

**TO THE MEMBERS OF THE SCIENTIFIC JURY
IN THE PROCEDURE FOR THE ACQUISITION OF
PHD DEGREE IN THE PHD PROGRAM "FINANCE, MONEY, CREDIT, AND
INSURANCE (FINANCE)"**

REVIEW

Reviewer: Assoc. Prof., PhD Nikolay Blagoev Ninov, Department of "Insurance and Social Security", Faculty of Finance, Academy of Economics "D. A. Tsenov" - Svishtov, scientific specialty "Finance, Money, Credit and Insurance"

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Dissertation Topic: "Healthcare Financing Models: Limitations and Opportunities"

This review has been prepared by the requirements of the existing Law on the Development of the Academic Staff, the Rules for its Application, and the Rules for the Development of the Academic Staff in Academy of Economics "D. A. Tsenov" - Svishtov.

I. General presentation of the dissertation work.

The dissertation is a theoretical-applied scientific study in a volume of 191 pages, during the development of which the classical structure was observed and the observance of the balance of the individual parts and logical sequence between its constituent elements was observed. In terms of composition and content, it includes: a table of contents (3 pages), a list of abbreviations used (2 pages), an introduction (9 pages), main text in three chapters (143 pages), and a conclusion (5 pages). There are a total of 57 graphic images in the development, including 7

tables and 50 figures. 3 appendices are also included with the dissertation - 15 pages in total.

The list of publications on the topic of the dissertation (1 page), contains 4 publications, including 2 studies, 1 article, and 1 report, through which the author has formalized his research findings to the scientific community.

The presented development's chosen topic is distinguished by dispersibility, current sound, scientific significance, and social usefulness.

The relevance of the research is determined, on the one hand, by the permanent search for an answer to the question "Is the chosen and operating model for financing the health care system the most appropriate?" in quantity and regular as transfers, financial means for the health system, guaranteeing in this way, the much desired - fair and efficient distribution of limited financial resources, in the conditions of extreme growth of health costs at all levels.

The subject of research is "healthcare financing models".

The subject of the development is "the limitations and opportunities in the models for financing health care given its specificity and normative organization on the occasion of their application in the relevant national health system, following the example of medical facilities for hospital care in Bulgaria".

For **the main purpose** of the dissertation development, the author has defined – "to analyze the advantages and disadvantages of the health care financing models, their specifics and applied evidence to overcome the problems in the budgetary provision of health care in Bulgaria on the example of the hospital medical facilities help".

To achieve the thus formulated main goal, the doctoral student has defined the following **tasks**:

1. To analyze the regulations concerning the hospital activity in terms of financing, the sources, methods, and control over cash flows from the patient to the NHIF and the hospital.
2. To outline the main sources of health care financing and to identify the advantages and disadvantages of the applied sources of financing in the process of health care organization.
3. To identify the specifics of the existing world practice models for health care financing and to evaluate the possibilities for their application in health care 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 survey the opinion of managers of medical facilities and patients, to assess the effectiveness of the method of financing hospital facilities through the valuation of health services through clinical pathways.

In the course of scientific development, the author states three working **hypotheses**:

First working hypothesis: Gaps in the standardization, the license and the framework contract, and the monopoly of the NHIF, which unilaterally determines the cost of treatment, lead to underfunding and inefficiency in the operation of medical facilities.

Second working hypothesis: The established practice of providing financial resources primarily based on the value of clinical pathways approved by 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 health care system in Bulgaria, based on more than 300 medical facilities for hospital care under contract with the NHIF, forms both deficits and surpluses in territorial and resource terms, which correlate with imbalances in the spatial scope of the North-West planning region.

The selected methods used in the research process are sociological, documentary, and statistical.

The author has also declared two specific limitations in the scope of the research in the development of the present dissertation work. The first of these is related to ignoring the COVID-19 pandemic because on the one hand, it outlined the “defects” of our healthcare system, but on the other hand, the force majeure circumstances as a result of its impact could overexpose and distort the results of empirical research, and from there lead to wrong conclusions. The second limitation is related to the exclusion of pre-hospital health care from the focus of the development, as it represents a separate field for research, with specific problems and statutory mechanisms of functioning.

