger improvement of buildings and medical-technical equipment, the impact on current health expenditures is fairly small, because the majority of donations end up in health-related expenditures.

The functional distribution of the health expenditures is based on financial information of the Providers of the Public Healthcare Network and structures of activities paid by RHIF.

V Trends and structure of health care expenditures

Health Spending Indicators

From a health policy perspective public health care financing has not only the function to cover financial risks of ill-health but also to secure a fair distribution of the public funding.

In Serbia, about 69% of Total Current health expenditure (TCHE) are financed by Public sources thereof the largest share by RHIF. Consequently, the payments of the Republican Health Insurance largely determine the public provision of services. Part of the public finance of health services are further expenditures by the Ministry of Health, by regional and local government, by Ministry of Defence, Ministry of Justice, and Military Health Insurance.

Health System finansing in Serbia in period 2003 to 2006. godine, is characterized by predominant role of public health financing (shown in Table 7).

Table 7: Health spending indicators in Serbia

	2003	2004	2005	2006
Total health expenditures	**97,153,751**	**115,000,777**	**139,742,832**	**167,146,634**
% of GDP	**8.3**	**8**	**8**	**8.2**
Expenditures of HIF	**61,190,800**	**75,297,876**	**93,229,623**	**108,274,764**
% of GDP	**5.22**	**5.26**	**5.33**	**5.30**
Public source of funding % of GDP	**5.66**	**5.68**	**5.72**	**5.70**
% of Total health expenditures	**63**	**65**	**67**	**65**
Donations as % of GDP	**0.34**	**0.05**	**0.02**	**0.02**
Private source of funding % of GDP	**2.29**	**2.27**	**2.24**	**2.48**

1NHA derived indicators

The health expenditure share of GDP on average across OECD countries was 8.9% in 2005 and 2006 (OECD site), while in Serbia it was 8 and 8.2% respectively.

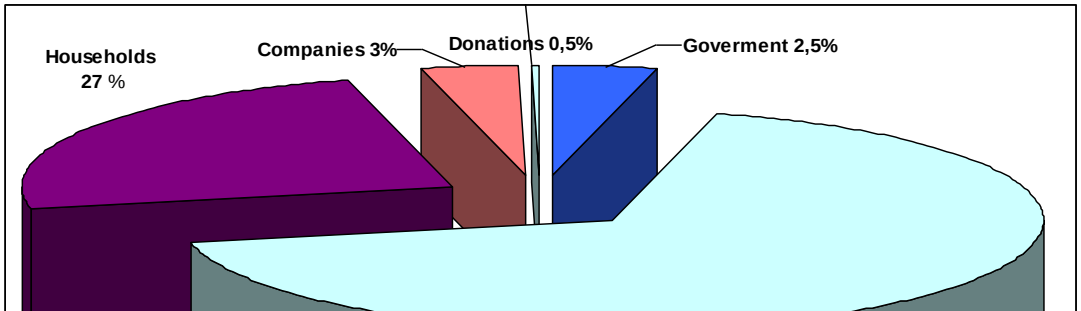
It is confirmed that predominant financing source within Public health sector in Serbia is Health Insurance Fund (HIF), whose participation in financing is inscreasing from 2003 to 2006. Probable reason for this increase is better controle on the collection of revenues that is contributions for the health insurance.

Table 8. – Share of financing within public financing

	2003	2004	2005	2006
Share of HIF %	87	91.5	92.7	93
Share of other public sources %	13	8.5	7.3	7

Answer to question: **Who pays how much c**ould be seen on graph2.

