



## ALLOCATION OF PUBLIC EXPENDITURES FOR HOSPITAL MEDICAL CARE: TRENDS AND REGIONAL INEQUALITIES

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### ABSTRACT:

**Purpose:** The purpose of this publication is to examine inequalities in the distribution of public expenditures on hospital medical care by statistical regions in Bulgaria for the period 2020-2024.

**Methods:** To achieve the goal, a DESK analysis of scientific literature, regulatory acts and strategic documents was carried out. An analysis of statistical data from the National Statistical Institute and the National Health Insurance Fund, processed in Microsoft Excel, was conducted as well.

**Results:** Despite the overall increase in public spending on hospital medical care in Bulgaria between 2020 and 2024, there are significant imbalances both in per capita spending (by statistical region) and in their growth rates, leading to significant and widening health inequalities.

**Conclusion:** The analysis reveals deepening regional inequalities in the financing of hospital care in Bulgaria, limiting citizens' access to healthcare, which requires urgent measures based on up-to-date information and efficient allocation of resources to build a sustainable people-centred healthcare system.

**Keywords:** healthcare, public financing, health inequalities,

### INTRODUCTION

Health systems financing is the backbone of healthcare. The effective and appropriate allocation of limited public financial resources is a prerequisite for ensuring accessibility and quality of health care for all members of society. The financing of health care in Bulgaria is based on the so-called "social health insurance system", defined in the scientific literature as the Bismarck-type model [1]. The model is based on the principle of solidarity, aiming at ensuring universal health coverage [2,3].

The Health Act (Article 2, paragraph 1-6) highlights the key role of the state, which should guarantee the health of citizens by implementing the principles of equality in health services, ensuring accessible and quality medical care, and state participation in the financing of health activities [4]. In Bulgaria, compulsory health insurance was introduced in 1998 after the adoption of the Health Insurance Act. Under this law, the National Health Insurance Fund (NHIF) was established (Article 6, paragraph 1) [5], whose main objective is to ensure and guarantee equal access to health care for insured persons and regulate the sources of financing of the health insurance system in the country. The Law on Medical Institutions (Article 96, paragraph 1-4), on the other hand, regulates the sources of financing of medical institutions in the country in the following order: the NHIF, state and municipal budgets, insurers, and local and foreign natural and legal persons [6].

According to Bulgaria's Country Health Profile 2023 to 2021, the share of public financing for healthcare is the largest, amounting to 65% of total healthcare expenditure, however, the value is among the lowest in the EU [7]. Accordingly, through the financing of the healthcare system, the state directly influences the accessibility and quality of healthcare services at both national and regional levels. There are numerous strategic documents that focus on reducing regional inequalities. The National Strategy for Regional Development of the Republic of Bulgaria for the period 2012-2022 aims at so-

cial, economic, territorial cohesion and balanced distribution, and among the priorities is “ensuring access to educational, healthcare, social and cultural service facilities in the regions” [8].

The National Development Program Bulgaria 2030 also emphasizes the key role of the health system for the sustainable development of the country. Among the program’s specific objectives is optimizing public spending on healthcare and its subsequent efficient allocation [9]. A key document for the development of the healthcare system and improving the health status of citizens in Bulgaria is the National Health Strategy 2030, as the document was adopted by Decision No. 662 of the Council of Ministers of 29.09.2023. Among the main strategic objectives are effective and optimal management of resources, including financial ones, alongside ensuring health security, and limiting health inequalities. These objectives aim to meet the needs of people in all regions, with identified priorities, specific policies, and areas of impact [10].

An important and useful tool for planning the needs of healthcare needs of the citizens, including at the regional level, is the National Health Card (NHC). The document contains detailed information on the available and minimum required number of doctors, specialists in the professional field of “Health Care” (nurses, midwives, laboratory technicians, etc.), medical institutions, hospital beds, medical equipment, etc. [11]. There are two main shortcomings – the NHC for 2025 contains outdated information from 2018, on the one hand, and on the other hand, it is on paper form and does not provide real-time information on the state of the health network and infrastructure in the country. The National Map for Long-Term Needs for Health Services from 2022 similarly brings significant benefits and is a valuable tool, providing information, analysis, and mapping of citizens’ needs for health care at the national, regional and district levels [12], but without up-to-date information on what the real needs of citizens are at the present time, the allocation of resources, including human, material and financial, is irrational and ineffective.

