

## **BULGARIAN HEALTH SYSTEM COST ASSESSMENT METHODS APPLICATION FOR THE DECISION “MAKE OR BUY”**

**Venelin Terziev<sup>1</sup> and Stoyanka Petkova – Georgieva<sup>2</sup>**

<sup>1</sup>Full Member of the Russian Academy of Natural History, Professor, Eng., D.Sc. (National Security), D.Sc. (Economics), D.Sc. (Social Activities), Ph.D., Russian Academy of Natural History, Moscow, Russia, Vasil Levski National Military University, Veliko Tarnovo, Bulgaria  
University of Rousse, Rousse, Bulgaria, [terziev@skmat.com](mailto:terziev@skmat.com)

<sup>2</sup>Associate Professor, Ph.D., University „Prof. d-r Assen Zlatarov” – Bourgas, Bulgaria,  
[s.p.petkova@gmail.com](mailto:s.p.petkova@gmail.com)

### **Abstract**

The application of cost assessment methods for the decision “make or buy” is very useful for the private enterprises and this can be traced by the published scientific experimental evidences about the future benefits. The subject, focused of the present research is to investigate whether it is appropriate for the Bulgarian health system cost assessment methods to be used. Most of the Bulgarian hospitals are not private and this is a challenge for the health managers to lead the hospital on profit even if the financing is a mixed public-private and the regulatory issues do not allow them to take the decision “make or buy” on their own. The most important analyzed result is the impact of the decision “make or buy” on different kinds of costs that are common at the hospital activities. The present publication consists with the results from the first part of the conducted research.

**Keywords:** cost assessment methods, hospital, decision “make or buy”.

## **1. INTRODUCTION**

Bulgaria has a mixed public – private health insurance and financing system. The public health management system financing is based on the compulsory social health insurance (SHI) contributions, taxes, “out-of-pocket” (OOP) payments, voluntary health insurance (VHI) premiums, corporate payments, donations and external funding (Terziev, Petkova-Georgieva, 2019g, 2019h; Petrov, 2019a, pp. 506-518). Since the introduction of a SHI system in 1998-1999, the total health expenditure in absolute value and per capita has constantly increased even during the financial crisis in 2008-2009. The total health expenditure as a share of Gross domestic product (GDP) equally increased. And this was of a great help for the survival of the hospitals at dynamic market circumstances. At the same time more demands for the health managers became the challenge to focus on only those activities and processes which ensure maximal competitiveness for the hospitals they run. The important task is which activities the hospital managers to keep and which to buy from outer organizations like the principle of outsourcing. These problems are known in the theory as the decision “make or buy”.

## **2. THEORETICAL AND RESEARCH STUDY**

### **2.1. Analyze Aspects of the Decision “Make or Buy”**

The basic task in the process of making of that decision is to assess whether the buying of any kind product (detail, material, services, etc.) is economically beneficial in comparison with own production. For this reason, it is necessary first to be considered the strategic, time-duration, organizational and calculation

decision aspects.

Bulgaria's total health expenditure as a percentage of GDP is below the EU15 average (see table 1.). Total health expenditure as a percentage of GDP increased from 4.7% in 2013 to 7.2% in 2017 (WHO Regional office for Europe 2018). In the following years it decreased slightly to 6.5% in 2015, and increased to 8.2% in 2017 (Eurostat, 2018).