Graph 2.Financers of health sector



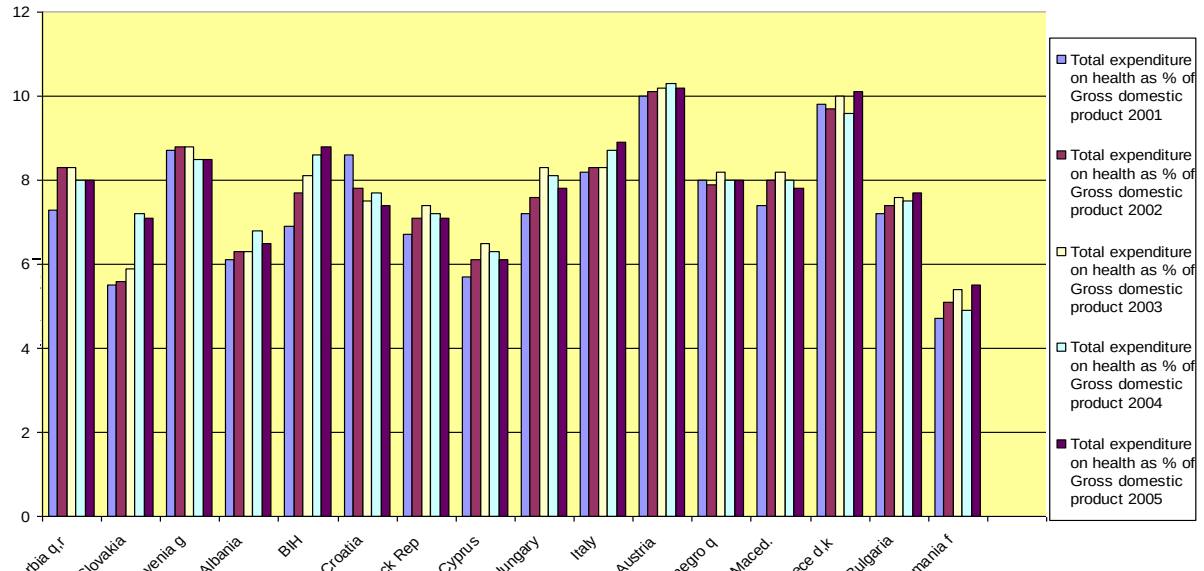
The health expenditure share of GDP on average across OECD countries was 8.9% in 2005 and 2006 (OECD site),while in Serbia was 8 and 8.2%.
Health expenditure per capita in EU 27 in 2005. at everige was 2468 dolars, almost 10 time more then in Serbia.[14]

Table 9. Health expenditure per capita

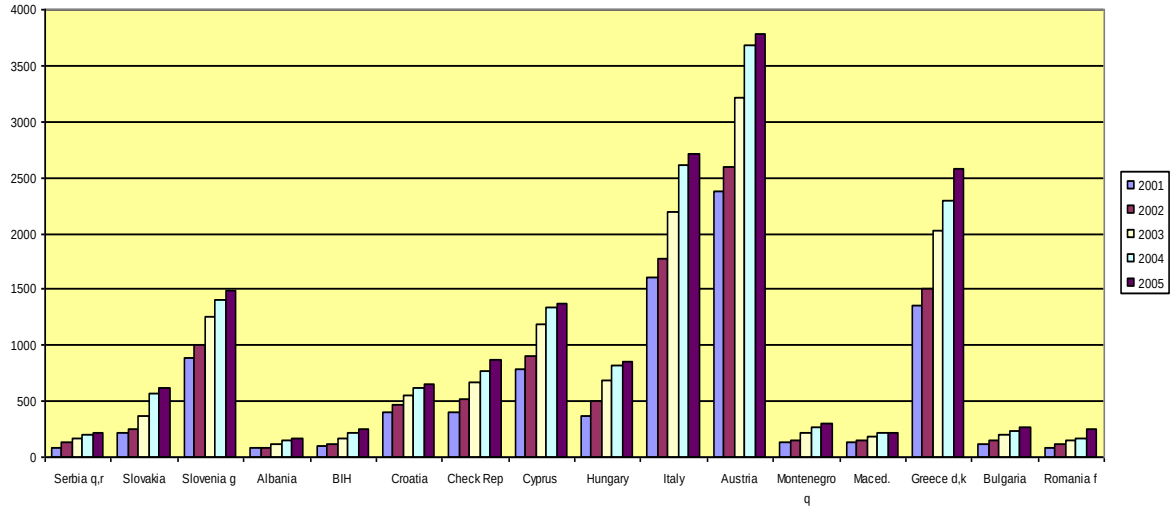
	2003	**2004**	**2005**	**2006**
Health expenditure per capita in dinars	**12987**	**15456**	**18724**	**22550**
Health expenditure per capita in US$	**226**	**263**	**279**	**336**
Health expenditure per capita in Euros	**200**	**213**	**226**	**270**