## METHODS AND MATERIALS

For the purposes of this study, a Desk analysis of scientific literature and strategic documents was carried out. To build a legal framework, a review and analysis of regulatory documents was conducted, including the NHIF Budget Act, the Regional Development Act, the Health Act, the Law on medical institutions, which are directly related to the functioning and financing of the healthcare system in the Republic of Bulgaria at both national and regional levels.

The European Parliament and Council’s Regulation (EC) No 1059/2003, known as NUTS (Nomenclature of territorial units for statistics), standardizes data collection on territorial units of varying sizes to enable comparable statistics across the EU as part of the Union’s Regional Policy and Cohesion Policy [13]. In this regard, Bulgaria is divided into six statistical regions, in accordance with the requirements for a common EU classification (Regulation (EC) No. 175/2008 of the European Parliament and of the Council) [14]. In Bulgarian legislation, regions are regulated in Article 4 of the Regional Development Act, falling under the NUTS2 category (basic regions, which are not administrative-territorial units) and including the following districts [15]:

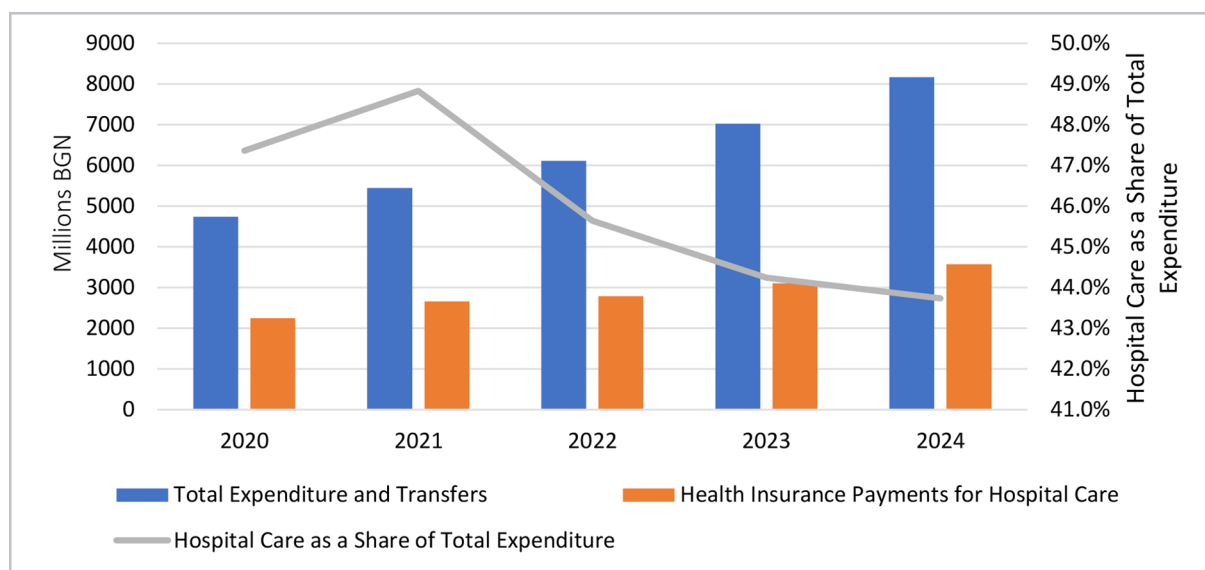
- North-western region, including the regions of Vidin, Vratsa, Lovech, Montana and Pleven;
- Northcentral region – Veliko Tarnovo, Gabrovo, Razgrad, Ruse and Silistra;
- North-eastern region – Varna, Dobrich, Targovishte and Shumen;
- South-eastern region – Burgas, Sliven, Stara Zagora and Yambol;
- Southcentral region – Plovdiv, Pazardzhik, Smolyan, Kardzhali, and Haskovo;
- Southwestern region, including the districts of Blagoevgrad, Kyustendil, Pernik, Sofia (district) and Sofia (capital).