In support of the ideas presented by the author, 101 sources of **scientific literature** were used, 21 in English and 80 in Bulgarian, formed according to the

requirements in a list within 11 pages. The sources are used correctly and the citation complies with the accepted ARA standard for bibliographic citation.

II. Assessment of the form and content of the dissertation.

The research is in sufficient volume, with good research logic and a balanced structure. The style used is both scientific and understandable, and the scientific methods chosen by the author are adequate to the defined object, subject, goal, and tasks, which are precisely formulated. Emphasis is placed on the reform of the health care system in Bulgaria, after which the sources of financing in health care are systematized and the forms of organization of health insurance are presented and the experience of our country in this regard is presented.

As a starting point in Chapter One "Models of financing and organization of the health care system", the doctoral student has accepted the clarification of the characteristic features and specifics of the healthcare system from a theoretical-methodological point of view, followed by a theoretical multifaceted overview of the existing models in theory and practice worldwide of healthcare. In a summarized form, the conclusions reached from the first part of the development are in the following directions: 1) health care financing everywhere in the world appears both as a key condition and as a serious challenge for every country; 2) health care includes an ever-increasing number of activities, which is a prerequisite for an increase in the number of participants in it, and hence the logical "intersection" of a larger set of diverse interests - medical, economic, social, political, legal and many others which arise both from the internal and external environment, and which should be satisfied at the appropriate level; 3) sources of financing are classified according to the way funds are formed in the system and according to the form of their use, and on this basis the most frequently used systems for financing national health care are presented.

In Chapter Two "Conceptual Features of Health Care Financing in Bulgaria", the emphasis is placed entirely on the Bulgarian health care system, in its part - specifics in the development, sources, and technologies of financing, budget and scope of financing, and ends with the structure and financing of the National Health Insurance Fund. In summary of this part, the following findings are made: 1) although public and private medical facilities are registered under the same law, they do not function on an equal basis, and private ones can "select" patients according to the "severity" of cases, such as in this way, on the one hand, they ensure a greater turnover of patients - correspondingly income, and on the other hand, difficult and demanding medical cases remain for the state and municipal hospitals, which are therefore in a disadvantageous position; 2) there is

an organizational deficit in a large part of Bulgarian medical institutions, which results in an increase in the risk to the health of patients (especially in emergency cases) and an unjustified increase in their costs; 3) distortion of the activity of hospitals, as a result of the operation of the principle “money follows the patient”, due to the shortcomings of the method of payment of hospital care - the clinical pathway; 4) the looming shortage of health and medical personnel as a result of low pay levels, unsatisfactory working conditions, etc., which result in a constantly increasing internal professional migration, and hence a lack of continuity, “bleeding off” of the native health system, especially in small settlements; 5) the delayed implementation of the concept of “electronic health care” in our country generates a number of defects and weaknesses in the system, especially with regard to financial order and resource provision.

In Chapter Three, “Financial Management of Healthcare Organizations in the Context of the Development of Market Relations”, the doctoral student presents a study of the specifics and features of financial management in healthcare. The results of a survey of the opinion of a target group, composed of managers of hospital facilities, doctors, and patients, are presented regarding the need to carry out the next stage of health reform in hospital activity, and their synthetic analysis is carried out. Issues regarding the financial management of healthcare institutions are discussed as a prerequisite for the financial stability and solvency of the healthcare business. At the end of this part, attention is paid to tracking the dynamics of the capital positions of selected medical facilities for hospital care in the territorial scope of the North-West Planning Region. The results of the research carried out in the third part can be summarized as follows: 1) the health reform carried out over the years in our country has had partial success and often hinders its functioning; 2) it is concluded that the demonopolization of the National Health Insurance Fund will have a positive effect on the Bulgarian health insurance model; 3) the main problem is the relationship between the individual units of the primary and clinical treatment activities; 4) based on a conducted survey, the conclusion is reached that only a complete and comprehensive reform in health care could fundamentally solve the problems of the native health care system; 5) the analysis of the capital positions and the balance sheet of selected medical institutions in the North-West Planning Region (BG31) - private and public - shows an increase in expenses and a decrease in income in the entire sector.

In the Conclusion of the dissertation, the doctoral student summarizes the results and conclusions reached in the course of the research, systematizing them in scientific contributions of a theoretical and theoretical-applied nature.

