

**COMPARATIVE ANALYSIS OF HEALTH INSTITUTIONS, PERSONNEL, VISITS  
AND NUMBER OF HOSPITAL DAYS IN PRIVATE AND PUBLIC HEALTH  
SECTOR IN THE REPUBLIC OF SERBIA, BELGRADE AND SOUTH BACKA  
DISTRICT IN 2016**

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## **SUMMARY**

### **Introduction:**

Collecting data about the structure and function of private health care sector in the Republic of Serbia and its inclusion in joint health care system is one of the most important issues for making decisions in health care and getting more accurate picture about the possibilities of health care system in Serbia. The aim of this analysis was assessing the structure and possibilities of the private sector and through comparison of health facilities, personnel, visits, number of hospital days in public and private sectors in the Republic of Serbia, South Backa and Belgrade district in 2016. year.

### **Material and Methods:**

A descriptive comparative analysis was performed using a data about private and public providers, personnel, visits and number of hospital days obtained from the Institute of Public Health of Vojvodina, the City Institute of Public Health of Belgrade and the Center for Informatics and Biostatistics of the Institute for Public Health of Serbia.

### **Results:**

The results showed that health care was provided in Belgrade district in 2016 by total of 2,645 employees in private sector and 30,260 in public sector. We found that private sector had a far wider range of health facilities than public sector, which was mainly due to the high number of dental and medical practices. In South Backa district private sector had 316 practices compared to the district of Belgrade 655 . Almost three times more visits to private doctors in Belgrade (1,077,892 vs. 310,218) than South Backa district. Seventeen times greater number of hospital days was provided in public health sector in Belgrade as compared to private health sector in Belgrade (2,570,251 vs. 150,411).

### **Conclusion:**

The conclusion of this analysis was that public health sector has remained the foundation of health care system in Serbia. Private health sector is expanding, but its structure and scope of services is still undervalued as compared to public sector.

**Keywords:** private health care sector; health care; public health care sector in the Republic of Serbia

## INTRODUCTION

Health Care Law (Law of Health Care Sluzbeni glasnik No.107/05) in Article 45. states that health care service includes public health care facilities and private dental and medical practices, as well as health workers and associates who provide health care in public health institutions and private dental and medical practices. Health facilities could be established as public or private property, and founders could be in addition to various state bodies, ordinary people. Private dental and medical practices may be established by unemployed health worker who has passed board exam or retired health care worker, if he/she obtains an agreement from the Chamber of health workers. To establish and run health institutions, different rules apply for private and public ownerships. Health care facilities owned by the state are established in accordance to the network of health institutions, and the founders are, depending on the type of institution, republic, autonomous province, city or municipality. Given that they are constituted as institutions that operate activities of public interest, their establishment and management bodies are defined by the Civil Service Law [1]. On the other hand, private health care providers in most cases operate as private dental and medical practices; they are established and operate in accordance with the Law of Private Entrepreneurs [2].

There are number of companies, mainly in the form of limited liability companies that operate in accordance with the Law of Private Companies [3]. A precise overview of the number of entrepreneurs and companies that provide health care services is not available from public sources, since the Republic Statistical Office (RSO) in communications related to the statistical registers publishes cumulative data related to the activity of "Health and social work", and the extraction of health care service providers only, requires additional disaggregation of data. As with all other business entities, two statistics have been keeping, one that relates to companies, institutions, cooperatives and other organizations and the other that relates to entrepreneurs and their employees. This method of data collection is often accompanied by inadequate presentation of certain statistic indicators.

Private health care providers have limitations for health care services that they can provide. In fact, there are several activities listed in Articles 48. and 56. of Health CareAct [4] that can be performed exclusively in public health care facilities.

The structure of private health sector is various, and distribution of health facilities is territorially dispersed. However, data about the type of services

provided by private health institutions is not sufficiently reliable despite obligation for record-keeping and data sharing between health care providers and relevant government departments and institutes which should aggregate all data about health sector.

The aim of this analysis was assessing the structure and possibilities of the private sector and through comparison of health facilities, personnel, visits, number of hospital days (HD) in public and private sectors in Serbia, South Backa and Belgrade district in 2016. year.

## **MATERIAL AND METHODS**

A descriptive comparative analysis was performed using data about private and public providers, personnel, visits and number of hospital days obtained from the Institute of Public Health of Vojvodina, the City Institute of Public Health of Belgrade and the Center for Informatics and Biostatistics of the Institute for Public Health of Serbia.

## **RESULTS**

Based on available data, the number of private health institutions in the Republic of Serbia in 2016 was 2,650 (Table 1) and the number of public health institutions was 355 (Table 2).