The calcuted indicators of health expenditures, presented as percanteges of GDP, enabled comparison between the share of health care expenditure in GDP for Serbia with the selected European countries.

Graph 3. Total expenditure on health as % of gross domestic product 2001-2005[23]

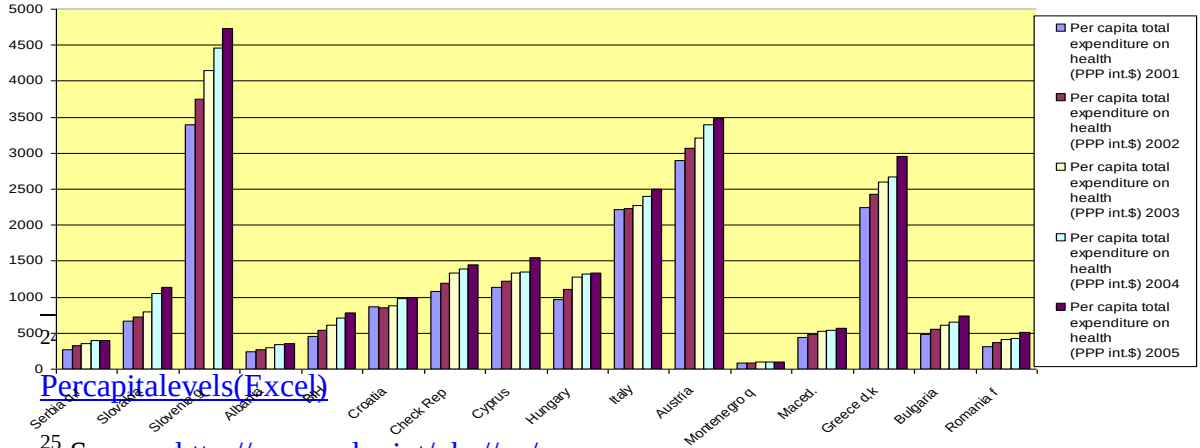


Graph 4. Total expenditure on health per capita at average exchange rate (US$)2001-2005 Health spending pattern in Serbia with other countries[24]



Only Purhasing Power Parity provide us with data on real purchasing capability of some nation.

Graph 5. Total expenditure on health per capita *Purchasing Power Parity*[25]



[24] Percapitalevels(Excel)

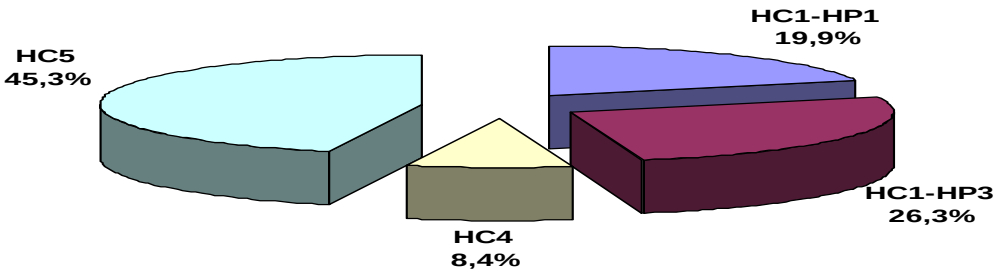
[25] Source: http://www.who.int/nha//en/

Relation between private and public health providers, as well as relation between private and public health financiers are established with the Ministry of Health Survey in 2006 (table 10).

