

## CHALLENGES TO THE HEALTHCARE SYSTEM IN BULGARIA AFTER THE OCCURRENCE OF THE CORONAVIRUS

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### *Abstract*

*At the end of 2019, humanity was facing one of the most serious challenges that had a negative impact on the entire world economy. The new coronavirus (COVID-19) has been declared a pandemic by the World Health Organization (WHO). Its appearance led to widespread fear, which in turn affected everyone's daily life. As if the international community was suddenly paralyzed, life began to move at a slow pace and people wondered if they too would be affected by a disaster called the coronavirus. The current study aims to analyze the changes and provocations that occurred with the onset of the pandemic. The results show that there are significant gaps in the country's health information systems and that the Coronavirus Disease (COVID-19) has had serious consequences for the country's health, social security and economic growth. The main research methods used in the development are analysis, method of analysis and synthesis, intuitive and systematic approach.*

**Keywords:** health; disease; Covid-19; pandemic; health system

**JEL Codes:** I1; I15

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### **1. Introduction**

The emergence of the Covid pandemic has undoubtedly struck a blow to Bulgaria's healthcare system and confronted it with the challenges of an aging population, new technologies, rising healthcare costs and the growing burden of chronic diseases. Despite decades of transition, life expectancy in our country is far below the EU average before the pandemic, amounting to 75.1 in 2019 compared to 81.3 in the EU as a whole (Eurostat, 2021). This gap is likely to increase further as a result of the COVID-19 pandemic.

The spread of the coronavirus posed many challenges to all, but most affected were medical professionals, tasked with curbing epidemiological infections. Internationally, it has been established that:

- the new virus affects people with chronic diseases and adults over 65;
  - the new virus has a specific feature - high morbidity compared to other known viruses;
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- due to the high morbidity, the health system is burdened.

The coronary heart disease pandemic has drastically changed the healthcare landscape. The influx of patients threatens to deplete resources, from ventilators and critical care beds to personal protective equipment and staff. Clinics' basic ethical commitments to patients remain, but they must make difficult choices on a daily basis. As acknowledged in a statement from the National Academy of Crisis Care, Engineering and Medicine, "clinicians are ethically justified - and in fact ethically obliged - to use the available resources to sustain life and well-being as much as possible" (The National Academies of Sciences Engineering Medicine, 2020).

Three ethical challenges are of particular importance in the care of cardiovascular disease during the COVID-19 pandemic (Khazanie, Wynia, Dickert, 2020):

1) First, the cessation of emergency clinical care forces cardiologists to make difficult judgments about which patients need urgent and which can be postponed without undue risk;

2) Second, as institutions develop frameworks for the allocation of critical care resources, cardiologists must develop equitable approaches to patients with heart disease;

3) Third, cardiologists should advise patients and their families in situations where treatment cannot be provided due to deficiency.

The ethical duty of physicians to improve patient well-being is no different in the COVID era than in other times, but the bar of urgency has been raised, the assessment more complex, and the uncertainty greater. In the short term, the risk of delaying care for chronic patients is usually low, but because the pandemic runs periodically over time and personal care is limited, the risk for patients escalates (Stoykov, Zdravkov & Dimov, 2020).

These solutions are more common, potentially more impactful, than triage ventilation or intensive care triage decisions, which have received more public attention, but these decisions are left to individual cardiologists.

## **2. Literary review**

A number of scientists and researchers are examining the appearance and causes of the corona virus. Among them is Adam Kucharski, Associate Professor in The London School in hygiene and tropical medicine (LSHTM). Key for work on Kucharski are two main questions: which are the factors that provoke epidemics and how they can be traced and controlled better. "We need it from two key parts from information: for everyone infected person on how much others people him transmit?" (Kucharski, 2020).

In his new book "Rules on infection ", proposing theory about patterns of virus spread on the Internet or in the human body. He argues that misinformation about the coronavirus can be just as harmful as the spread of the disease itself.

Another scientist, David Heiman, who is a professor in epidemiology on infectious diseases in LSHTM, says that the coronavirus was particularly dangerous because, such as the original mu spread is passed a lot faster from previous similar flu epidemics.

The professor of medicine in the university on Eastern England - Paul Hartman claims that, "Infections spread easier through winter than through summer, so that is quite a lot probably if -this continues in the north hemisphere, at least you observe decline through the following months. The big one question will be whether it will appear again" (Hunter, Bunn, Kilet & Brainar, 2021).

