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## A comparison of health system responses to COVID-19 in Bulgaria, Croatia and Romania in 2020<sup>☆</sup>

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### ABSTRACT

This article compares the health system responses to COVID-19 in Bulgaria, Croatia and Romania from February 2020 until the end of 2020. It explores similarities and differences between the three countries, building primarily on the methodology and content compiled in the COVID-19 Health System Response Monitor (HSRM). We find that all three countries entered the COVID-19 crisis with common problems, including workforce shortages and underdeveloped and underutilized preventive and primary care. The countries reacted swiftly to the first wave of the COVID-19 pandemic, declaring a state of emergency in March 2020 and setting up new governance mechanisms. The initial response benefited from a centralized approach and high levels of public trust but proved to be only a short-term solution. Over time, governance became dominated by political and economic considerations, communication to the public became contradictory, and levels of public trust declined dramatically. The three countries created additional bed capacity for the treatment of COVID-19 patients in the first wave, but a greater challenge was to ensure a sufficient supply of qualified health workers. New digital and remote tools for the provision of non-COVID-19 health services were introduced or used more widely, with an increase in telephone or online consultations and a simplification of administrative procedures. However, the provision and uptake of non-COVID-19 health services was still affected negatively by the pandemic. Overall, the COVID-19 pandemic has exposed pre-existing health system and governance challenges in the three countries, leading to a large number of preventable deaths.

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### 1. Introduction

Bulgaria, Croatia and Romania are European Union (EU) member states in Southeastern Europe that responded in similar ways to COVID-19 and shared many of the same health system challenges prior to the pandemic. Romania is considerably larger than Bulgaria and Croatia and had 19.2 million inhabitants in 2021, compared to 6.9 million in Bulgaria and 4.0 million in Croatia [1].

Transitional changes in politics, economics, and, in Croatia's case, war, have shaped the general conditions in the three countries in the post-communist period [2]. The three health systems today face the challenges of ageing populations, increasing demand, new technologies, rising health care costs, and a growing burden of chronic diseases [3–5]. Despite decades of transition, life expectancy at birth in all three countries was still far below the EU average prior to the pandemic, amounting in 2019 to 75.1 in Bulgaria, 78.6 in Croatia and 75.6 in Romania, compared to 81.3 in the EU overall [6]. This gap is likely to widen further as a result of the COVID-19 pandemic.

The health systems of the three countries share similar characteristics, including highly centralized governance structures and

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compulsory health insurance systems with a single public payer. Key challenges related to governance mechanisms are the lack of strategic planning at the national level and lacking coordination and integration of care at the regional and local level. The trust of citizens in decision-makers and public authorities, an essential element for the success of a wide range of public policies, is another challenge [7–9]. According to the latest Life in Transition Survey, conducted by the European Bank for Reconstruction and Development in 2016, people in Southeastern Europe tend to have low levels of trust in authorities due to widespread corruption [10].

Another common challenge are geographic imbalances in the distribution of health facilities and workers, with rural areas often underserved and larger cities often oversupplied. In general, there is a shortage of general practitioners and nurses in rural areas and an oversupply of specialists in cities. Governments have taken some steps to overcome these health workforce challenges (such as a major rise in salaries in Romania, and a reform in the postgraduate specialization system in Bulgaria), although so far with limited success [11–14].

There are also important differences across the three countries, such as with regard to universal health coverage. Despite social health insurance being compulsory, a significant proportion of the population in Bulgaria (approximately 15%) and Romania (approximately 11%) remains uninsured [8,9,15]. In contrast, in Croatia, the compulsory health insurance system covers virtually 100% of the population [7]. Despite these differences, all three health systems faced major challenges in improving health outcomes prior to the pandemic, with underdeveloped and underutilized primary, community and preventive care, and high rates of preventable and treatable causes of mortality [12–14].

This article compares the health system responses to COVID-19 in Bulgaria, Croatia and Romania from February 2020 till the end of 2020, covering the first two waves of the pandemic. The analysis focuses primarily on data and information related to the 1st wave of the pandemic (spring-summer 2020), when the most restrictive measures were adopted. However, it also covers the 2nd wave of the pandemic, which began in September 2020. For the purpose of the analysis, all measures adopted in that period were reviewed.