**Table 1. Private health institutions in Serbia in 2016**

Private health institutions	Number
Health center and polyclinic	133
Hospital	47
General and specialized medical practices	673
Dental practices	1,387
Other health dental and medical practices	14
Medical laboratories, Ro cabinets and US	144
Pharmacies	252
Total	2,650

Source: The Institut for Public Health of Serbia, 2016

**Table 2. Public health institutions in Serbia in 2016**

Public health institutions	Number
Health center	158
Clinic Center	4
Clinic-hospital center	4
General hospital	41
Special hospital	36
Clinic	7
Office institute	25
Institute	16
Institute/department for public health	25
Pharmacies	35
Military institutions	4
Total	355

Source: The Institut for Public Health of Serbia, 2016

Health care in private sector in Republic of Serbia 2016 was provided by a total of 7,544 staff, of which 4,523 were doctors, dentists and pharmacists (60 %). In public sector in Republic of Serbia, health care was provided by a total number of 104,007 employees, of which 23,723 were doctors, dentists and pharmacists and 46,046 nurses and technicians.

**Table 3. Number of employees, visits and HD in private and public sector in Serbia in 2016**

Sector	Total employees	Doctors/ Pharmacists	Nurses and technicians	Visits	Hospital days
Private	7,544	4,523	3,021	2,629,840	840,457
Public sector	104,007	23,723	46,046	26,699,695	10,337,120

Based on Table 4, a total number of 316 medical institutions were included in private health sector in South Backa district. Of these, most were dental practicess (153), general medical and specialized medical practicess (82) and pharmacies (27).

**Table 4. Health institutions in private sector in South Backa district in 2016**

Private health institutions	Number
Health center and polyclinic	22
Hospital	9
General and specialized medical practices	82
Dental practices	153
Other health dental and medical practices	2
Medical Laboratories , Ro cabinets and US	21
Pharmacies	27
Total	316

Source: The Institute for Public Health of Vojvodina, 2016, and The Institute for Public Health of Serbia, 2016

Different structure and organization of institutions in public health sector was the reason for significantly lower total number of institutions in public than in private sector (Table 5).

**Table 5. Health institutions in public sector in South Backa district in 2016.**

Public health institutions	Number
Health center	11
Clinic center	1
General hospital	1
Special hospital	1
Clinic	1
Office institute	5
Institute	4
Institute/department for public health	1
Pharmacies	2
Total	27

Source: The Institute for Public Health of Vojvodina, 2016, and The Institute for Public Health of Serbia, 2016

South Backa District has strong network of public health institutions, including one clinic center. These institutions provided health care to the entire population on its territory. Data about the number of employees presented in Table 6 revealed that public health sector had more than 8. times employees than private health sector in South Backa District, as follows: three point five times was greater number of employed doctors, dentists and pharmacists, and about eight times more employees with higher and secondary education were recorded in public versus private health sector.

**Table 6. Number of employees, visits and HD in private and public sector in South Backa district in 2016**

Sector	Total employees	Doctors/ Pharmacists	Nurses and technicians	Visits	Hospital days
Private	1190	688	502	310,218	18,594
Public sector	9,194	2,218	4,204	2,048,899	299,358

Source: The Institute for Public Health of Vojvodina, 2016, and The Institute for Public Health of Serbia, 2016

Underdevelopment of private health sector in South Backa district was obvious when compared to public sector e.g. public health sector provided seven times more visits to health provider (2,048,899 vs. 310,218) and achieved 16 times more hospital days as compared to private health sector (299,358 vs. 18,594).

For private sector in **Belgrade**, data were analyzed from 881 private health care facilities that provided their health related statistical reports (Tables 7, 8 and 9).

It may be noted that public health sector had a far wider range of complex health institutions than private sector, mainly based on the number of clinics. Therefore, it can be concluded that public health sector was dominant in providing health services to the population.

**Table 7. Private health institutions in Belgrade**

Private health institutions	Number
Health center and polyclinic	39
Hospital	23
General and specialized medical practices	175
Dental practices	408
Other health dental and medical practices	5
Medical Laboratories , Ro cabinets and US	130
Pharmacies	101
Total	881

Source: City Institute of Public Health of Belgrade, 2016

**Table 8. Public health institutions in Belgrade**

Public health institutions	Number
Health center	16
Hospital	7
Clinic-hospital center	4
Clinic center	1
Clinic	5
Office institute	11
Institute	10
Institute-department for public health	2
Main Pharmacie	1
Total	57

Source: City Institute of Public Health of Belgrade, 2016

Health care in private sector in 2016 was provided by a total of 2,645 staff, of which 1591 were doctors, dentists and pharmacists (60 %). In public sector in Belgrade district, health care was provided by a total number of 30,260 employees, of which 7,842 were doctors, dentists and pharmacists and 16,343 nurses and technicians.

According to the proposed methodology, the number of full time employees in private sector only were presented in tables, while the number of consultants was unknown and very variable. Therefore, it was difficult to adequately assess the average workload of doctors. The greatest number of staff was recorded in various specialty clinics, then in hospitals, women health care facilities and physical medicine.