### **3. Analysis and discussion**

#### *3.1. National Pandemic Preparedness Plan*

At the beginning of the COVID-19 pandemic, Bulgaria took a number of measures to control the outbreak and minimize shock to the health system. This includes providing sufficient hospital capacity and healthcare professionals for the care of seriously ill patients from COVID-19, setting up supply chains for personal protective equipment and other essential devices and medicines, and minimizing disruption to health services (Puca, Čivljak & Arapović, 2020). To tackle the Coronavirus pandemic, a national pandemic preparedness plan has been drawn up, stating that we are not prepared to deal with such a pandemic, which threatens global health. It is clarified that the challenges of the COVID-19 pandemic create unprecedented cooperation within the European Community, with the cross-border nature of the crisis necessitating the search for common solutions and actions in order to enforce a comprehensive and effective policy.

The main goal of the National Pandemic Preparedness Plan is to create an adequate organization by taking action:

- limiting the scale of morbidity;
- optimal treatment options;
- maintaining the functionality of key sectors;
- providing constant, reliable and up-to-date information (Ministry of health, 2020).

The actions to be taken in a pandemic situation are:

- 1) Strengthening the epidemiological, microbiological and virological surveillance of communicable diseases;
- 2) Development and approval of a plan for providing vaccines;
- 3) Deepening research in the field of epidemiology.

Strategic planning at the national level is an important necessity, which is based on a chronological detailed assessment of events, a systematic procedure for opening the risk assessment (Grossman, 1972). Operational planning requires the identification of those who have the primary responsibility for planning action during

a pandemic, at national level, and that plans and steps must be defined in sequence and coherence.

The early warning and surveillance system determines the mode of transmission of the infection, the clinical symptoms and the severity of the disease. Indicators help to determine the clinical behavior of patients, risk factors that can lead to severe disease. The continuous exchange of information is of particular importance for identifying possible changes in the genome of the causative agent, which helps to develop appropriate recommendations and guidelines to combat infection. Coordination between the various units, both at national and regional level, is crucial for the development and impact of the pandemic.

The main activities for pandemic preparedness are within the competence of the Ministry of Health and are aimed at:

1) Forecast and assessment of the epidemic situation in order to prepare the health and medical institutions and the medical and non-medical specialists in them for action during a pandemic;

2) Establishment of an organization for the medical insurance of the population and for optimal opportunities for treatment of the sick;

3) Establishment of an organization for conducting anti-epidemic measures and control on the territory of the country;

4) Conducting and strengthening the epidemiological and laboratory surveillance of communicable diseases in Bulgaria;

5) Preparation of a national plan/strategy/guidelines for providing, in the conditions of a pandemic, with pandemic vaccines and anti-infectious medicinal products for priority groups of the population;

6) Preparation of a proposal for the establishment of a reserve of antiviral drugs, other medicines, personal protective equipment, apparatus and consumables as part of the state reserve managed by the State Agency "State Reserve and Wartime Stocks";

7) Conducting research in the field of epidemiology and prevention of pandemic disease and providing scientifically reliable information about the pandemic to the medical and general public.

During a pandemic, the Ministry of Health played an exceptional role. During a pandemic, vaccine prophylaxis is administered in accordance with the antigenic characteristics of the causative agent. The vaccination strategy has been developed on the principle of equality and ethics, and at first a vaccine is applied to the risk groups (priority groups), to the staff of the medical establishments, to the employees who are on the first line. Vaccines are the main means of prevention, and the strategic goal is to reach the maximum part of the population (Dimova & Rohova, 2018).

### *3.2. Economic analysis of the means to deal with the pandemic*

Economic measures for business, made it possible to obtain interest-free loans, to defer tax payments, to reduce municipal rents. One of the main problems in

maintaining employment was that it supported companies that make profits, distribute dividends and bonuses. That is, "taxpayers provided the profits of private structures, instead of these funds to be used to support citizens, the health system, self-insured persons" (Grigorova, Popova & Ganeva, 2021).

*Table № 1 Breakdown of individual programs*

<b>Measure</b>	<b>Disbursed funds (million BGN)</b>	<b>Number of companies</b>	<b>Number of employees</b>
PMS 55	186.2	8985	168.814
PMS 151	345.2	4929	142.469
PMS 278	307.5	6803	144.959
PMS 416	62.5	3260	74.020
Save me	23	8949	
80/20	66	2044	32.150
Employment for you	79.5	7502	
<b>Total</b>	<b>1069.9</b>		

