D. A. TSENOV ACADEMY OF ECONOMICS - SVISHTOV

Faculty of Finance

Department of Finance

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ABSTRACT

of a dissertation for the award of the educational and scientific degree 'doctor' in the doctoral programme „Finance, Money circulation, Credit and Insurance (Finance)" on the topic:

Healthcare financing models: limitations and capabilities

Scientific advisor:

Assoc. Prof. Aneliya Kirilova Radulova, PhD

Svishtov

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The dissertation was discussed and proposed for defence by the Department of Finance and Credit at the Faculty of Finance of D. A. Tsenov Academy of Economics - Svishtov.

Description of the dissertation:

Number of pages – 191

Number of figures – 50

Number of tables – 7

Number of references – 101

Number of publications on the topic– 4

The defence of the dissertation will be held on 31.03.2023 at 10:30 hrs. at the Rectorate Conference Hall of D. A. Tsenov Academy of Economics – Svishtov.

All materials related to the defence shall be available upon request at the Department of Academic Studies and Academic Staff Development.

CONTENTS OF THE ABSTRACT

I. General characteristics of the dissertation

1. Relevance of the topic

Healthcare is an activity of high human value, which requires substantial financial resource. It is a concern of all economic agents – the state, the business and the households. As back in time as the establishment of the World Health Organization (WHO), a consensus was reached by the 61 representatives of WHO member states that "health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity (WHO, 1947). The decent distribution of the target publicly accumulated resources for healthcare also requires a consensus for the development of the system according to priorities and strict mechanisms for controlling the spending of funds. It is not by chance that six priority areas have been identified in the draft National Health Strategy 2012-2030, among which "Ensuring financial sustainability of the system - policies for effective financing" is in the sixth position (Ministry of Health, 2020). Health care is not just a vital necessity, but a civilizational norm and should be available to all citizens. Financing in healthcare can also be considered as a mechanism for raising, distributing and spending funds to provide for healthcare in the required size and at the relevant quality standards. Financing models must ensure sufficient and stable revenues at all levels of the health system and thus provide for the fair and efficient distribution of limited financial resources. Healthcare itself has two leading structural components - pre-hospital and hospital healthcare. The second component is practically the foundation of the system, as for Bulgaria at its centre are the National Health Insurance Fund (with central management in the capital Sofia and 28 regional structures in each of the country's 28 regional settlements) as the the funding body and the Ministry of Health as a body for conducting the state health policy. Every single model for providing health care and health services is normatively regulated and is based on political

will, resp. a mandate for action given by voters to politicians. The principles, listed in Art. 5 of the Bulgarian Health Insurance Act - obligatory participation, solidarity of the insured persons, responsibility of the insured persons for their own health and equality in use of medical care - are the basis for conducting a policy of quality in health services, which, however, require corresponding financing.

2. Object and subject of research

The object of research in the dissertation are the healthcare financing models.

The subject of research are the limitations and the capabilities of the healthcare financing models in view of healthcare specifics and normative organization in terms of their implementation in the relevant national healthcare system following the example of the in-patient healthcare establishments in Bulgaria.

3. Research thesis statement

The main **thesis statement** defended in the dissertation is that *the adaptation of the financing model of the health care system in Bulgaria to the specific socio-economic indicators of the environment is a necessary condition for overcoming resource instability resulting from the permanent deficit of budgetary resources and determinants of financing that prioritize the quantity at the expense of the quality of health services*.

4. Purpose of research

The purpose of research is to analyze the advantages and the disadvantages of the healthcare financing models, their specifics and application in order to

overcome the problems in the budgetary provision of healthcare in Bulgaria, following the example of the in-patient healthcare establishments.

5. Tasks, working hypotheses and research methodology

To achieve the purpose of research following tasks are set:

1. To analyze the regulations on the hospital activity in terms of financing, the sources, methods and control over cash flows from the patient to the NHIF and the healthcare establishment.

2. Outline the main sources of healthcare financing and identify the advantages and disadvantages of the used sources of financing in the process of healthcare organization;

3. To identify the specifics of the existing in the world practice models for healthcare financing and to evaluate the possibilities for their application in healthcare financing in Bulgaria.

4. Based on an empirical analysis of the dynamics of the main variables concerning healthcare financing in Bulgaria for the period 2017-2022, to evaluate the healthcare financing model, analyze the specifics and highlight the problems in healthcare financing in Bulgaria.

5. To conduct a survey of the opinion of managers of healthcare facilities and patients, in order to assess the degree of effectiveness of the method of financing healthcare facilities through the valuation of health services through clinical pathways.

Based on the controversy of the investigated topic, the following working hypotheses are formulated:

First working hypothesis: Gaps in the standardization, the license and the framework contract as well as the monopoly of the NHIF, which unilaterally determines the cost of treatment, lead to insufficient financing and inefficiency in the performance of the healthcare establishments.

Second working hypothesis: The established practice of providing financial resources primarily based on the value of clinical pathways included in a framework contract does not imply effective and appropriate use of financial resources and limits the possibility of providing quality health services to the population.