The abstract is 30 pages long and correctly reflects the achieved results. At the same time, it contains all the required elements and is developed according to generally accepted standards.

All of the author's publications are actually on the topic of the dissertation and represent parts of it, validating some of the ideas formulated as contributions.

III. Scientific and scientific-applied contributions of the dissertation work.

The dissertation builds on the existing ones and enriches with new scientific ideas the theory and practice of Health Care, in particular the Economics of Health Care. The detailed familiarization with the content of the dissertation allows the following merits to be brought to the fore, bearing the characteristic features of scientific and scientific-applied contributions:

1) contributions of a scientific nature

As a result of the applied critical analysis of the health care system in Bulgaria, the trends are outlined and its problems are identified, as a result of which the need for an urgent change in the way of financing health care, the need for reform in the legal status of medical facilities for hospital care is substantiated, to achieve an improvement in the health status indicators of the population in Bulgaria.

Based on the conducted analytical study of the financing models applied in world practice, their main advantages and disadvantages, limitations, and potential have been identified. In this regard, the existing relationship between the positive characteristics of each model and its scope of application in different countries is emphasized, according to geographical specificity, the degree of development of market relations, history and traditions, and last but not least, the political dimension, in each of them.

Using a regression-correlation analysis of the dependence of health insurance payments on revenues and transfers in the NHIF, when testing for significance by Fisher's F-criterion, with a confidence interval above 99%, a sign of the highest order was established, with confirmed results and by statistical analysis of the data on a chain basis.

2) contributions of a scientific and applied nature

A questionnaire survey tool has been approved, aimed at the three main groups of participants in the health care process in our country - managers of medical institutions, doctors, and patients. The derived representative data from the respondents, with verbal-graphic models in the part for the medical facilities

and for the patients, give a practical opportunity to evaluate the effectiveness of the functioning of our health system.

Based on the analysis of the results of the conducted research on the functioning of the health care model applied in Bulgaria, and an assessment of its advantages and imperfections, specific views were brought out, justifying the need for comprehensive reform in the sector to increase the efficiency of financial flows in healthcare and achieve a higher social outcome, seen as better health for all and a positive economic impact, fully in line with the philosophy of the EU Global Health Strategy.

With the help of the empirical study of data from the financial statements of selected medical institutions from the North-West planning region, the assessments of the presence of existing significant disparities, both in terms of the criterion - geographical location, and in terms of the criterion - ownership, such as private hospitals, have been confirmed report improved financial indicators, while the state, regional and municipal ones suffer losses and accumulate debts.

IV. Dissertation critical notes, questions, and recommendations.

Regarding the content part of the dissertation work, I have no significant critical remarks or recommendations. A large part of the recommendations made me was removed at an earlier stage after the internal discussion held at a meeting of the Departmental Council of the Department of Finance and Credit.

The questions I ask the doctoral student in connection with the defense of the dissertation are the following:

1. The publicly presented ideas for health reform, including in the current development, equate it mainly with the demonopolization of the National Health Insurance Fund, which only involves redirecting the financial flows of public funds for health. In this line of thought, comment on how you think the effectiveness of a possible new model of resource allocation for health care in our country will change?

2. Which of the widely discussed by health experts and specialists, professional organizations, patient organizations, politicians, economists, etc., options for the reform of the health insurance model in Bulgaria do you find appropriate from an economic, managerial, and organizational point of view: the option with the full demonopolization of the National Health Insurance Fund, where it competes in the basic package of activities with private insurance companies; or the option of improving the model into a two- or three-pillar model, where the National Health Insurance Fund competes in the basic package of activities with private insurance companies?

V. Summary Conclusion and Opinion.

The dissertation submitted for review possesses the required characteristics of a complete, logically constructed, and finished scientific study with theoretical generalizations and scientific and applied contributions. The conclusions reached in the development are correctly presented and represent an original contribution of the doctoral candidate to science.

On this basis, I give a positive assessment of the dissertation on “Financing Models in Health Care: Constraints and Opportunities” and I propose the members of the Scientific Jury award the degree of Doctor of Education and Science (Economics) to Ana Borisova Ivanova in the PhD program “Finance, Money, Credit and Insurance (Finance)”.

22.02.2023

Reviewer:.....

(Assoc. Prof., PhD Nikolay Ninov)