*Source:* Own research

As can be seen from the data in the table, the measure "3-10" aims to allocate between BGN 3 and 10,000 to small enterprises, without any complex requirements and obstacles. The problem arose when the budget allocated for the measure turned out to be too small and included a small part of these enterprises. Companies with a 20% drop in turnover for the month preceding the one in which the application was submitted could apply. Similar to measure 60/40, the requirement here was that the company should be without liabilities such as taxes and social security contributions and that it should have registered at least BGN 30.000 turnover in 2020. The next measure "30-150" is analogous to the previous one, as the funding is between BGN 30 and 150.000, and the applicants are medium-sized enterprises. "Save me" is the measure adopted in November 2020, and the government's intentions were to close a number of businesses again, which it did - restaurants, malls, gyms, schools. Pursuant to the Council of Ministers Decree 325 of 2020, BGN 24 per day was paid to those working in sectors with limited activity. This measure did not take into account the fact that in case of unpaid leave, health insurance is paid by the employee, and there are no pension contributions. The measure "80/20" - provides for the payment of BGN 290, as well as it is permissible to combine it with "60/40", as the support itself should not exceed 80% of the insurance income. It covers sectors such as tourism, hospitality, restaurants, transport. Under the Employment for You program, employers can hire the unemployed, giving them European funding. The costs of the minimum wage or a proportional part of it shall be borne.

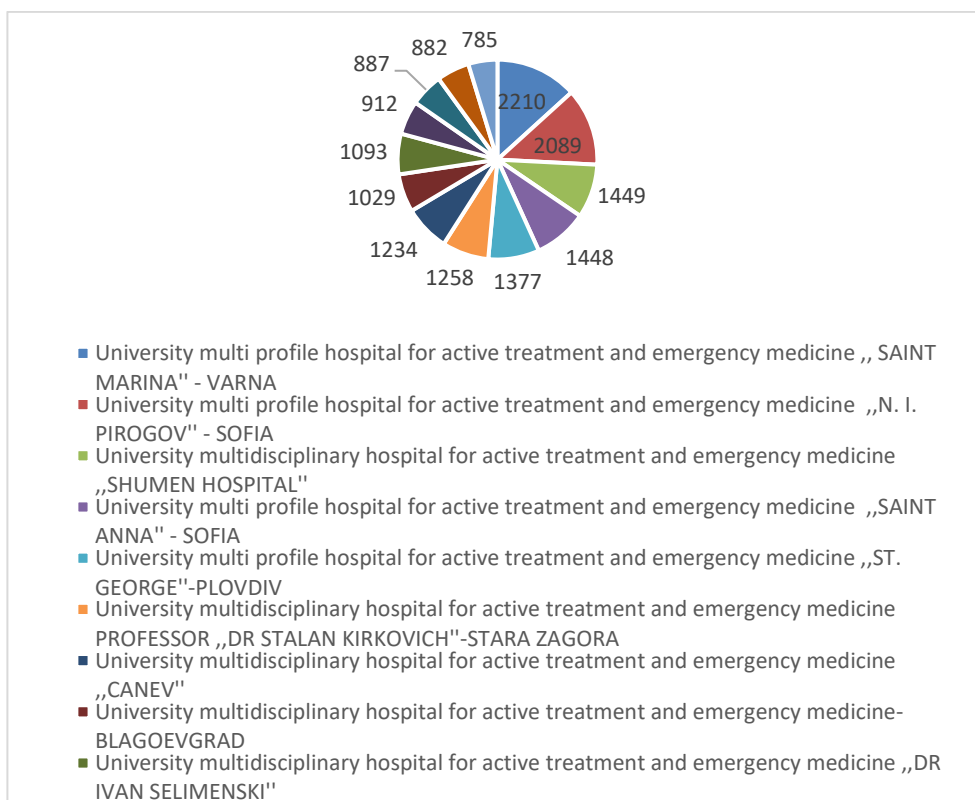
Table 2. Key health system indicators

Health expenditure per capita (PPS)	Out-of-pocket payments as % of current health expenditure	Medical doctors per 100.000 population	Practizing nurses and midwives per 100,000 population	Curative hospitals beds per 100,000 population
1307	37.8	424	485	641

Source: European Observatory on Health Systems and Policies, 2021

Analyzing the data in the table, confirms the fact that the outbreak of COVID-19 posed major challenges to the health system in Bulgaria and thus faced it with underdeveloped primary and preventive care, low health care costs and many other challenges in the organization of health care and the health status of the population (European Observatory on Health Systems and Policies, 2021). Here are some of the key indicators of the health system.