Third working hypothesis: The healthcare system in Bulgaria, based on more than 300 in-patient healthcare establishments under contract with the National Health Service, generates both deficits and surpluses in territorial and resource terms, which correlate with imbalances in the spatial scope of the North-West Planning Region (BG 31).

In the process of research, the following **methods** were applied:

Sociological methods. Because of the specificity of the analyzed activity, the sociological method is very suitable to make comparisons regarding the activity of in-patient healthcare establishments from all possible points of view. For this purpose, a survey method was used. Two surveys were conducted, the questions selected in such a way that the results achieve maximum precision, accuracy and clarity for the problems in healthcare and the specifics in the activity of the in-patient healthcare establishments. The Delphi method was used only in its basic part, since there is no difference in comparison between past and present periods. In this sense, no change of opinion of the respondents is expected, compared to the answers of the other respondents. The reform in the hospital sphere is only partial, episodic and in this sense does not change the overall concept.

The *documentary method* was also used, official sources of the Republic of Bulgaria were studied - the array of documents of the Ministry of Health, the National Statistical Institute, and the National Health Insurance Fund**.**

Data sources: NHIF, NSI, Ministry of Health, Eurostat, survey questionaries, etc. Data was processed with a statistical method as well as using

the functionalities of MS Excel, which was also used in the preparation of the illustration tables and graphs.

6. Scope of research

The time scope of the dissertation covers the period from 1998 (the introduction of the new model for financing healthcare in Bulgaria through the Health Insurance Act) to 2021 with a particular intensity of data, analysis and research in the last three years.

7. Structure of the dissertation

The total volume of the dissertation is 191 standard pages, structured in three chapters, an introduction and a conclusion as follows:

8. Applicability of the results

The theoretical arguments developed in the dissertation and the derived empirical results are a basis for enriching the implemented policies in the health care sector and making decisions for adequate and urgent reform.

9. Constraints to the dissertation research

The constraints to the dissertation research leave out of the scope of the analysis the Covid-19 pandemic with its enormous pressure on the health system in 2020-2021. The actions of the political and professional management of the Ministry of Health and the responsible persons and institutions in this force majeure situation should be evaluated in other, further research papers which also requires an appropriate time factor and database for international comparison. Pre-hospital health care, which through the system of general practitioners is part of the sector reform introduced more than two decades ago, remains outside the scope of the dissertation research, too.

II. Resume of the dissertation thesis

Chapter one. FINANCING MODELS AND ORGANISATION OF THE HEALTHCARE SYSTEM

The focus in chapter one is on the theoretical aspects of the financing and organization models of the healthcare system. The analysis of the specifics of the healthcare financing system gives us the basis for the following conclusions and generalizations:

First. Health care requires a substantial financial resource, transparent management and control over the movement of cash flows, as well as their proper spending. Health financing is a challenge in countries all over the world.

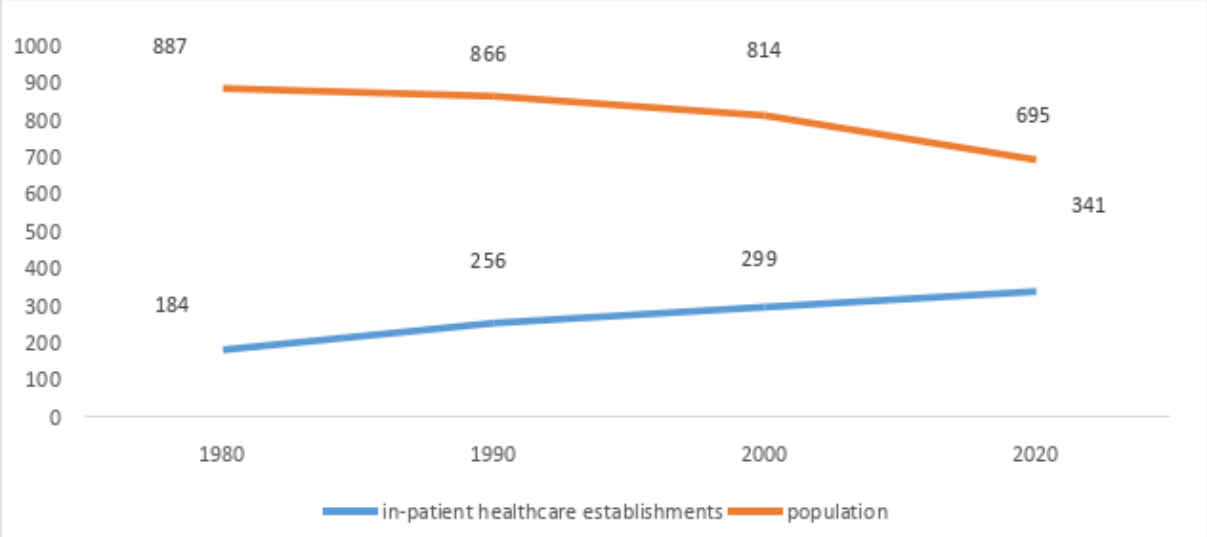

Figure 1. Number of in-patient healthcare establishments and population of the Republic of Bulgaria for the period 1980 - 2019

Continuous reforms unfold not only in our country, but also in countries with a high standard of living, and in the conditions of Covid-19 it was established that each national system has an operational threshold and the economic

performance of individual countries is at risk (Mihaylova-Borisova, 2020). Quality and affordable health services can be provided only through choice of adequate models, sources of financing in view of the specifics of the activity. According to the sources of financing, healthcare can be conditionally divided into several types: publicly funded health care, privately funded and provided by companies (Jambazov, Slavchev, Alexiev, Kolev, & Vekov, 2018) through a system of agreements.