Hospital care expenditures account for the largest share of healthcare expenditures, with a value of 65% [7]. On the other hand, the main source of revenue for hospital care facilities (between 70-80%) is funding from the NHIF [16]. Based on these facts, in this publication, public healthcare expenditures, and in particular those for hospital medical care (HMC), are modeled and analyzed at the statistical region level, with the processing of data from the National Statistical Institute (NSI) and NHIF being carried out using Microsoft Excel for Mac, Version 16.77. In order to derive a trend in the distribution of funds, a five-year time period is covered – from 2020 to 2024.

## RESULTS

To clarify the situation in Bulgaria, public spendings on HMC at the national level are initially presented. Fig. 1 illustrates the total cost of spending and transfers in the healthcare system in Bulgaria, as well as health insurance payments for hospital medical care (HIPHMC), sourced from the National Health Insurance Fund Budget Act for the period 2020-2024 [17]. The ratio of HIPHMC to total expenditures (share of total expenditures) is derived, as well as the dynamics of these indicators.

**Fig. 1.** Dynamics of healthcare spending and hospital care payments in Bulgaria, 2020-2024

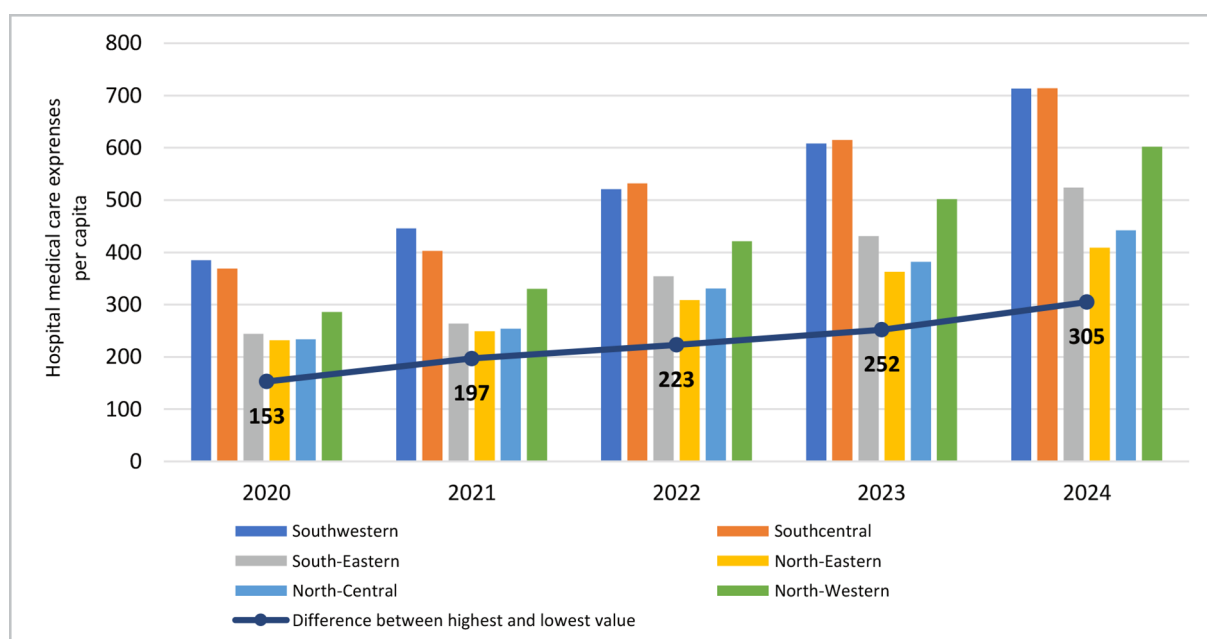


The data presented in Fig. 1 indicate a constant growth in total expenditures and transfers from the NHIF budget for the period 2020-2024, with their value increasing significantly from approximately 4.74 billion BGN in 2020 to 8.17 billion BGN in 2024, i.e., a growth of 72.16% is observed. The HIPHMC also show an upward trend over the reviewed time frame, from approximately 2.25 billion BGN in 2020, reaching 3.57 billion BGN in 2024. Accordingly, there is again a positive dynamic with an increase of 58.98%. However, it is striking that the growth rate of the HIPHMC is lower than that of total expenditures. Fig. 1 clearly demonstrates that despite the increase in the absolute values †of the two indicators under con-