Table 10. Public/private mix of health care financing in Serbia as % of TCHE, 2006

		Health care providers		
		Private	Public	Total
Finansiers of health services	Private sources	38,443,726 (23%)	12,201,704 (7.3%)	50,645,430 (30.3%)
	Public sources	18,386,130 (11%)	98,115,074(58.7%)	116,501,204 (69.7%)
	Total	56,829,856 (34%)	110,316,778 (66%)	167,146.634 (100%)

Graph 6. Structure of out-of-pocket payment



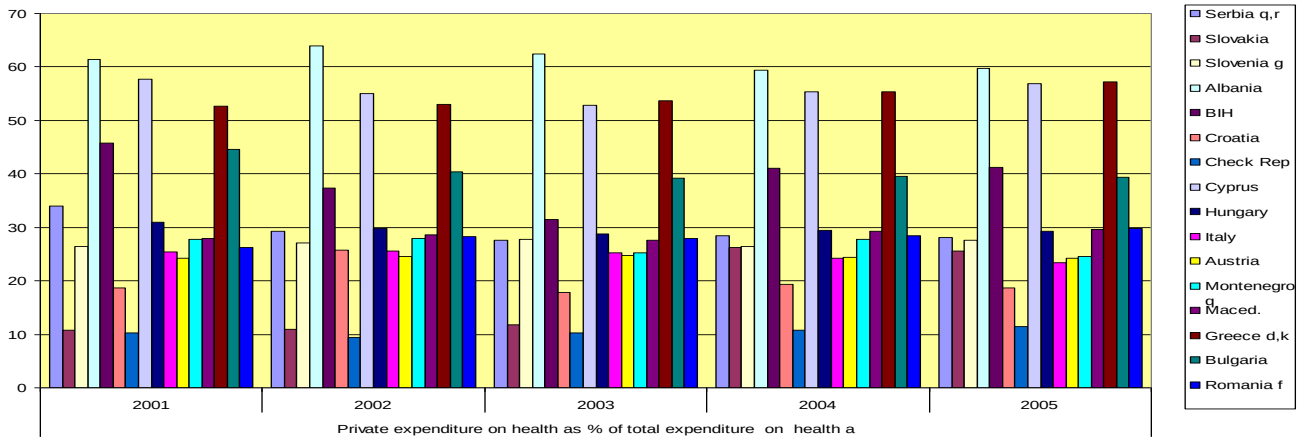
Legend:
HC1.- Curative care
HC4.- Ancillary services
HC5.- Medical goods dispensed to outpatient
HP1.- Hospitals
HP3.- Ambulatory care

Republican Statistical Office survey on Shade economy, from 2005, shows that citizens of Serbia are spending substantial amount of money for "under the table" payments to health workers. Results show that 90.8% of gifts in health care relate to public sector, and represent 9.3% of total out of pocket spending.

Blurred situation regarding private health providers and their activities, policy makers plan to overcome with implementation of the new "Fiscal bill policy". From 1st of June 2009 all private providers are going to be obliged to provide patients with fiscal bill, which will make foundation for more transparency in private sector.

The following graph is showing comparison between the share of public and private financing in Serbia and countries from the region in 2006.

Graph 7. Private expenditure on health as % of total expenditure on health[26]



Regional distribution of public financial resources presents one of the indicators of the equity in health system and in Serbia it shows certain consistencies. According to the table below it is obvious that within the given timeframe HIF has financed the region of Vojvodina with funds of less than average values, while regions of Southeastern Serbia and Kosovo with Metohija was financed with more than average funds.