Second. The health system is a collection of many activities and many participants in it. Health care is a system that includes many activities - medical, political, economic, legal, social and many others. The participants are conditionally divided into two groups - those seeking medical help and those offering it.

Third. There are several basic models of health systems in the world and their derivatives (hybrid models of expressed national characteristics). In the first category, we should evaluate the advantages and disadvantages of: a) the Beveridge model, providing health care for citizens from a national health service, the system being fully financed by taxes; b) the Bismarck model, forming the funds for health care from health funds, c) the Kennedy model (The Out-of-Pocket Model), according to which health care is entrusted to the private sector, d) national models, of a hybrid nature, incl. the Semashko model.

Fourth. The main sources of financing in health care can be synthesized in two directions - according to the source of formation of funds in the system and according to the form of their use. External financing can be considered a complementary source. In the case of social health insurance, we have a compulsory component, in some cases a voluntary component. It is organized by the government and is part of the remuneration of persons employed under an employment contract. Countries using such a model are Germany, France, the Netherlands, Belgium, etc.

Table 1. Comparability of healthcare models by type of financing, providers and access

Model	*Type of financing*	*Type of providers*	*Access to healthcare*	*Countries in which it is applied*
Beveridge	mostly public, a small ⁒ private, voluntary	public and private	accessible to all potential patients	Great Britain, Scandinavian countries, Italy, Spain, Portugal, Greece, etc.
Bismarck	From employee and employer contributions	Private	accessible	Germany, France, Belgium, Japan, etc.
Kennedy	private	Private	accessible to part of the population, with medium and high incomes	the USA, part of Asia and Switzerland (Петкова - Георгиева, 2019)
The national health insurance model	private	Private, controlled by the state	Accessible with universal access programmes	Canada
Semashko	public	Public	full access to health services for all	Russia, Canada and Bulgaria by 1990
Singapore	public	Private	full access	Singapore

Source: Author's view

In the case of the private health insurance, we have a voluntary basis. It is carried out by private companies, contributions can be fixed or differentiated, according to the patient's health risk. This principle of insurance is most common in the USA and least common in Europe. Health insurance from an employer is offered as parameters as early as the stage of concluding an employment contract, when the type of health insurance is agreed. Since in this model, employers allocate significant funds, they are relieved by the state in the form of recognized social costs or tax preferences. A typical representative of this type of insurance is the USA (Делчева, Евгения МЗ, 1998).

Chapter two. CONCEPTUAL FEATURES OF HELATHCARE FINANCING IN BULGARIA

Chapter two presents an analysis of the specific features of healthcare financing in Bulgaria, with a particular focus on the role and capacity of the NHIF as the main factor in the Bulgarian model.

From the analysis thus presented and the author's assessments in chapter two, regarding the features, limitations and opportunities in health care financing, we can derive the following conclusions:

First, most countries use an indicator that reports the level of financial resources invested in healthcare – as a percentage of GDP. A more objective picture is obtained when using a revised indicator - a percentage of GDP which reflects the volume of budget expenditures for healthcare. Its generally accepted minimum value is 5%. If the expenditures in the state budget for healthcare are lower, then according to WHO recommendations, the level of health care financing in the country is considered critical.

Second, the macroeconomic indicators that are used in international practice are:

- per capita total expenditure on health and the structure of financing of the health systems;
- the share of government expenditure (budget financing) in total expenditure on health;
- the share of funds paid to finance healthcare by the population as compulsory payments (taxes, insurance premiums);
- the share of household expenditure in private financing of health care.

Third. Despite the systemic shortage of referrals general practitioners suffer, the reform has largely succeeded in the outpatient sector. The expenditure of this sector cannot be compared to that of the clinical activity. The main

financing of the health system is carried out through reimbursement on clinical pathways.