**Table 1. Trends in Bulgaria's health expenditure, selected years.**

EXPENDITURE	2013	2014	2015	2016	% OF CHANGE 2013-2017
Total health expenditure in PPP \$ per inhabitant	373	706	1059	1492	300
Total health expenditure as % of GDP	5.9	6.9	7.1	8.2	39
Mean annual real growth rate in total health expenditure <sup>a</sup>	2.1	1.8	2.7	3.3	n/a
Mean annual real growth rate in GDP <sup>b</sup>	2.0	2.6	2.8	3.6	n/a
Public expenditure on health as % of total current expenditure on health	59.6	59.9	55.4	51.1	-14
Private expenditure on health as % of total current expenditure on health	40.4	40.1	44.6	48.9	21
General government expenditure on health as % of total current expenditure on health	8.5	11.2	10.9	10.3	n/a
General government expenditure on health as % of GDP	3.5	4.2	3.9	4.2	n/a
OOP payments as % of total expenditure on health	40.4	38.9	43.1	47.7	n/a
OOP payments as % of private on health	100.0	96.9	96.8	97.5	n/a
VHI as % of total expenditure on health	0.0	0.3	0.5	0.4	n/a
VHI as % of private expenditure on health	0.0	0.7	1.0	0.8	n/a

Sources: WHO Global Health Expenditure Database (2018e).

Notes: n/a – not applicable; PPP – purchasing power parity; <sup>a</sup> – calculated as the mean of the annual growth rates in euros at previous period basis; <sup>b</sup>.- calculated as the mean of the annual growth rates in euros at previous period basis.

## 2.2. Strategic Decision Aspect

The strategic aspect of the decision “make or buy” demands to define the assessed objects according to the hospital (organization business) strategy (Terziev, Petkova-Georgieva, 2019e, 2019f; Petrova, Petrov, 2018c, pp. 213-228). The product identification that has to be analyzed about whether to be bought from others or to be owns produced (or vices versa) is attended with preliminary assessment by many qualitative and quantitative criteria. In this context there can be used the next group of questions for making an owns production diagnose:

- Which processes and activities are not important for the hospital competitiveness?
- Is it necessary some of the available production machines and equipment to be renovated?
- Do the own production contracts expect be renewed?

- Is there a decrease in the purchasing of goods and services that the discussed above activities and processes are typical?
- In which units there is increasing of costs?
- Are there any new deliverers that ensure more effective fulfilling of some processes and activities for the organization or are there any deliverers' price dropping?
- Is it necessary for some units to reduce the budget because of any strategic reasons?

### 2.3. Time Duration Decision Aspect

Time duration for the decision “make or buy” is bind with the organization structure and the specific decision objects. Time duration can be apparently short, for example when there is an unexpected outer purchasing, or it can be longer, for example when there is a delivery of any specific technologically new component that will be applied in final health care product during several years.

The uncertainty in the used information increases with the dead line time duration for outer purchasing. Control of the decision “make or buy” effectiveness for every product purchasing is necessary to be done at a preliminary fix time so the hospital plans to be realistic (Todorov, 2018c, 2015; Petrova, Petrov, 2019b, pp. 29-40). Therefore, must be a planning period time duration standard. By this way, the planning period specifies the necessary time standards for cost assessment at different alternatives – Fig.1

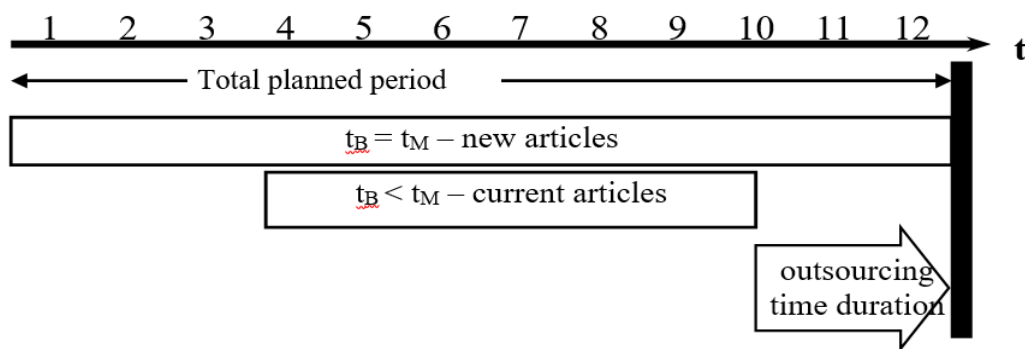


Fig.1. The planning period impact on the outsourcing time duration.