The article explores key dimensions of responses, identifies commonalities and differences across the three countries, and offers lessons for policy-makers in Southeastern Europe and beyond. Its purpose is to identify governance choices and dilemmas, as well as intended and unintended consequences [16] of health system responses to COVID-19.

## 2. Material and methods

This analysis builds primarily on the methodology and content compiled in the COVID-19 Health System Response Monitor (HSRM). The HSRM is a tool established in March 2020 and designed in response to the COVID-19 outbreak to collect and disseminate up-to-date information on how countries, mainly in the WHO European Region, are responding to the crisis, focused primarily on the responses of health systems. It is a joint initiative by the European Observatory on Health Systems and Policies, the World Health Organization (WHO) Regional Office for Europe, and the European Commission [17].

The HSRM content is structured broadly around standard health system functions [18], capturing information on policy responses related to governance, resource generation, financing, and service delivery. It also includes policy responses that aim specifically to prevent COVID-19 virus transmission, as well as non-health system measures to deal with the social or economic consequences of the pandemic. The information is collected and updated regularly, using an evolving set of questions that serve as prompts for national health policy experts contributing to the platform. By following a

structured questionnaire and having a team of Observatory staff editing the responses, information is to some extent standardised and collected in a way that enables comparisons across countries.

This article focuses on **four HSRM sections**:

- **Governance** this includes emergency response mechanisms, how information is being communicated, and the regulation of health service provision to patients affected by the virus.
- **Preventing transmission** this section includes information on key public health measures that aim to prevent the further spread of the disease, as well as measures to test, identify and isolate cases, trace contacts, and monitor the scale of the outbreak.
- **Ensuring sufficient physical infrastructure and workforce capacity** this section considers the physical infrastructure and workforce capacity available and describes any measures being implemented or planned to address shortages.
- **Providing health services effectively** this section describes approaches to planning service delivery and patient pathways for suspected COVID-19 cases. It also considers efforts by countries to maintain the provision of health services that are not related to COVID-19.

The identification of key policy insights from country experiences followed a deliberative process that included extensive review of the HSRM materials and structured discussions amongst article co-authors, Observatory editors, and experts from national agencies. Where relevant, other country material, key documents and literature were used to inform the analysis, including peer-reviewed articles retrieved through international academic databases such as Medline.

The aim was not to provide definite answers as to why some countries have dealt better with the pandemic than others, but rather to identify interesting patterns, key contrasts, and innovative approaches in policy responses aimed at addressing common challenges across countries. Indeed, attributing any causal link between policy response and pandemic outcome is fraught with methodological challenges. Rather, the analysis intends to describe and assess policy responses and draw out critical lessons that will help policy-makers in making future policy decisions regarding crisis management.

## 3. Results

The COVID-19 outbreak has posed major challenges for the health systems in all three countries that were already confronted with poorly developed primary and preventive care, low health expenditure and many other challenges in terms of the organization of health care and the health status of the population [12–14]. Some of the key health system indicators are shown in Table 1.

When the COVID-19 outbreak reached Europe at the beginning of 2020, Bulgaria, Croatia and Romania had the coincidental geographic advantage of being hit later than some countries in Western and Southern Europe (such as Italy). The first patients with COVID-19 in Southeastern Europe were identified in Croatia on 25 February 2020, followed by Romania on 26 February 2020, and Bulgaria on 8 March 2020. Strict lockdown measures were imposed promptly in all three countries and the number of registered infections and deaths only grew slowly until May 2020, reaching a much lower level than in many countries in Western Europe. During late spring and summer 2020, numbers of registered infections and deaths were low and the strict restrictions were lifted. However, in autumn 2020, registered infections and deaths rose again and much more steeply than during the first wave of the pandemic (Fig. 1).