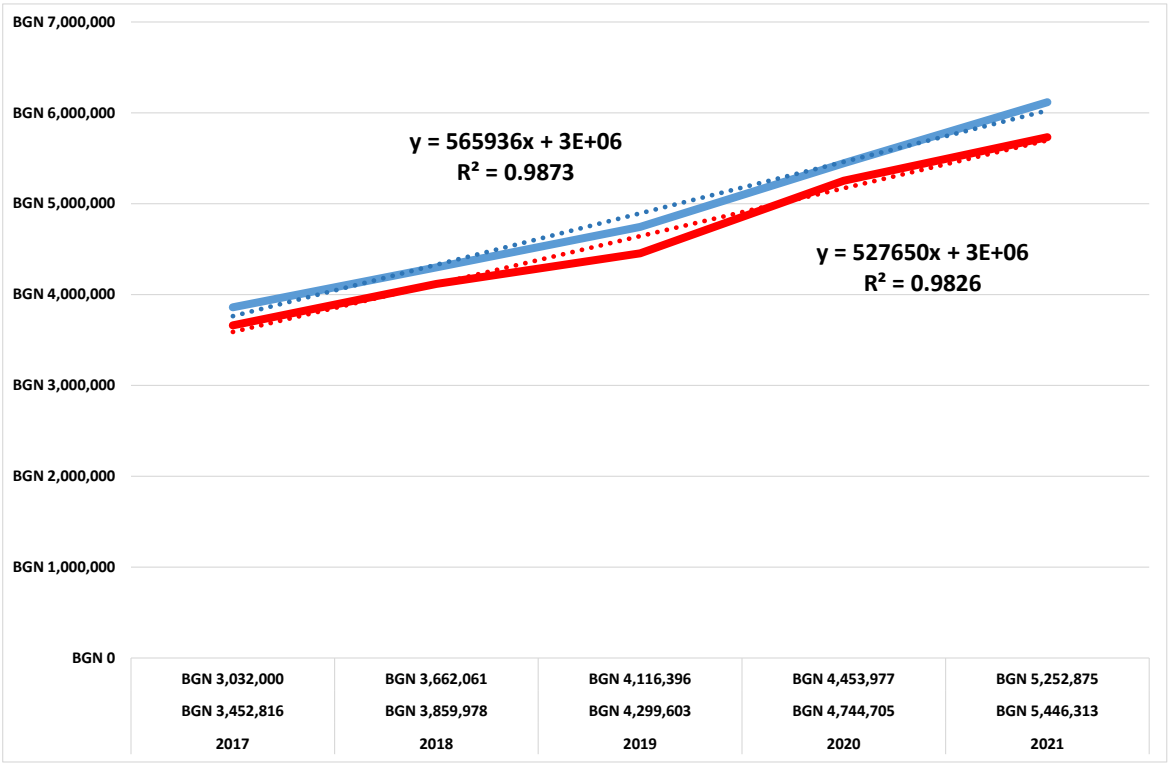

Figure 2. Trends in the budget of the NHIF (2017-2022)

This way, after the patient treatment and ex ante budgeting of medical activities for diagnosis and treatment, the respective in-patient healthcare establishment claims the reimbursement of the expenses by the NHIF. However, their size is constant for each clinical pathway, regardless of the specifics of treatment of individual patients. It is this equating of the costs for treatment of unique and specific medical cases that creates inequity and decapitalization in the system. The budget of the National Health Insurance Fund - the only operating health fund in the country - for the last three years reached BGN 6.116 billion.

Fourth. When testing for significance of a statistical model by Fisher's F-criterion with a confidence interval above 99%, the significance of the regression dependence of health insurance payments on revenues and transfers in the NHIF

of the highest order is established. The correlation coefficient for both time series is positive and amounts to 0.995 with a standard error of 0.117.