In primary and specialized private health care, according to the available data, a total number of 310,218 doctor visits were done. In public clinics 8,066,179 visits were carried out.

There were 382 beds available in private hospitals. In 2016, they achieved 150,411 hospital days, which is negligible in relation to the number of hospital days in public hospitals (2,570,251).



**Table 9. Number of employees in private and public sector in Belgrade district in 2016**

Sector	Total employees	Doctors/ Pharmacists	Nurses and technicians	Visits	Hospital days
Private	2,660	1,591	1,069	310,218	150,411
Public sector	30,260	7,842	16,343	8,066,179	2,570,251

## DISCUSSION

Good and efficient health care system must integrate private and public institutions, hospitals, clinics and health centers, regardless of the proportion and relationship. In US, about 90% of health care services are provided by private sector, while in Europe this proportion is half-half, indicating that these two systems are evidently good to act as a whole and cooperate with each other for the benefit of patients [5].

In our country these two sectors are unnecessary conflicted. They experience each other as competitors rather than partners. To provide more efficient health care in Serbia, this „rivalry” must be overcome by including both sectors in the integrated health care system.

Many countries have provided a chance for their private health care system to be a strong driver in the development of the entire society. Swiss or German health care facilities have become world famous brands in which patients come from around the world. More and more countries are able to deliver health care services at highest standard, providing also financial benefit for their country.

Recently, private health care has allowed strong economic boom in Singapore, India, Turkey, Malaysia, Greece, Brazil [6-11]. These destinations, among them some are far away, have become destinations where more and more patients from Serbia are heading to when having some health problems. Czech Republic is also on the list, and recently, Macedonia, Bulgaria and Romania have become important health care centers.

Tukada, the famous hospital chain, has opened a hospital with 1,000 beds in Sofia, which has entered into the system of National health insurance, so every patient with the health care card can ask for help. With minimal additional payment in Bulgaria, a patient has choice to have a treatment in private clinics.

Many of our doctors, especially cardio surgeons and obstetricians who work in private hospitals in Macedonia shared their experience about successful cooperation of private and public sectors.

In Serbia, a patient who decides to use services offered by private institution has to pay the treatment twice: firstly through obligatory contributions allocated for public insurance, but later has to pay out of the pocket for services in private sector.

Patients should be able to make choices and have a feelings that they are really in hands of an expert they trust. Serbia should set up a health care system like most other countries, to allowed patient to chose private sector without any negative connotation and consequences.

Until before 25 - 30 years Serbian health care system was absolute leader in former Yugoslavia. Now the situation has significantly changed. Doctors as well as patients are leaving Serbia, taking large outflow of knowledge as well as money with them from the country. It would be much better if we could become leaders in health care again and acquire financial gain, instead of having our patients going for the treatment in Turkey, France, Czech Republic or Macedonia.

Some measures for equalization of both health sectors are undergoing and further are needed in Serbia because it would provide a comprehensive and efficient health care. Not only declarative health sector reform is necessary, as it was the case in last fifteen years, but reform that would put the focus on patients as health care users who have all rights to choose the best health service for themselves.

## CONCLUSION

On the basis of these results we concluded:

- The number of employees in private sector in the Republic of Serbia, South Backa and Belgrade district in 2016 was far below the number of employees in public health sector;
- Private health care accounted far lower number of doctor visits, as well as number of hospital days as compared to public health sector;
- Public sector has remained the foundation of health care system in Serbia.

For the network of health institutions it can be concluded that private health sector was based mainly on large number of dental and medical practices. Public sector had wider range of complex health care institutions and institutions based on high technology.

Considering the concentration of private sector, we can conclude that private dental and medical practices was most developed in Belgrade, which was expected given the population density. Thus, more than one third of private health care service providers were in Belgrade. Health care providers such as medical and dental practices and pharmacies are the most common among private subjects.

## REFERENCES

1. Zakon o javnim službama. Službeni glasnik RS, br. 42/91, 71/94, 79/2005.
2. Zakon o privatnim preduzetnicima. Službeni glasnik SRS, br. 54/89, 9/90. Službeni glasnik RS, br. 19/91, 46/91, 31/93, 53/93, 67/93, 48/94, 53/95, 35/2002, 101/2005.
3. Zakon o privrednim društvima. Službeni glasnik RS, br. 125/2004.
4. Zdravstveno-statistički godišnjak Srbije za 2016. godinu. Available from: <http://www.batut.org.rs/index.php?content=77>.
5. Knežević J. Dva sektora zdravstva razdvojena na štetu pacijenata. Magazin Biznis - Medicina i tržište. 2016.
6. <http://www.medicalsingapore.com/>
7. <http://www.health-tourism-india.com/>
8. <http://www.medicaltourisminturkey.org/>
9. <http://www.malaysiahealthcare.com/>
10. <http://www.healthtourism.com.gr/>
11. <http://www.health-tourism.com/brazil-medical-tourism/>