**Table 1**  
Key health system indicators, 2019 (or latest available).

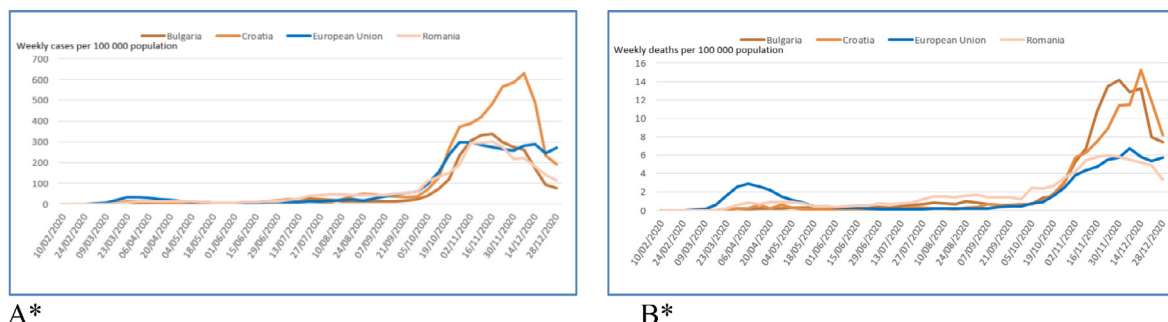
	Health expenditure per capita (PPS)	Out-of-pocket payments as% of current health expenditure	Medical doctors per 100,000 population	Practizing nurses and midwives per 100,000 population	Curative hospitals beds per 100,000 population
Bulgaria	1307	37.8	424	485	641
Croatia	1440	11.5	352	725	354
Romania	1354	18.9	319	770	533
EU-27	3208	15.6*	391		387

Source: Eurostat. Eurostat database. Luxembourg: Eurostat; 2021. Available at: [https://ec.europa.eu/eurostat/data/database [accessed 5 December 2021].  
Note: PPS = purchasing power standard; \* = 2018.

**Table 2**  
Governance mechanisms related to the COVID-19 health system response.

	Bulgaria	Croatia	Romania
State of emergency declared	13 March 2020	11 March 2020	16 March 2020
Head of national emergency response	Prime Minister	Ministry of Health	Prime Minister
Authority for emergency response	– Ministry of Health – National Operational Headquarters	– National Civil Protection Headquarters – Regional and Local Headquarters	National Committee for Special Emergency Situations
Affiliation of the emergency response representatives	– Ministry of Health – National Centre of Infectious and Parasitic Diseases – Military Medical Academy – Ministry of Internal Affairs – Ministry of Foreign Affairs	– Ministry of Health – University Hospital of Infectious Diseases "Dr. Fran Mihaljević" – National Public Health Institute – Ministry of Foreign and European Affairs – Ministry of Internal Affairs	– Ministry of Internal Affairs/Department for Emergency Situations – General Inspectorate for Emergency Situations – Ministry of Health – National Institute for Public Health – National Centre for the Surveillance and Control of Communicable Diseases – Ministry of Defence
Pre-existing emergency legislation or plans	– Health Act – National Plan for Influenza Pandemic Preparedness	Law on Protection of the Population from Infectious Diseases	Government Emergency Ordinance No. 21/2004 on the National Emergency Management System
Emergency legislation or plans or expert groups in response to the COVID-19 crisis	– Health Act amendments – State of Emergency Measures Act	The epidemic response plan has been developed by a newly established expert group of the Ministry of Health.	– Emergency Ordinances and Government Decisions periodically adapting the response measures – Ministry of Health Commission for the Clinical and Epidemiological Management of COVID-19 – Strategic Communication Group

Source: Authors' compilation.



**Fig. 1.** Newly confirmed COVID-19 cases (A\*) and reported deaths (B\*)  
Source–ECDC.

Note–EU unweighted average, the number of countries used for the average varies depending on the week.

3.1. Governance

At the beginning of the COVID-19 pandemic, Bulgaria, Croatia, and Romania took a number of measures to contain the outbreak and minimize the shock to the health system. This included providing sufficient hospital capacities and health workers for the care of severely ill COVID-19 patients, establishing supply chains for personal protective equipment (PPE) and other essential devices and medicines, and minimizing the disruption of routine health services [19].

In spring 2020, the three countries reacted swiftly to the COVID-19 pandemic, declaring a state of emergency in March 2020 and setting up new governance mechanisms (Table 2). In

line with the general governance structure of their health systems, they initially followed a centralized approach, in which all decisions related to the response to COVID-19 were made at the central government level. Special crisis management structures were established, under the leadership of the Prime Minister (Bulgaria and Romania) or the Ministry of Health (Croatia). In Bulgaria, the National Operational Headquarters had a counselling role in governing the crisis in the country during the COVID-19 state of emergency, while in Romania the National Committee for Special Emergency Situations, and in Croatia the National Civil Protection Headquarters performed this role. The three countries included additional scientific and professional experts as part of their emergency response teams. They

also activated or newly adopted emergency legislation and plans (Table 2).