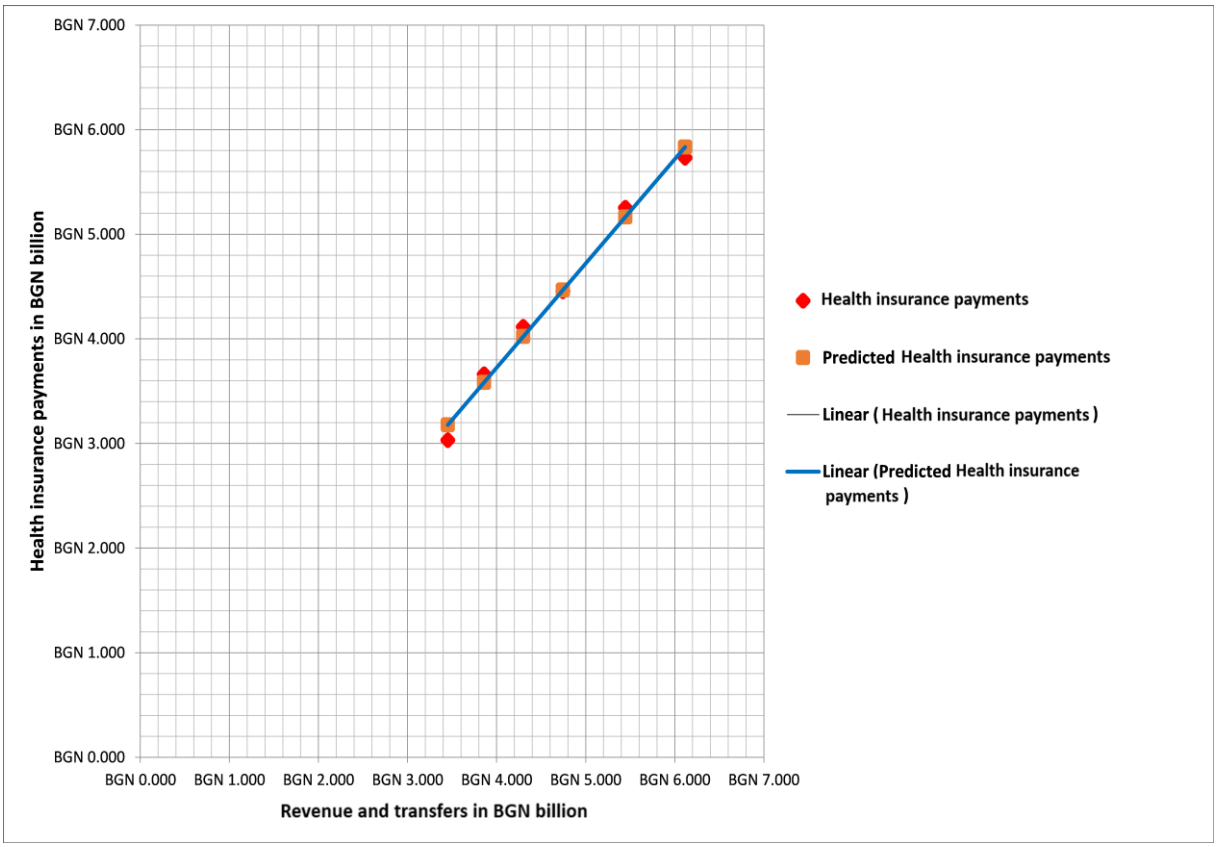

Figure 3. Graphical distribution of the best-fit line for the dependence of health insurance payments on revenues and transfers to the NHIF for the period 2017-2022.

Fifth, due to the distribution of outpatient activities and the unique geographical saturation of specialists in the regions of the country, health competition is formed between individual regions and cities. Usually the leading centers and practices are positioned in the big regional cities and in the bigger municipalities.

Chapter three. FINANCIAL MANAGEMENT IN THE HEALTH ORGANISATIONS IN THE CONTEXT OF THE DEVELOPMENT OF MARKET RELATIONS

Chapter three focuses on the problem of financial management of healthcare organizations in a competitive market environment.

Based on the analysis of the financial management of health organizations in terms of market relations, presented in chapter three we can derive the following results, conclusions and generalizations:

First. The management of the healthcare system is atypical, requiring a complex approach and skills. Financial management is a major factor in healthcare. Health as an end product is vital and socially significant. The health reform in the Republic of Bulgaria, lasting more than 20 years, has not reached the desired efficiency. The reason for this can be found mainly in the partial reforms that are made at certain periods of time. These reforms hamper the overall functioning of the system, disrupt the connections in its units, create prerequisites for difficulties and mistakes.

Second. Healthcare requires a large financial resource. The main source of funding for healthcare establishments in Bulgaria remains the NHIF. Hospitals as commercial companies fail to achieve a positive financial result, they do not have funds to invest. Private hospitals face a market with increasing competition, which makes state-owned companies increasingly inefficient. The NHIF, as the only funding body and as a monopolist in the health services market, values payment on clinical paths unilaterally.