Table 11. Regional distribution of financial sources of HIF

Regija Region	% HIF 2004	% HIF 2005	% HIF 2006
APVojvodina	82.09	81.63	78.39
Belgrade	82.55	83.02	81.67
Central Serbia	86.36	84.69	83.27
East Serbia	90.77	89.59	86.67
South Serbia		87.94	85.93

[26] Source: http://www.who.int/nha//en/

	87.98		
Kosovo&Metohia	94.53	94.12	95.05
West Serbia	84.54	85.42	82.19
Average	86.79	85.01	82.56

The next set of indicators is looking into distribution of resources as per different providers and services.

The largest share of the total health expenditures is being allocated to hospitals (HP.1), followed by allocations for retail sale and pharmacies (HP.4), while Ambulatory health care and other institutions providers of the outpatient health care take the third place (HP.3). The lowest share is directed for general health administration (HP.6) as shown in the Table 12 as a percentage of the GDP.

Table 12. Health providers financing in percentage of GDP (ICHA-HP)[27]
How much money goes to which provider?

	2003	2004	2005	2006
Total health expenditure	8.3	8.0	8.0	8.2
HP.1 Hospitals	4.41	4.10	3.92	3.96
HP.3Ambulatory health care	1.36	1.71	1.81	1.77
HP.4Retail sale, pharmacies	1.67	1.65	1.74	1.91
HP.5Public health programmes	0.24	0.17	0.16	0.17
HP.6General health administration	0.33	0.17	0.14	0.11
HP.7Occupational health care	0.28	0.26	0.25	0.25
HP.9Rest of the world	0.00	0.01	0.00	0.00

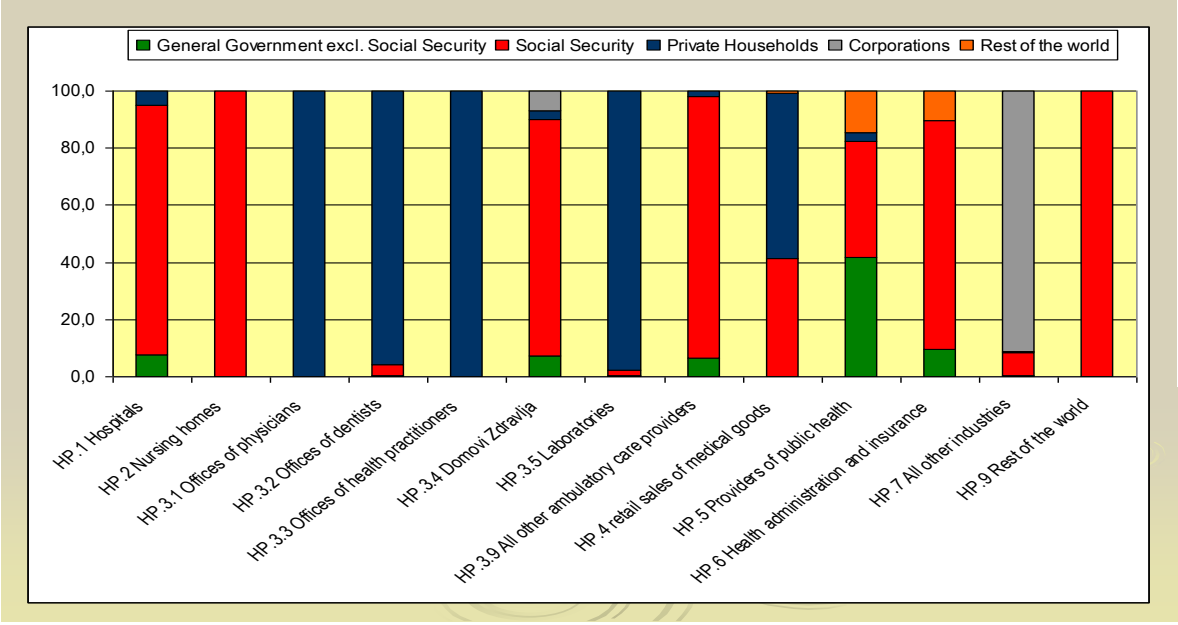
Allocations to hospitals have decreased in the observed period from 4.41% GDP in 2003 to 3.96% GDP-a in 2006.