The first three months of the health system response to COVID-19 in 2020 were characterized by a centralized governance model, with a high level of accountability held by the Ministry of Health and other national authorities involved in the process of decision-making. While being highly centralized, however, decisions were made in cooperation with regional and local authorities.

After the initial centralized health system response to COVID-19, from May 2020 onwards the governance approach increasingly involved regional and local authorities in the implementation of measures. Political circumstances also influenced decision-making during this period: 2020 was an election year for Croatia (parliamentary and presidential elections) and Romania (local and parliamentary elections). The politics involved in the election campaigns, increasing public tensions arising from the restrictive measures and their negative effects on the economy, along with the upcoming tourist season, were major factors leading to a rapid relaxation of measures in the three countries.

### 3.2. Preventing transmission (key public health measures and public communication)

In the initial response to COVID-19, a series of restrictive, “lock-down” measures were adopted to contain the spread of the virus. Authorities in Bulgaria, Croatia and Romania initially decided to implement preventive measures such as the closing of borders and the discontinuation of international flights. When the number of COVID-19 cases began to rise nevertheless, they resorted to more restrictive measures to contain the movement of people. These measures included the closure of educational institutions, the imposition of quarantine on certain areas, restrictions of international travel, restrictions of movement at the local level, and self-isolation measures (Table 3). The army and the police were involved in the implementation of some of these measures.

The measure of isolation/self-isolation was imposed at the very beginning of the pandemic for those who had returned from highly affected countries (Table 3). The measure was revised periodically, and the criteria for isolation/self-isolation changed gradually, depending on the development of the pandemic in the country.

Migration was a relevant factor in the original spread of the disease, with people returning home from highly affected countries such as Italy. In Romania, where more than 3 million Romanians had been living abroad, there was a surge of expatriates returning to Romania due to the general instability during the COVID-19 pandemic [20,21]. The same problem occurred in Croatia and Bulgaria, where the infection was spreading by immigration, travelling or seasonal employment in endemic areas [19].

Restriction of movement was implemented on the regional and municipality level and was set for the entire population. Travelling in and out of district cities or counties was only permitted for health professionals, people in need of emergency care, and people who worked outside their place of residence. During the Easter 2020 holiday period, the government of Bulgaria issued even stricter restrictions for the capital, Sofia. The Minister of Health specified time slots in the morning and evening during which it was allowed to enter or leave the city.

Restrictions in the form of local quarantines were carried out at the level of several cities, municipalities and (in the case of Croatia) islands, where local transmission of the virus was suspected. Quarantine was organized in such a way that a police blockade was set up to prevent entry and exit from the area. In March 2020 Bulgaria placed the town of Bansko and the village of Panicherevo under mandatory quarantine due to high infection rates. In Croatia, the Murter and Brač Islands, as well as the municipality of Udbina,

were the first areas to be placed under local quarantine. In Romania Suceava city and eight surrounding rural communities were the first communities placed in quarantine.

A very high challenge faced Romania by the end of June 2020, where the Constitutional Court pronounced measures issued by the government regarding the mandatory quarantine, isolation and hospitalization of SARS-CoV2 positive people to be unconstitutional. Consequently, the legislation in place was temporarily suspended, allowing hundreds of COVID-19 patients to leave hospitals against medical advice. This situation ended on 21 July 2020 when a new law regarding the definitions of quarantine and isolation was issued.

In all three countries, the first response to COVID-19 was also characterized by the closure of businesses and the limitation of working hours (although the Constitutional Court in Croatia later declared the measure of banning work on Sundays unconstitutional). In Romania, restrictions on businesses affected in particular the hospitality sector, including hotels, restaurants and catering. Employees were encouraged to work from home, wherever possible. Authorities gradually restricted all public gatherings, as well as cultural and sports events. Classes were suspended in all educational institutions and switched to distance learning.

According to official testing recommendations (although not always in practice), testing was free and available to everyone based on a physician’s referral or a special hospital procedure for inpatients (or as recommended by the Regional Health Inspectorates in Bulgaria). However, there were often organizational issues at testing sites, such as long queues, as well as problems in accessing testing for vulnerable groups of the population.