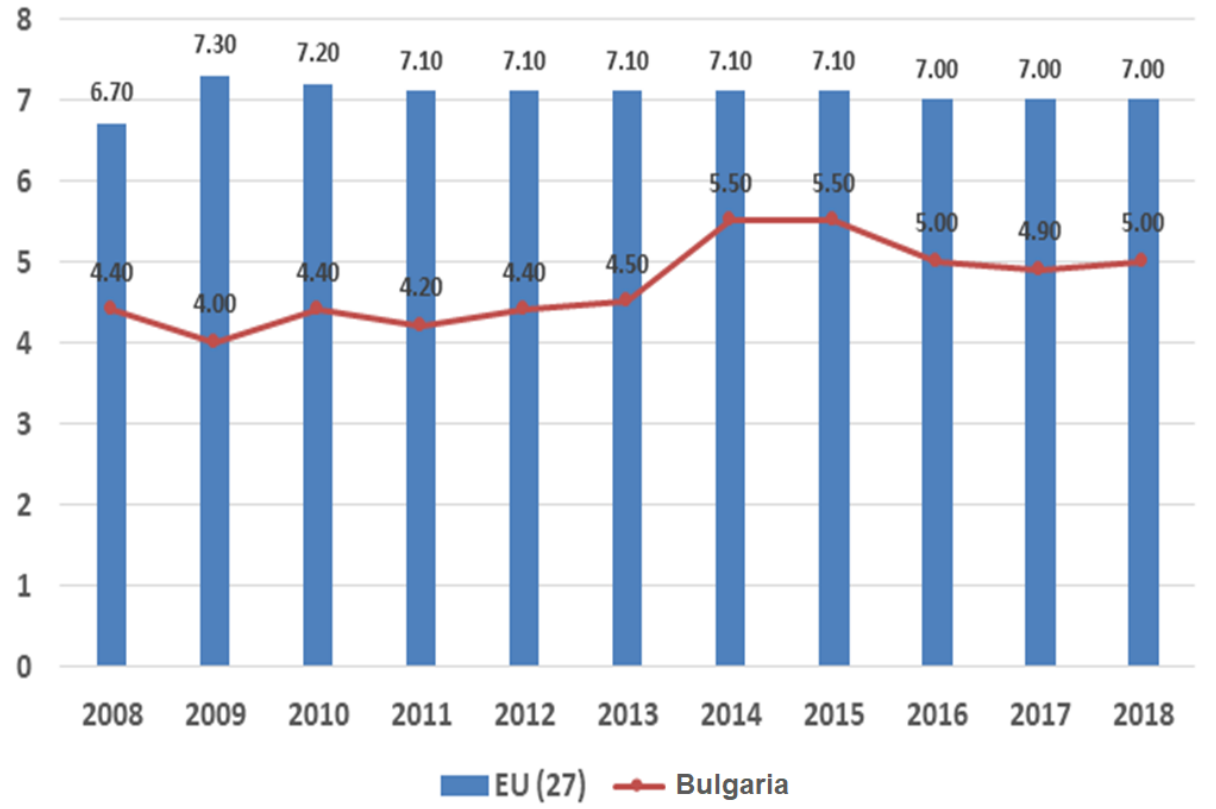

Figure 4. Relative share of budgetary expenditure on health care in % of GDP for the period 2008 – 2018.

The amount that is reimbursed by the NHIF, in a large percentage of cases, does not cover the costs incurred by the healthcare facility. It is necessary to create conditions for increasing the number of health insurers, and at this moment this could be done mainly with public resources, as well as a core policy of the state.

Third. The reform in pre-hospital care (GPs, specialized outpatient activity) shows a positive trend in this sector. In the last ten years, the number of medical centers has been increasing. The number of transformations of specialized hospitals for active treatment (SHAT) to multi-profile hospitals for active treatment (MHAT) has also been increasing, and these are mainly private healthcare establishments. The main problem remains the relationship between the individual units of the primary and clinical treatment activities.

Fourth. The survey conducted by the author confirms the thesis statement of the urgent need for reform in hospital activity. It covers as respondents the main participants in the health system – patients and managers of healthcare establishments. Additionally, a methodology for reporting the opinion of doctors is developed. The detailed analysis carried out shows one issue common for the surveyed parties – the need of a comprehensive reform in the hospital activity sector (the main highlights being - the registration of healthcare establishments as commercial entities that do not have access to public finances; the valuation of clinical pathways and the monopoly of the NHIF).

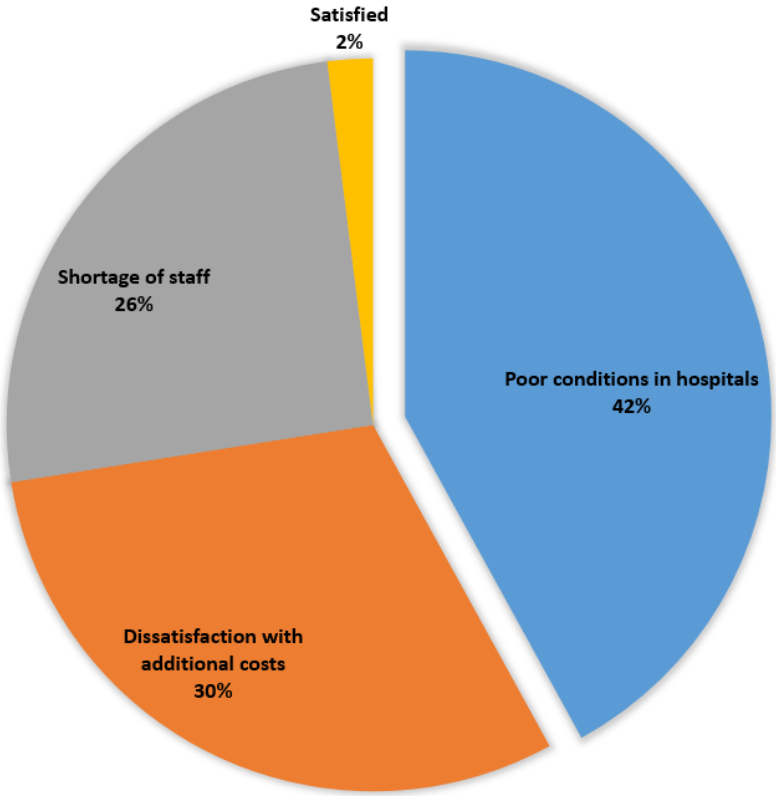

Figure 5. Main reasons for patient dissatisfaction with hospital activity in Bulgaria