sideration, there is a downward trend in the share of the HIPHMC in total expenditures during the period, with the value for 2020 amounting to 47.4%, compared to 43.7% in 2024.

The values for the HIPHMC by medical institutions for the period 2020-2024 from the NHIF to the Regional Health Insurance Funds (RHIF) [18] are calculated by statistical regions, and in combination with the data from the NSI for the population statistics for the respective year [19], the costs for HMC expenditures per capita by region are derived. Additionally, the changing pattern of the cost variation (from highest to lowest) among regions throughout the examined period is determined. (Fig.2)

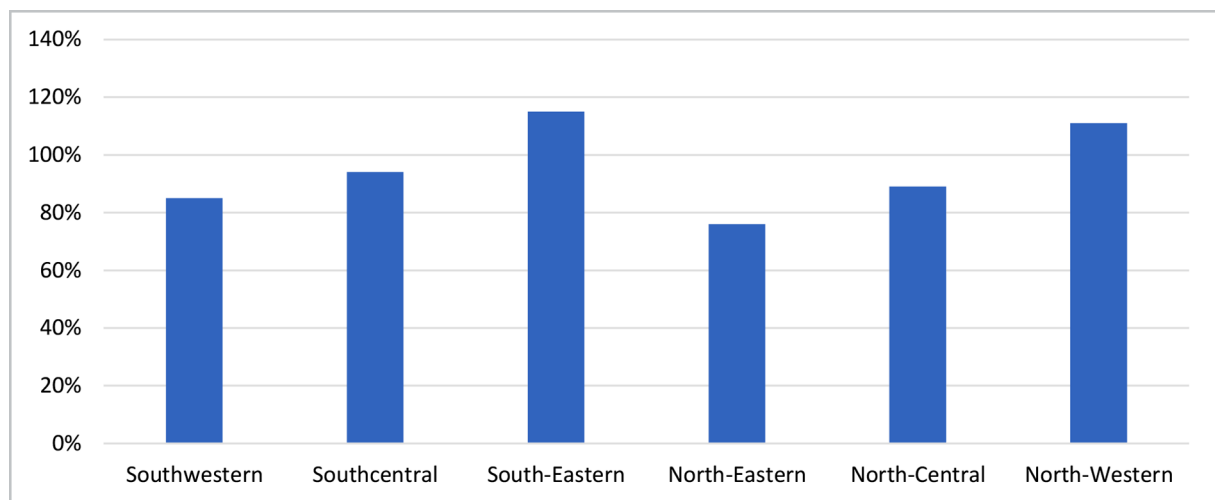
**Fig. 2.** Hospital medical care expenses per capita, by statistical region, 2020-2024



An overall increasing trend in HMC expenditures per capita is observed in all reviewed statistical regions during the period 2020-2024. The South-West and South-Central regions demonstrate high levels of HMC expenditures per capita throughout the period, with the values reaching 713 BGN and 714 BGN per capita in the region, respectively, in 2024. The North-East and North-Central regions generally had the lowest expenditures during the examined years, even though they also experienced a rise in expenditures between 2020 and 2024. The line graph, which represents the difference between the highest and

lowest costs values among the regions, also depicts an increasing trend during the reviewed period. In 2020, this difference amounts to 153 BGN, while in 2024 the value increases almost double, reaching 305 BGN. These data clearly indicate that despite the increasing overall growth in HMC expenditures per capita in Bulgaria, there are significant and growing differences between individual statistical regions, intensifying health inequalities among them. The fact that HMC expenditures per person changed by different percentages in each region from 2020 to 2024 (illustrated in Fig. 3) also highlights regional disparities.