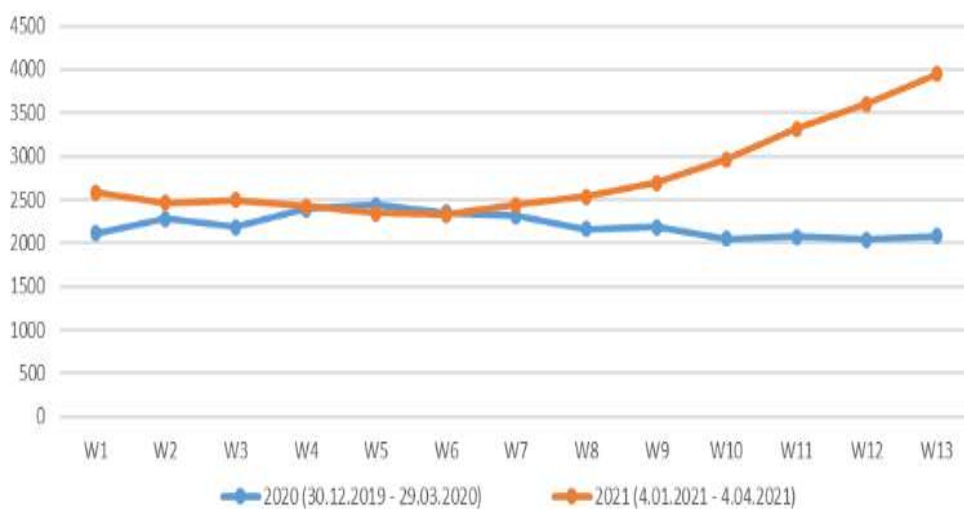
Figure 1. Hospitals with the highest number of patients treated with Covid-19



Source: Adapted by the author according to data of the NSI, 2020

As can be seen from the data in the figure, for the last 2020, most large hospitals in our country have an extremely high number of patients treated for coronavirus. The analyzes show that the absolute record holder is Sveta Marina, Varna, where 2210 people have been admitted for treatment. Among the first positions are University multi profile hospital for active treatment and emergency medicine N.I. Pirogov Sofia, with 2089 people accommodated and University multidisciplinary hospital for active treatment and emergency medicine Shumen, respectively with 1449 clinically accommodated. To the last positions are Tokuda Hospital, where less than 1,000 people were admitted (882) and University multidisciplinary hospital for active treatment and emergency medicine Saint Ivan Rilski - Razgrad, where 785 people are treated for coronavirus. The statistics are alarming, as the patients who are hospitalized exceed the specified hospital beds and it is necessary to open new covidwards in most of the hospitals in our country. In support of these results, it should be noted that once the outbreak enters the community transmission phase, it can double every 3 to 5 days. The need for hospitalization is growing by leaps and bounds - so fast that it can overwhelm the country's health system. On average, 20 percent of those infected develop severe or critical symptoms with a mortality rate of more than 1% and much higher in the elderly and in people with underlying diseases. The speed and scale of the spread, the severity of the cases, and the social and economic disruption are already dramatic and could be even greater as they become established in poorer nations. Analyzing the results, it is clear that the situation in Bulgaria is quite worrying, the infection and morbidity are throughout the country. This implies a huge collapse of our healthcare system, as it is chronically underfunded.

*Figure 2. Mortality in Bulgaria in the first quarter of 2020 and 2021*



Source: Adapted by the author according to data of the NSI, 2021

Based on the analysis of the figure, it is clear that the number of deaths from the pandemic in Bulgaria for the first quarter of 2021 is 36.152 people. Comparing mortality for the same period from the previous 2020, it is obvious that there is a huge increase. This statistic is worrying, as the overall mortality rate for 2021 is 21.1%. It is also reported that mortality in men is about 23% higher than in women, which is approximately 20%. The data speak for themselves that the coronavirus is a disease that is severe and unfortunately in most cases fatal. We are facing a global health crisis different from any other in the coming years. A crisis that kills people, spreads human suffering and endangers people's lives. But this is much more than a health crisis. This is a human crisis. Coronavirus disease (COVID-19) attacks societies at its core.

### *3.3. The consequences for Bulgaria and the EU after the COVID-19*

Following the first confirmed case of coronavirus infection, a series of restrictive measures were introduced to limit the spread of the virus. Authorities in Bulgaria initially decided to implement preventive measures such as closing borders and suspending international flights. However, when the number of COVID-19 cases began to rise, they resorted to more restrictive measures to restrict human movement. These measures include the closure of educational institutions, quarantine in certain areas, restrictions on international travel, restrictions on local traffic and self-isolation measures.