	UMHAT SVETA MARINA OOD			MHAT AVIS MEDIKA OOD				MHAT SVETA PETKA AD, VIDIN				MHAT NIKOPOL EOOD				MHAT KNEZHA EOOD	
	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021	2020	2021
Balance sheet items																	
ASSETS - TOTAL (A+B+C+D)	19218	19981	20738	6998	7509	8356	6565			19901	19958	351	361	417	420	1405	1366
A. Not paid-in capital										17545	17455						
B. Non-current (fixed) assets - TOTAL (I-IV)																	
I. Intangible assets	14	1	0	16	3	22	100			3	0	0	0				
II. Fixed assets (I+II)				496	1062	1014	2375			16071	15928	301	312	287	276	340	290
1. Land and buildings	190	178	166							16071	15928	233	226	218	212	170	174
2. Machines and production equipment	187	306	378	433	501	597	2179			1433	1200	65	84	67	62	108	78
3. Facilities and other	173	160	302	62	34	417	196			33	27	3	2	2	2	62	38
III. Long-term financial assets	15786	15786	15786							5	5	0	0				
IV. Deferred taxes												0	0			7	5
C. Current (short-term) assets - TOTAL(I-III)				282	629	459	579					301	312	287	276		
I. Inventory	47	81	50	282	629	459	579			286	290	9	6	10	9	68	57
II. Receivables	2800	2848	3882	3357	2551	2243	2706	579	1082	365	1249	34	36	2	2	336	261
III. Financial assets	14	518	64	2826	3239	4593	765			1705	964	7	7	118	133	650	746
D. Deferred expenses	7	102	99	21	25	25	40									4	7
LIABILITIES - TOTAL (A+B+C+D)	19218	19981	20738	6998	7509	8356	6565			19901	19958			417	420		
A. Equity (I-VI)								11153	11189								
I. Registered capital	1102	1102	1102	5	5	5	5			3767	6183	88	88	88	88	181	181
IV. Reserves	567	567	567	1124	1124	1125	1125			93	88	325	325	325	325	18	231
V. Accrued profit (loss) from previous periods	1284	2520	3617	4371	4898	4633	2347	-4319	-4092	-3967	-3814	-881	-934	-815	-706	2	5
1. Retained earnings	1288	2524	3622	4371	4898	4633	2347			0	0	16	16	135	244	2	5
2. Uncovered loss	4	4	5							3967	3814	-897	-950	-950	-950		
VI. Profit (loss) from the current period	1236	1098	1302	527	114	1358	987			170	21	-53	118	109	139	217	177
C. Liabilities, incl.	15029	14694	14150	970	1367	1235	2101			3931	3645	799	721	667	555	810	696
1. up to 1 year	6177	7305	8491	970	1367	1235	1131			2764	2879	112	129	192	149	794	685
2. more than 1 year	8852	7389	5659	0	0	0	970			1167	767	687	592	475	406	16	11
D. Deferred revenues and funding										2621	500	54	24	24	0	177	76

Fifth. The financing in the healthcare sector is insufficient. An analysis of the capital positions and balance sheets of selected healthcare establishments in the North West Planning Region (BG31) – private and public – shows an increase in expenditure and a decrease in income across the sector. When evaluating the income and expenses of the specific healthcare establishments, it the hypothesis that private hospitals are stable in the market of health services and report recapitalization is confirmed. The state and the municipal companies have been increasing expenses and liabilities, incurring losses, reporting decapitalization. All this happens with equal access to a competitive market in which private in-patient healthcare establishments have consistently better financial performance.

Conclusions

The structure and the way of functioning in the healthcare sector in the Republic of Bulgaria, can be improved through an extensive and large-scale reform. The practice of recent years has shown that partial reforms are not only ineffective, but also intensify and deepen the existing problems. Hospital activity needs to be reformed in terms of structure, organization and, above all, provision of financial flows.

Better health care requires bigger government spending on training, innovation and investment. Medicine has been developing at a very fast pace, the lagging behind of the state and municipal hospitals in growth leads to a lower quality of the service provided.

The monopoly of the NHIF is emerging as one of the most important problems facing our health system. On the one hand, monopoly is unhealthy for a market economy, because hospitals are in the market as commercial entities and as such, they cannot dispose of public finances. On the other hand, the NHIF

budget is too large in terms of accumulated annual resources to rely on attracting private investors to establish competitive alternative health funds.

The large number of in-patient healthcare establishments also degrades the quality of services in hospital activity, as the same financial resource – the pooled health contributions – is distributed to a much greater number of users. This is precisely the basis of the notorious so-called process of "draining" NHIFs. A very large number of small state/municipal hospitals are unable to perform basic treatment packages, use a clinical pathway and discharge patients - who are admitted to a hospital that has the resources to carry out the treatment and again use a clinical pathway. It is necessary to introduce new license rules and requirements to meet medical standards, as well as to precise the requirements under the National Framework Agreement. This will allow the normal functioning of the medical facilities that perform hospital activity at a high level of quality of the provided health care - diagnosis and treatment.

It is highly necessary the state to support the healthcare sector. Health is not a product of a nominal value and it is extremely publicly-oriented. Urgent reform is needed in the legal status of medical institutions. Their current registration under the Commercial Law is definitely an obstacle to additional financing with public budget resources (outside of those from the NHIF).