The second, very positive trend is noticed in increased allocations for the primary and out-patient health services. The ratio of allocation to Dom zdravlja versus hospitals changed from 1:3.25 in 2003 to 1:2.24 (for every dinar allocated to Dom zdravlja, hospitals receive 2.24 dinars).

[27] International classification of health accounts – classification of different providers

The next graph is showing distribution of funds across different providers. The categories of Offices of physicians, Offices of dentists, Laboratories and Offices of Health Practitioners belongs to private providers and therefore such a high private households contribution. It is obvious that all other providers are mostly financed by Social Security that is HIF.

Graph 8. How are health care funds distributed across the different providers?[28]



Functions or types of services provided and activities within the health system, observed throughout the years covered with this survey are showing the highest share of allocations being directed to the curative care. The next highest amount is allocated for pharmacies and is reflecting global trends of increase in usage and costs of pharmaceuticals.

Next table is showing distribution of resources per different functions as percentages of the GDP

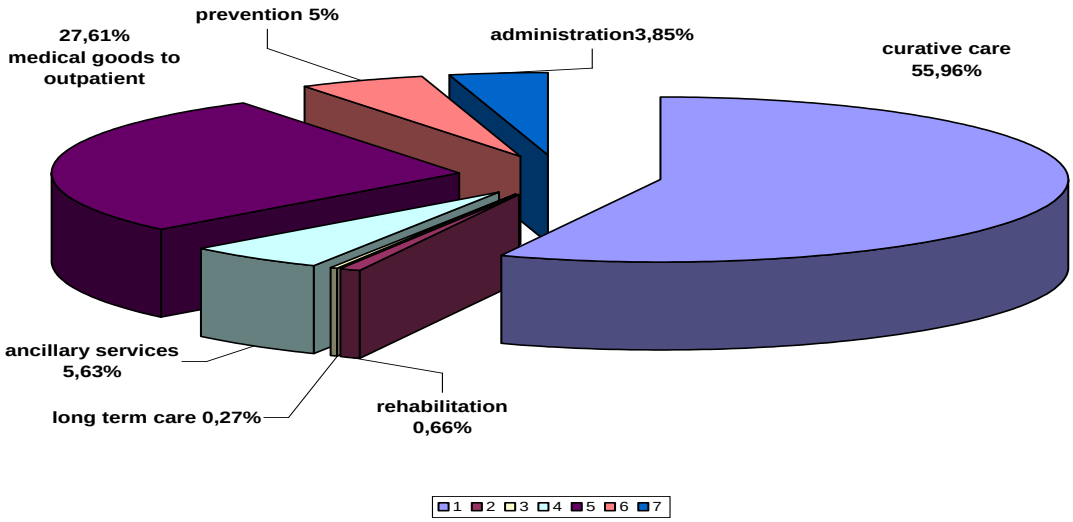
Table 13. Health care financing as percentage of GDP(ICHA-HC)[29]
How much money goes for which services?

	2003	2004	2005	2006
Total health expenditure	8.3	8.0	8.0	8.2
HC.1Curative care	4.80	4.61	4.50	4.79
HC.2Rehabilitative care	0.29	0.32	0.36	0.24

[28] Gunter Bruckner (Mart 2006) NHA Final Report in Serbia
[29] International classification of health accounts – classification of health services

