

DYNAMICS AND TRENDS OF THE EXPENDITURES OF MULTI-PROFILE HOSPITALS IN BULGARIA

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Abstract

This paper presents analyses of the dynamics and trends of the expenditures of multi-profile university, regional, municipal and city hospitals in Bulgaria during the last fourteen years for which there are officially published data. It is well known that hospital care is the most substantial expenditure item of each healthcare system. It is also known that the expenditures for healthcare increase continuously in Bulgaria and in a global aspect. This fact suggests that the analysis of hospital expenditures is of great significance for their rational management and improvement of their effectiveness. The analysis of expenditures – types, sources, value and trends is necessary for the control of the complex interrelations and balance between needs and available resources.

Key words: multi-profile hospitals, dynamics, trends, expenditure types, expenditure distribution

The analysis of the expenditures of multi-profile hospitals is of great importance for their rational management and improvement of their effectiveness. The mission of each hospital establishment is to improve patients' quality of life through provision of medical care, necessary for recovery, improvement or stabilization of their health status. For the realization of this mission or, in other words, for "the production of medical services" the healthcare establishment spends certain resources. In this aspect, it is necessary to control the complex relationships and balances between necessities and resources, between spent resources and delivered medical care, between results and spent resources. The analysis of the dynamics of the expenditures and their allocation is of key importance in this case.

This survey aims to determine the dynamics and allocation of expenditures and to identify the conditions that affect them through analyzing the expenditures of multi-profile, regional, municipal and city hospitals.

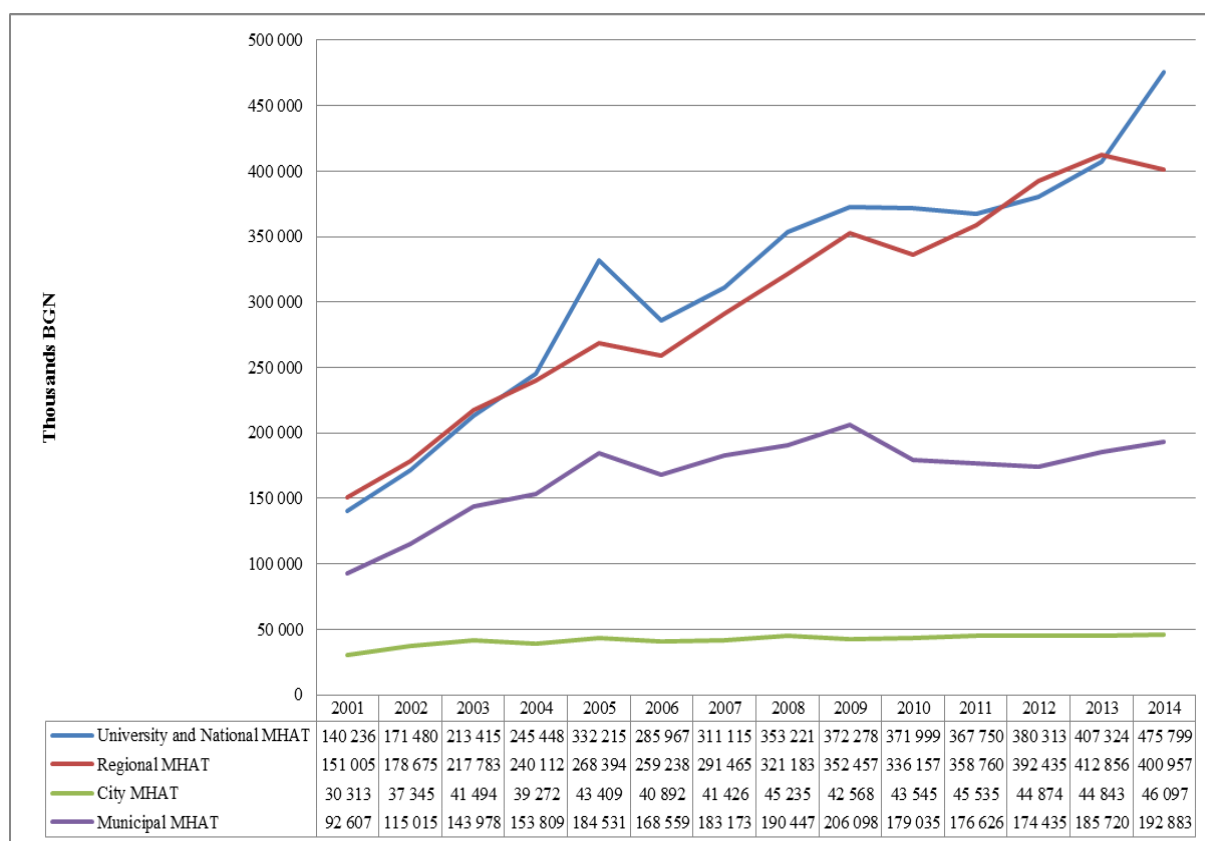
The expenditure data are reported according to the "Unified methods for separate reporting of the expenditures of healthcare establishments by all expenditure and hospital establishment types" (introduced in 1993, valid since 1997 – Decree of the Minister No ПД-09-194) by all public health establishments in Bulgaria. The methods comply with the "Unified Budget Classifier of the Republic of Bulgaria". The used data were collected from publications of the National Center of Public Health and Analyses and the National Statistical Institute, international sources and publications. The expenditure data are distributed and presented in general form in four groups: (1) staff expenses (base wages and bonuses, insurance and other payments incurred by the employer); (2) expenditures for patients' catering; (3) Expenditures for medications and (4) operational expenses, necessary for the activity of the hospital establishment (costs for energy, fuel, materials, current repair works, external services, amortization).