The restrictive measures implemented during the first three months of the response to COVID-19 in 2020 had a wide range of direct and indirect consequences for the population but also the general functioning of society and economy. Countries introduced measures aimed at reducing the negative consequences of the pandemic on social life and the economy, such as the provision of financial assistance to companies that had been forced to close their businesses.

### 3.3. Ensuring sufficient health care resources

The three countries undertook a range of measures to ensure that physical infrastructure and workforce capacity was available to deal with COVID-19 patients.

In terms of the procurement of personal protective equipment (PPE), ventilators and medicines, emergency appeals were sent to other countries for help. Donations were extensive and helped to bridge initial shortages. As a rule, the donated equipment was shipped to the Ministry of Health and then distributed according to the specific needs and requirements of each health institution.

COVID-19 led to a reorganization of the health system, as certain hospitals, wards or outpatient facilities were designated as COVID-19 facilities. Often, general hospitals reorganized their departments and used one department exclusively as an isolation unit. Due to the potential need for additional bed capacity, the military assisted the Ministries of Health in equipping individual outpatient facilities. Overall, the countries managed to shore up the physical capacities that were anticipated to be needed. On the other hand, elective procedures, specialist and diagnostic examinations and tests were cancelled during the state of emergency.

The work of health professionals was also reorganized. Due to the designation of COVID-19 facilities and the cancellation of routine procedures, there was a large disparity in workload between physicians and other health workers who were actively involved in COVID-19 services in hospitals and those who worked in outpatient facilities which did not treat COVID-19 patients.



**Table 3**  
Timeline of restrictive measures in Bulgaria, Croatia and Romania.

	Bulgaria	Croatia	Romania
The first case reported	8 March 2020	25 February 2020	26 February 2020
State of emergency declared	13 March 2020	11 March 2020	16 March 2020
State of emergency ended	13 May 2020 (the state of emergency was terminated and replaced with "emergency epidemic situation")	The declaration of the COVID-19 epidemic in Croatia was still in force by the end of 2020	14 May 2020
Closing of educational institutions	13 March 2020	13 March 2020	11 March 2020
Introduction of the first local quarantine	17 March 2020 (14-day quarantine of the town of Bansko)	25 March 2020 (25-day quarantine for the island Murter)	30 March 2020 (Suceava city and eight surrounding rural communities)
First travel restrictions	February 2020 - introduction of border health monitoring; 21 March 2020 - restrictions of internal travelling; 18–26 March 2020 - gradual closure of external borders	3 February 2020 - introduction of border health monitoring and appeal to citizens to delay travel to affected areas; 19 March 2020 - temporary ban on crossing the border crossings of Croatia	1 February 2020 - border health monitoring; 9 March 2020 - flights to/from Italy and other „red” zones suspended, followed by internal travel restrictions on 16 March (the state of emergency) and gradual closure of the borders
Beginning and end of lockdown	13 March 2020 - beginning; From 4 May to 1 June 2020 - gradual relaxation of restrictions	23 March 2020 - beginning; Restrictions were gradually lifted from 27 April 2020, onwards	16 March 2020 - 14 May 2020, followed by successive 30 days of State of Alert; Restrictions were gradually lifted
Introduction of self-isolation measures	February 2020 - for symptomatic passengers arriving from pandemic countries; 8 March 2020 - compulsory isolation for passengers and contact persons	3 February 2020 - for people returning from highly affected areas (14-days quarantine); 9 March 2020 - compulsory isolation/self-isolation for passengers and contact persons	1 February 2020 - for people returning from confirmed outbreak areas in China or cruise ships with confirmed cases (14 days quarantine); 24 February 2020 - for people returning from China and Italy (14 days quarantine or 14 days self-isolation at home depending on the province); 11 March 2020 - 14 days mandatory quarantine for the returnees from the “red zones”; 14 days isolation at home for returnees from the “yellow zones”
Restricting access to long-term care homes	8 March 2020 - visits to institutions for residential care and health care establishments for all regions with confirmed cases were prohibited; 13 March 2020 - the ban on visitors was expanded for the whole country	27 March 2020 - visits were prohibited; entry into social welfare institutions was allowed only to employees	16 March 2020 - continuity of care in all long-term care facilities (including supplementary staff and protocols) envisaged by the Ordinance Instituting the State of Emergency
Restricting public gatherings	8 March 2020 - restriction on mass gatherings in regions with confirmed cases; 13 March 2020 - restrictions on all public gatherings in the country; 17 March 2020 - restriction on gatherings of more than two people in public places	9 March 2020 - recommendation to postpone all public gatherings attended by more than 1000 people; 12 March 2020 - recommendation to postpone all public gatherings attended by more than 100 people; 19 March 2020 - restriction on gatherings with more than 5 people	6 March 2020 - restriction of all public and private events with more than 1000 people, events with 200–1000 people allowed with the approval of the local health authorities; 13 March 2020 - indoor activities with more than 50 people restricted
Recommendation to work from home	13 March 2020 - recommendation for all private and public employers	19 March 2020 - recommendation for all private and public employers	9 March 2020 - recommendation for all private and public employers
Closing of restaurants and bars, non-essential retail shops, indoor sports facilities, and cultural events	13 March 2020 - all non-essential businesses closed (sports events, restaurants, cultural events, religious gatherings), except shops and offices outside of shopping centres and explicitly included in the ministerial order; 21 March 2020 - closure of parks, sports grounds and playgrounds	19 March 2020 - all non-essential businesses closed (sports events, restaurants, shops, cultural events, religious gatherings)	22 March 2020 - dentistry practices and all non-essential retail stores closed
Physical distancing	Recommendation from February 2020	Recommendation from February 2020	28 January 2020 - recommended; 16 March 2020 - mandatory (State of Emergency); mandatory during the successive 30 days of State of Alert
Face mask required	30 March 2020 - face masks mandatory in all indoor and outdoor public places; 31 March 2020 - the order was revoked due to public discontent; 11 April 2020 - the measure was reimposed	10 July 2020 - recommendations for particular groups; 12 October 2020 - face masks mandatory in all indoor spaces	28 January 2020 - recommended; 16 April 2020 - face masks mandatory outdoors in six counties; 15 May 2020 - face masks mandatory in all indoor spaces; 1 June 2020 - face masks mandatory in all outdoor gatherings