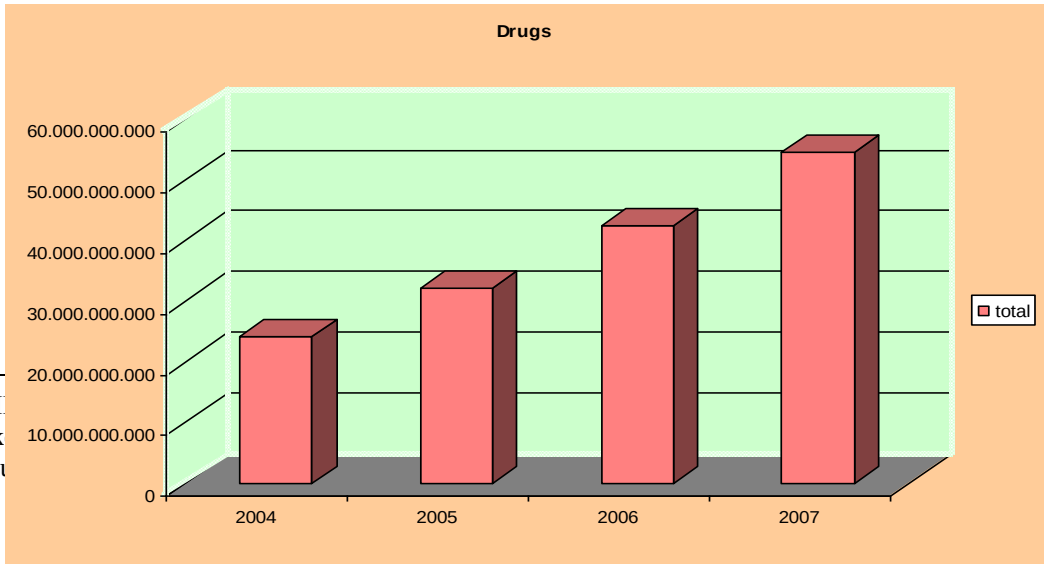
HC.3Long term nursing care	0.04	0.04	0.05	0.04
HC.4Ancillary services to health care	0.40	0.48	0.54	0.49
HC.5Medical goods dispensed to outpatients	1.69	1.77	1.79	1.89
HC.6Prevention and public services	0.74	0.68	0.65	0.64
HC.7Health administration	0.33	0.17	0.13	0.10

Graph 9. How much money goes to what services?



The general trend in relation to the health services has been that of rising expenditures on pharmaceuticals, marginal falling of expenditures on inpatient care and marginal increase of expenditures on outpatient care.[30] The similar trend can be observed in Serbia as well.

Graph 10. Drugs spending from 2004 -2007 in Serbia[31]



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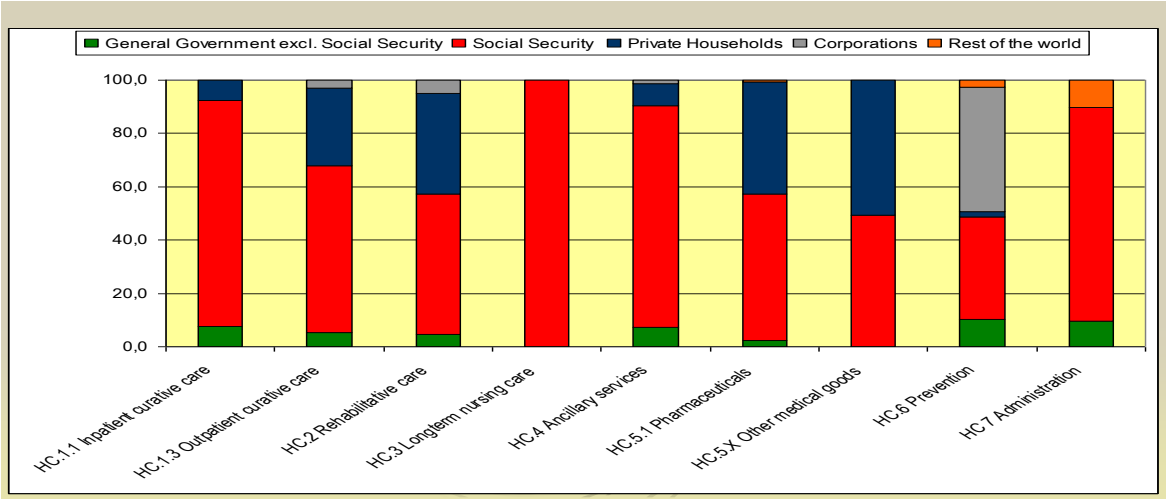
Graph 11. How are Health care funds distributed across the different services in Serbia[32]