Total expenditures by types of hospital establishments

In Bulgaria there were 124 multi-profile hospitals for acute treatment (MHAT) with 35812 hospital beds (by 31.12.2001) while by 31.12.2014 the were 113 MHATs with 25126 hospital beds. Within this 14-year period some modifications in the statutes of some hospital establishments were made, for example, some of the small municipal hospitals were transformed into specialized establishments for post-acute and long-term care centers and vice versa – this was the cause for the reduction of the total number of MHATs in 2014 vs. 2001.

With the exception of two or three years, during the overall period 2001-2014 the expenditures of MHATs increased 2.7 times as an average. This increase by 2009 exceeded 2.2 times. In 2001 – 2009 the increase was generally even, with an average of 91 million BGN annually, with the exception of 2006 when the National Health Insurance Fund (NHIF) undertook almost all expenditures for hospital care (Fig. 1). This increase, though, was not similar for all MHAT types. The expenditures of the University and National MHATs increased 2.6 times. At the same time the expenditures of the regional hospitals raised less than the mean – 2.3 times and those of the municipal ones – 2.2 times. City hospitals marked the smallest expenditures raise – 1.4 times only. During the remaining 5-year period (2010 – 2014) the increasing of the expenditures was quite slower and in 2010 and 2011 there was a slight reduction for all MHAT types with the exception of city MHATs. The reason for that is city hospitals, with the exception of 2001-2003, when a more outlined expenditure growth was evidenced (particularly in 2002, when they reached up to 7 million BGN), during the remaining years of this period reported an even and fluctuating raise - 2-3 million BGN annually (and even with a negative sign in some of the years).

Fig. 1. Expenditures of the multi-profile university, regional, municipal and city hospital establishments in Bulgaria in the period 2001-2014 (thousands BGN)



Data source: National Center of Public Health and Analyses, Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in 2001-2008, S., 2009, pp.107-132; National Center of Public Health and Analyses., Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in 2010-2014, S., 2010, pp. 78-101.

The total increase of MHATs expenditures as a principle could be regarded as a positive sign. On one hand it supposes increased financial income that means more realized activities. On the other hand the suggestion is that the raised expenditures were associated with improved quality of the provided

healthcare (new generation drugs, new diagnostics and treatment technologies). Those suggestions, though, cannot be related to all MHAT groups. The uneven growth of the expenses of the individual MHAT groups suggests a certain trend in their development. For the municipal and, in particular, for the city hospitals – providing a huge amount of hospital care – the comparatively lower increase of the expenditures hints at underestimating of their activity. Figure 1 shows particularly clearly the wider opening of the scissors blades, particularly after 2006.

Distribution of the expenditures of the stationary health establishments

For the sake of clarity and presentation of the data in graphic format, in this part the analysis is split into two periods, namely a 9-year period (2001-2009) and a 5-year period (2010-2014).

The increasing of the expenditures itself is a prerequisite but not a satisfactory evidence for their effectiveness referring to the quality characteristics of the provided medical care. It is necessary to determine not only the amount of expenses but also the extent of their correct allocation in compliance with the missions and aims of the hospital, or – in other words – which activities exhausted the increased amount of the hospital funds.

The structure of the expenditures (Table 1) showed that in the period 2001-2009 the significantly prevailing part (over 40%) were the *expenses for the staff*. The relative rate of those expenses of the multi-profile hospitals showed a trend to increase, particularly in the period 2005 - 2009. The expenditures for the staff of the specialized hospitals had a fluctuating rate that was not associated with any particular trend. The expenses for *medicines* of the multi-profile hospitals also showed a varying rate of averagely about 26 % of all costs. The *operative expenses* of the hospitals were substantial (they included expenditures for electric supply, fuels, materials, external service providers), by 2004 they were even greater than the staff costs. Since 2006, though, a trend to reduce them has been established. This could possibly be due to targeted measures to restrict the expenses for electric power supply and for activities associated with hospital building and installations maintenance. Similar measures enable the raise of the rate of expenses for staff and drugs. The smallest relative rate of all expenses were *costs for patients' food*.