**Fig. 3.** Hospital medical care expenses, percentage variation for the period 2020-2024



The graph in Fig. 3 clearly illustrates the presence of significant differences in the growth rates of HMC expenditures per capita in individual statistical regions for the period 2020-2024.

The largest percentage increase in hospital medical care costs per capita (by statistical region) for the period 2020-2024 was observed in the South-Eastern region, where the growth reached 115%. This is followed by the North-Western region, which experienced a 111% increase. The South-Central region ranks third, recording a growth of 94%. More moderate growth is observed in the North-Central region (89%) and the Southwestern region (85%), while the North-Eastern region shows the lowest percentage increase in HMC expenditures per capita throughout the period, namely 76%. The resulting uneven growth rates highlight a widening gap, deepening regional inequalities in access to and use of hospital health services across the country.

## DISCUSSION

In Bulgaria, the healthcare system is oriented towards hospital treatment with overcapacity of hospitals, mostly territorially located in large cities, which does not correspond to the real health needs of the population [7,

20]. The structural imbalance, which is expressed precisely in an overemphasis on hospital care, neglecting primary care, outpatient services, and preventive measures, significantly worsens the effective functioning of the healthcare system in the country. The increased budget of the NHIF for the period 2020-2024 evidences a disproportionate distribution of public funds for HMC by statistical regions, which violates the basic principles of equality and justice. The financial side of the problem is also exacerbated by the fact that the share of the gross domestic product (GDP) for healthcare in Bulgaria (7.66%) for 2022 is among the lowest in the EU (average 10.36%) [21], and the value of direct payments by patients in Bulgaria (34%) is among the highest in the EU (average 15%), which further limits access to medical care and reinforces health and social inequalities, especially for people with lower incomes [22].

It is important not to neglect the fact that there is a shortage of nurses and doctors in certain medical specialties in the country [7], which, in combination with their uneven territorial distribution, also limits citizens' access to health services.

Despite the many strategic documents, requests, and commitments for reforms in the healthcare system, their

execution frequently suffers from inconsistency, poor coordination, and a lack of effective control in their implementation, which accordingly leads to a failure in achieving the targeted results.

Given the above facts and findings, there is an urgent need for an appropriate and adequate policy that meets the real health needs of the population and guarantees more equal and fair access to quality health care for Bulgarian citizens.

## CONCLUSION

The analysis and the trends highlighted in the publication strongly suggest that regional inequalities in the financing of HMC in Bulgaria are deepening. This inequality directly limits the access of citizens living in certain regions to the necessary health care, which inevitably leads to a deterioration in their health status and has a negative impact on the overall health and well-being of the nation. Despite the declared strategies and official documents aimed at overcoming these disparities since 2012, the problem has not been tackled, but in fact, there is evidence of the opposite – an increase in regional differences in hospital care expenditures.

A key tool for addressing these challenges is the National Health Card, which, if supported with up-to-date

real-time information on the health infrastructure, medical equipment, and specialists, can serve as a basis for effective planning and allocation of resources in the healthcare system. The optimization and effective allocation of public funds for healthcare are key prerequisites for building a sustainable and accessible healthcare system, in which the health of the citizens is a priority.

Given the ongoing and worsening regional inequalities, urgent and targeted actions and policies tailored to the real needs of the population are necessary. The main goal should be to reduce health disparities and ensure equitable, affordable, and quality access to healthcare services for all citizens of the country, regardless of their geographical region.

## Abbreviations

**EU** – European Union

**GDP** – Gross Domestic Product

**HIPHMC** – Health Insurance payments for hospital medical care

**HMC** – Hospital Medical Care

**NHC** – National Health Card

**NHIF** – National Health Insurance Fund

**NSI** – National Statistical Institute

**RHIF** – Regional Health Insurance Fund

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