The isolation/self-isolation measure was imposed at the very beginning of the pandemic for returnees from severely affected countries. The measure is reviewed periodically, and the criteria for isolation/ self-isolation change gradually, depending on the development of the pandemic in the country.

Migration was an important factor in the initial spread of the disease, with people returning home from severely affected countries such as Italy. In Bulgaria, where more than 1 million Bulgarians live abroad, there is an increase in emigrants returning home due to the general instability during the COVID-19 pandemic worldwide.

EU countries introduced early blocking restrictions, which helped curb the spread of the disease in the spring of 2020. Initially, compliance was high, but it also became clear that there was no systematic approach to implementation or effective management of regional and local level.

The pandemic also had major implications for the wider economy, leading to business closures, rising unemployment, and new financial uncertainty for many. Studies conducted in Croatia found that lockdown restrictions had a negative impact on mental health, physical activity and eating habits (Đogaš, Kalcina & Dodig et al., 2020).

This far-reaching impact created economic and political pressures to ease restrictions. In Croatia for instance, there was widespread recognition of the need for resources generated in the summer tourist season, which impacted crisis management.



The situation was similar in other countries, where strategic priorities gradually changed, and the goal of protecting the health of the population was sometimes superseded by political or economic interests (OECD, 2021).

Another challenge was the far-reaching impact of the blocking measures, with the effects of the interventions being much greater than expected. The pandemic has necessitated significant changes not only in health and healthcare systems, but also in the social and economic life of the population, limiting or banning gatherings and social contacts and forcing the process of learning and working online. Economic activities have declined significantly and people's daily lives have been.

However, the pandemic revealed existing weaknesses in human resource planning (Nathan, Muscat, Middleton, Ricciardi & Permanand, 2021). Not surprisingly, the shortage that existed before the COVID-19 pandemic persists. In Croatia and Romania, for example, there is a general shortage of health workers and shortages, and in Bulgaria there is a shortage of nurses (European Observatory on Health Systems and Policies, 2021).

This shortage must be overcome in order to improve the resilience of the health system and to protect the health and well-being of the current workforce.

#### *3.4. The provision of health services other than those related to COVID-19 patients has been seriously disrupted*

The provision and use of health services other than COVID-19 has been negatively affected by the pandemic response. However, some countermeasures have been taken to continue the provision of basic health services. Formally in Bulgaria the provision of health services in outpatient care was not limited, with the exception of some preventive services. However, the access difficulties typically faced by people in rural and remote areas have been exacerbated by the restrictions imposed on travel in the spring of 2020. In Croatia, health professionals who do not deal with patients with COVID-19 have had a drastically reduced workload. The resulting inadequate provision of patients without COVID-19 may have long-term consequences for the health of the population. In Romania, the provision of health services other than COVID-19 was limited not only by public health measures, but also by patients' fear of contracting COVID-19 and the closure of entire hospitals due to staff infections caused by a lack of protection and safety measures.

## **4. Conclusion**

Based on the analysis, the following conclusions can be made:

*First*, the COVID-19 pandemic has had devastating and catastrophic impacts on economies around the world. Economies are entering a recession that could be extremely traumatic for households.

*Second*, COVID-19 revealed persistent inequalities in income, age, race, gender, and geographical location. People face complex, interrelated threats to their

health and well-being, rooted in the social, economic, political and environmental determinants of health.

*Third*, the pandemic also revealed significant gaps in the country's health information systems. While high-resource settings face challenges of overcapacity and fragmentation, weaker health systems run the risk of jeopardizing the hard-earned health and development gains of recent decades.

*Fourth*, the loss of income mainly affects the general population living or vulnerable to poverty, and people working in activities that are more exposed to cuts and wage cuts, and those with precarious employment in general.

*Fifth*, civil society considers the priority of the healthcare system in terms of information, transparency and quality of health services and care to be significant.

*Sixth*, good governance, underpinned by state capacity, political leadership, community engagement, accountability, transparency, trust and clear lines of communication, is key to responding effectively to a pandemic such as COVID-19. The initial response benefited from a centralized governance approach and high levels of public trust but this proved to be only a short-term solution. Over time, broader governance challenges surfaced, political and economic considerations took precedence over expert opinions, and public trust declined. Responsibility and blame were shifted to lower levels of administration.

*Seventh*, health workforce strategies need to be put in place and implemented to ensure sufficient numbers of well-trained health workers. The COVID-19 crisis in Southeastern Europe highlighted pre-existing shortages, but also policy failures to protect health workers from infection. The countries adopted a number of measures to increase the supply of health workers, but for them to become sustainable, they need to be part of comprehensive workforce strategies.

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