Table 1. Structure of MHAT expenses in the period 2001-2009 (%)

Expenditure type	2001	2002	2003	2004	2005	2006	2007	2008	2009
1. Staff costs	44,1	42,9	43,4	44,3	43,6	44,4	45,4	46,1	48,1
2. Drugs costs	24,8	26,3	26,2	28,2	29,4	27,9	28,7	28,0	26,2
3. Catering costs	3,0	2,6	2,3	2,3	1,7	1,9	1,9	1,9	1,8
4. Operative costs	28,1	28,2	28,1	28,2	25,1	25,7	23,9	23,9	23,7

Source: National Center of Public Health and Analyses., Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in 2001-2008, S., 2009, pp. 20, 24; National Center of Public Health and Analyses., Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in 2001-2009, S., pp. 20-24.

In the period 2010-2014 the trend was very different (Table 2). On one hand the trend to allocate the greatest funds for *staff costs* was preserved (about 2% increase as an annual average), and on the other hand the relative rate of the expenses for *medicines* decreased with every year, the greatest reduction was reported in 2010.

The staff costs belong to the “relatively constant expenses”. Their increase cannot be due to the greater number of treated patients or to the hospital bed days. It is a result only of raising the staff wages.

Table 2. Structure of MHAT expenditures in the period 2010-2014 (%)

Expenditure type	2010	2011	2012	2013	2014
1. Staff costs	51,14	52,78	53,33	54,36	55,24
2. Drugs costs	21,35	21,3	21,22	22,18	22,68
3. Catering costs	2,14	1,9	1,85	1,82	1,67
4. Operative costs	25,37	24,02	21,60	21,64	20,41

Source: National Center of Public Health and Analyses., Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in 2010-2014, S., 2015, pp. 102-112

The total expenses and their distribution by items were not similar for the various categories of hospital establishments. The data presented in Table 3 showing the expenses in the period 2001 – 2014 will be used for the comparison. The mean total increase (total for all MHATs) was 2.8 times, the items with greatest raise being the *staff* and *drugs* costs (over 2.5 times for the staff and about two-fold for medicines). At the same time the raise of operative costs was 1.5 times, and the catering costs were even reduced.

Table 3. Types of expenses (excluding capital investments) of MHATs in Bulgaria in 2001 and 2014 (thousands BGN)

Hospital type	Staff		Catering		Medicines		Operative costs	
	2001	2014	2001	2014	2001	2014	2001	2014
Total expenses	235 012	567 967	19 299	14 571	148 324	282 778	162 723	250 410
University and National MHAT	58 531	211 813	4 050	4 600	39 830	159 784	37 824	99 602
Regional MHAT	66 890	208 759	4 336	6 072	39 665	90 499	40 111	95 627
City MHAT	11 778	28 471	1 200	952	8 438	5 760	8 895	10 913
Municipal MHAT	45 385	118 924	2 927	2 947	14 874	26 745	29 419	44 268

Source: National Center of Public Health., Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in the period 2001-2009, S., pp. 107-122. National Center of Public Health., Economic analysis of the activities of hospital establishments in the public healthcare system in the Republic of Bulgaria in the period 2010-2014, S., 2015, pp. 86

This distribution of the increase approximately reflects the above cited ratio of cost rates. Again, it is different for the individual hospital types (Table 3). For the increase of the 4 main items the University and National MHATs spent most funds for staff (3.6 times), medicines (4.1 times), for operative costs (2,7 times), while the expenses for catering had a negligible raise. Significant increase of the expenditures was revealed also for regional MHATs: more than 3.3 times for staff, 2.3 times for medicines, 2.5 times for operative expenses and 1.4 times – for catering. The regional hospitals were the only establishments where a raise in catering costs was evidenced. The increase of the expenses of municipal hospitals was as follows: for staff – over 2,6 times, for medicines – 1.8 times, for operative costs – 1.5 times and there was no change in the spent amounts for catering. The city hospitals marked even a reverse trend – reduction of costs for drugs and catering. There was an increase only for staff (2.4 times) and operative activities, but it was negligible and, in spite of that, they were still below the mean for the group.

In 2001-2014 the expenditures for staff of almost all MHATs increased more than twice. The same concerned drug costs as well. The operative costs raise was not so pronounced (also with some insignificant exceptions) and the increase of the catering expenditures was yet smaller.

CONCLUSIONS

The value, dynamics and distribution of the expenditures of MHAT in the period 2001-2014 was analyzed as a total and by the main items – staff, medicines, catering and operative costs.

A total increase of 2.7 times was evidenced but it was not even for all types of hospital establishments. It was most marked for the University and National MHATs and significantly smaller for municipal and city hospitals.

The prevailing part of the expenditures was allocated to staff and medicines costs, followed by the operative costs, and the expenses for catering were the smallest ones.

The staff expenses were the greatest in the University and national MHATs.

While the relative rate of staff costs has been increasing continuously in the studied period, the rate of medicines costs has been decreasing with every year since 2009.

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