If we look into distrubution of services cross referenced with the sources of funding, it can be observed that private households financed outpatient currative care with almost 1/3 of total finances of that category, while inpatient currative care has public sources as a dominant source of funding. Almost one half of resources needed for pharmaceuticals and other medical goods (glasses, hearing devices etc) are covered from private sources.

Analysis of financing of primary health care in 2006 show insuficient financing of prevention.

Table 14: Share of preventive care in Primary health care in 2006[33].

Region	General medical services and occupational health – share of	Women's health services – share of preventive care	Preschool children health services - share of preventive care	School children health services - share of preventive care

[32] Gunter Bruckner (Mart 2006) NHA Final Report in Serbia

[33] Source: Chamber of Health Institutions, Institute of Public Health of Serbia, HIF, Republic Statistical Office (population estimate on 30th June 2006)

	preventive care			
SRBIJA 2006	**4**	**50**	**29**	**21**
VOJVODINA	**7**	**51**	**33**	**21**
CENTRALNA SRBIJA	**3**	**49**	**28**	**21**

One of the reform goals was to improve the condition of the health infrastructure since it seriously deteriorated over the period of 90-s. Iincreased allocations for capital investments, specifically for medical equipment, over four years from 2004 to 2007 is noticeable, and present basis for higher quality of services in health.

Table 15. Capital investments in public health institutions in the period from 2004-2007 (in 000 din)

Total revenues of public health institutions	**82,032,443**	**101,251,427**	**121,955,767**	**152,470,157**
Total Capital Expenditures	**2,571,077**	**2,808,509**	**5,147,574**	**7,530,124**
Purchase and capital maintenance of buildings	**725,437**	**875,414**	**1,495,949**	**1,290,591**
Machines and equipment	**1,826,891**	**1,906,031**	**3,613,949**	**6,121,189**
Other real estate and equipment	**18,749**	**27,064**	**3,361**	**42,995**
Other	**0**	**0**	**34,315**	**75,349**

Table 16. Percentage of expenditures for capital investements in whole revenue of public health institutions

	2004	**2005**	**2006**	**2007**
Total revenues	**100.00**	**100.00**	**100.00**	**100.00**
Total OSNOVNA SREDSTVA	**3.13**	**2.77**	**4.22**	**4.94**
Buldings	**0.88**	**0.86**	**1.23**	**0.85**
Machines and equipment	**2.23**	**1.88**	**2.96**	**4.01**
Other real estate and equipment	**0.02**	**0.03**	**0.00**	**0.03**
Other	**0.00**	**0.00**	**0.03**	**0.05**

Conclusion

The results have confirmed the pattern of health spending in the Republic of Serbia in period 2003 to 2006 and identified health indicators that enabled comparison of health system in Serbia with health systems in other countries.

The similarity in total health expenditures was observed, as well as similarity in relation of health financing sources in health system of Serbia with those of neighboring countries in the same period.

It was concluded that monitoring the financial flow in health at national level was necessary in getting the real picture of health sector and that it was thus crucial to continue with National Health Accounts' production on regular basis.

An analysis has indicated significant progress achieved in the area of health status indicators as the most important final outcome of the health system performance gratifying efforts and resources invested in this sector. However, indicators show that more can be achieved in the area health indicators of vulnerable population, primarily Roma.

When looking into main causes of mortality among population, trends between Serbia and EU are still the same but the inevitable conclusion is that investments into prevention and promotion of healthy life styles must be increased.

The positive changes are observed in decreased number of referrals from primary to secondary and tertiary levels of health care indicating improvements in organization and referral protocols.