At a fix-planning period end the moment of cost calculating impacts restrictively if during the previous period there was not made a decision “make or buy”. As a result, on the one hand time duration purchasing period gradually decreases and on the other the amount of costs is changing because of the own production denial.

### 2.4. Organizational Decision Aspect

After defining the decision objects must determine which basic and subsidiary units and processes are connected with their production. This means to identify those hospital activity costs that directly correspond with the due health care products (Simeonov, 2019i, pp. 2029- 2033; Simeonov, 2019j, pp. 943-945; Simeonov, 2019k, pp. 969-972; Simeonov, 2019l, pp. 987-988).

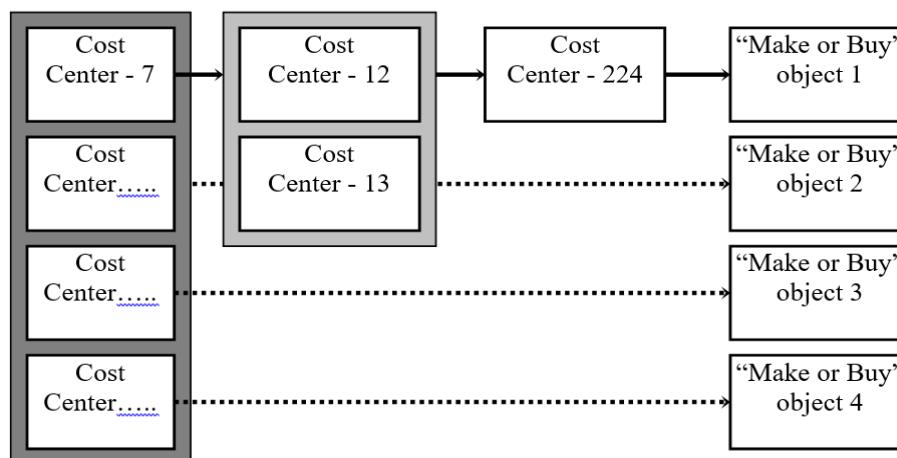


Fig.2. Organization units connected with the analyzed decision “make or buy” production objects.

## **2.5. Calculation Decision Aspect**

The different alternatives cost comparison supposes a differential cost calculation of the decision objects. For this reason, it is necessary the own production prime cost to be calculated using data from the planned calculation (Simons, 2017b).

The next two conditions must be taken for granted when a calculation cost decision “make or buy” scheme is developed. First, the own production costs to be allocated by cost elements and to be summarized by activity cost centers. Second, the fix cost information to be perceived dynamically, t.i. the fix costs must be classified by their periodical controllability. This means the calculation scheme must content a fix costs classification according to their bind time limit after which they can be curtailed (Bozova, 2017a, 2018a, pp.47-53).

## **3. CONCLUSION**

The theoretical and research study of the problem “Bulgarian health system cost assessment methods application for the decision “make or buy”” leads to the conclusion that it is realistically useful to be implicated only in the following cases:

When the hospitals need to improve their profits and the outcome of their analysis should be a decision that maximizes the hospital’s long-term financial outcome;

When the hospital managers have to make a decision: Which alternative presents the lowest total out-of-pocket cost? Health care businesses tend to include fixed costs when adding up their internal costs, which is incorrect. Only direct costs should be included in the compilation of the internal cost to manufacture a product in-house. This amount should be compared to the quoted price of a supplier.

When it is a matter of strategic importance and the health mangers have to solve the following task: How important is the “health product” to the hospital strategy? If it is very important, then it could make more sense to “manufacture the health product”, in order to maintain complete control over it.

It might initially appear that a make or buy analysis is a quantitative one that involves a simple comparison of internal production costs to a supplier's quoted price. However, the preceding points should make it clear that the make or buy decision actually encompasses a large number of qualitative issues that may completely override a numerical analysis of production costs. The description of the cost assessment methods application at a hospital leads to a conclusion that it is a very useful possibility for the hospital managers to include in their activities the experiences of such methods, because it will improve the hospital profit results as a whole.

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