Source: Authors' compilation.

Ensuring staff recruitment and retention was another common challenge. All three countries undertook specific measures aimed to both increase the number of staff where needed whilst also ensuring the retention of existing health workers. Romania stood out with the creation of 2000 additional, temporary jobs: 1000 at the level of district public health authorities and 1000 at the district emergency ambulance services. All three countries created a legislative basis or established organizations that allowed the compulsory or voluntary (Bulgaria) redeployment of doctors and nurses, as well as the inclusion of young doctors in COVID-19 units. They also took measures to support the health workforce, such as through benefits in the form of funding or the provision of accommodation for doctors working with COVID-19 patients. However, ensuring sufficient numbers of well-qualified health professionals remains a challenge across the region.

### 3.4. Providing health services

The three countries have taken similar approaches to the planning of service delivery, patient pathways for suspected COVID-19 patients, as well as the provision of services to non-COVID-19 patients.

Due to the reorganization of the hospital systems, access to health services was reduced at all levels of care (primary, secondary and tertiary), except for emergency care patients, cancer patients, pregnant women and patients with COVID-19. In addition to regular health care services, certain prevention programmes were also suspended. The provision of health services in Croatia was also affected by the earthquakes that hit the capital of Croatia, Zagreb, in March and December 2020. Overall, regular patients' procedures in all three countries were drastically reduced from March 2020 onwards.

To ensure access to health services for all non-COVID-19 patients, new digital health solutions and services were established for the general population and for particular vulnerable groups. These new services included web pages, mobile applications, and telephone lines. In addition, individual health institutions or non-governmental organizations set up telephone lines or online consultations for patients, and organized periodic field visits to members of vulnerable populations. Examples include the National Organization of Patients in Bulgaria, which launched a national call centre for patients with chronic diseases to whom they provided teleconsultations with various medical specialities (including psychotherapists), and the Croatian Red Cross, which provided home delivery of food and medicines and psychological support.