III. Directions for future research on the topic of the dissertation paper

Because of the controversy of the investigated topic and its direct connection with public welfare, possible directions for future research can be outlined:

First. Conducting a survey among respondents from the medical profession regarding the direction and plan for the implementation of health reform and improvement in the fairness of financial flows in the healthcare financing model in Bulgaria.

Second. Assessing the strategic nature of the system of in-patient healthcare establishments and their suitability to function in future pandemic crises.

Third. Development of a methodology for researching the processes of fraudulent reporting of clinical pathways to the NHIF, which lead to inefficient spending of resources collected from insured persons through the public health insurance system.

Fourth. Investigating the cash flows between pharmaceutical companies and the in-patient healthcare establishments in search of possible weaknesses in the system that are based on price imbalances between private and public hospitals.

IV. List of the scientific and applied contributions of the dissertation paper

First. Based on a critical analysis of the healthcare system in Bulgaria, trends and problems have been identified and argued, which confirm the public relevance of the topic of the urgent change in the way of financing health care, a reform of the legal status of in-patient healthcare establishments, with the aim of achieving the improvement in indicators of the health status of the population in Bulgaria.

Second. The main characteristics of financing models in a global aspect are derived and an evolutionary analysis of a model applied to health care through health insurance in Bulgaria is performed. The advantages and imperfections, limitations and possibilities of the specific models are outlined. The positive characteristics of each model and its scope of application in different countries are argued, according to geographical specificity, the degree of development of market relations, history and political dimension in each of them.

Third. A regression-correlation analysis of the dependence of health insurance payments on revenues and transfers in the NHIF was conducted. Significance testing by Fisher's F-test, with a confidence interval greater than 99%, established significance of the highest order, with results also confirmed by statistical analysis of the data on a chain basis.

Fourth. In order to establish an effectively functioning healthcare system in the healthcare sector in Bulgaria, a survey was tested, aimed at the three main groups - managers of medical facilities, doctors and patients, with representative data from the respondents with verbal-graphic models in the part about the medical facilities and for the patients.

Fifth. On the basis of the analysis of the results of the conducted research on the functioning of the healthcare model applied in Bulgaria, its advantages and

imperfections, views have been drawn regarding the need for a comprehensive reform in the sector with the aim of increasing the efficiency of financial flows in healthcare and achieving a social result – better health for all and a positive economic effect from it.

Sixth. An empirical study of data from financial statements of selected hospitals from the North-West planning region confirmed the estimates of significant disparities, both in terms of geographic location and ownership, where private hospitals report improved financial performance and state district and municipal ones - losses and growing indebtedness.

V. Publications on the topic of the dissertation paper

I. Studies (2):

Ivanova, A. (2022). The health insurance reform in Bulgaria – financing models and status evaluation. Economic Archive, (4), pp. 88-108, URL: https://nsarhiv.uni-svishtov.bg/title.asp?title=2791

Ivanova A. (2020). Financing of the healthcare in Bulgaria = state, trends, opportunities for optimization. Annual Almanac "Scientific Research of Doctoral Students" - (XIII), pp. 455-475, URL: https://almanahnid.uni-svishtov.bg/title.asp?title=2662

II. Articles (1):

Ivanova, A. (2019). Sources and models of financing healthcare – specificity and effectiveness of health services. Annual Almanac "Scientific Research of Doctoral Students" (XII), pp. 313-324, URL: https://almanahnid.uni-svishtov.bg/title.asp?title=1524

III. Scientific reports (1.):

Ivanova, A. (2021). Financial management of the healthcare. Papers from the scientific conference "Logistics and public systems". Vasil Levski National University Printing House, ISSN 2738-8042, pp. 665-662.

VI. Reference for compliance with the national requirements under the Rules for Implementation of the Law on the development of Academic Staff in the Republic of Bulgaria

National requirement for number of points: **30,00**

Number of **studies**, published in non-refereed peer-reviewed journals, or published in edited collective volumes: 2

Number of points for the author: 30 points

Number of **articles**, published in non-refereed peer-reviewed journals, or published in edited collective volumes: 2

Number of points for the author: 10 points

Number of **reports** published in non-refereed peer-reviewed journals, or published in edited collective volumes: 1

Number of points for the author: 10 points

Total number of points: 50,00 > 30,00

VII. Statement of originality

The dissertation paper in the volume of 191 pp., titled: "Healthcare financing models: limitations and capabilities" and the abstract of the dissertation paper are own research work of the author. It presents own ideas, text and graphic presentation using figures, tables and formulas in strict compliance with the requirements of the of the Copyright and Related Rights Act, including by properly citing and referencing the sources of information used, including:

1. The results achieved and contributions made in the dissertation are original and have not been borrowed from research and publications in which the author has not participated.
2. The information provided by the author in the form of copies of documents and publications, personally compiled references, etc. corresponds to the objective truth.
3. The scientific results obtained, described and/or published by other authors are duly and extensively cited in the text and in the bibliography.

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/Doctoral student Ana Borisova Ivanova/