## 4. Discussion

### 4.1. Governance

#### 4.1.1. A centralized governance was initially effective, but masked broader governance challenges

At the beginning of the pandemic all three countries declared a state of emergency and followed a centralized governance approach. A similar path was taken in many other European countries such as the Czech Republic, Hungary, Poland and Slovakia (known as the Visegrad countries) [22], as well as Denmark, Finland, Iceland, Norway and Sweden (the Nordic countries) [23] and several others [24].

The centralized governance approach resulted in a swift and decisive response and initially enjoyed high levels of public trust. It also benefited from clear communication to the public [25]. Yet, levels of trust eroded as the pandemic wore on. There was a general lack of trusted, fair, and participatory policies [26–28].

#### 4.1.2. Over time, the response was politicized, leading to an erosion of public trust

One of the dilemmas policy-makers faced in responding to COVID-19 was having to balance scientific advice and political factors. In Bulgaria, a Medical Expert Council to the Council of Ministers was established to prepare algorithms and guidelines for diagnostics and treatment of COVID-19 patients. However, the work of the Council was terminated a mere two weeks after its establishment. Some of its members opposed the decisions of the national authorities and the National Operational Headquarters, and, when publicized, these controversies had a negative impact on public perceptions of government recommendations. Over time, the governance structures became open to political influences and levels of public trust declined.

In Croatia and Romania, both with elections pending, expert opinions were surpassed by political decisions. Almost all decisions became politically influenced, and the interventions proposed by the experts were also considered political choices. Citizens began to resist and protest against government measures. In some cases, public resistance and unrest were verging on violence [17]. The information provided by national authorities became vague, unclear, and ambiguous, and more and more concerns were raised about the accuracy of official information and the accountability of national authorities. The resulting politicization of COVID-19, as well as politicians not being up to the task and putting their interests first, undermined public trust in public health advice and interventions [29].

The politicization of the response also affected changes in the distribution of power and responsibilities as the pandemic progressed. In Croatia, national authorities started a public discussion with key stakeholders and experts about epidemic and resource management. In Romania, governance was transferred to regional governments, and these were subsequently blamed for unpopular decisions. These examples illustrate that shifting responsibilities from the national to the regional and local level carries the risk of creating new challenges, such as shifting blame when problems arise. Good governance, underpinned by state capacity, political leadership, and community engagement, is key to responding effectively to a pandemic such as COVID-19 [28].

#### 4.1.3. The national legal framework shaped the responses

The experience of Bulgaria, Croatia and Romania illustrates that the legal framework for responding to a pandemic matters, something that was also observed elsewhere in Europe. In particular, the degree to which new or pre-existing legislation allows the implementation of public health measures varied between countries. An example of this are again the Nordic countries. In Sweden, the legal framework did not allow the declaration of a state of emergency due to a pandemic, although the parliament could adopt new laws rapidly [23].

In Bulgaria, Croatia and Romania, disputes arose around the legal basis of infection control measures. In Croatia and Romania, the constitutionality of decisions of national authorities was challenged. In Romania, the Constitutional Court declared the quarantine, isolation, and hospitalization of infected patients to be unconstitutional, whilst in Croatia, the Constitutional Court decided that the ban on working on Sundays was unconstitutional. In Bulgaria, disputes arose around suggested amendments to the Health Act which would have given the Minister of Health power to impose temporary anti-epidemic measures, including restrictions on movement. This was opposed by the President who argued that such restrictions, without a decision of the Parliament, were against the constitution. In June 2020, the Constitutional Court rejected the point of view of the President.

National legal frameworks, in addition to the competencies and obligations of state institutions and decision-makers, also include

the competencies of regional and local governments. In effect, the national legal framework determines which policy options are realistically available. However, existing legislative frameworks have been unclear when it came to implementing them. Reasons for this may include non-participatory adoption of legislative frameworks, as well as the lack of systematic preparation for crisis situations [30].

## 4.2. Preventing transmission

### 4.2.1. Lockdowns were effective in preventing transmissions, but had far-reaching societal and economic consequences

All three countries introduced lockdown restrictions early on, which helped to contain the spread of the disease in spring 2020. Registered infections and deaths remained below the EU average in this period (Fig. 1). Compliance with measures was initially high, but it also became clear that there was no systematic approach to implementation, and no effective management at the regional and local level.

Another challenge was the far-reaching impact of lockdown measures, with the consequences of interventions much greater than expected. The pandemic forced significant changes not only to health and health systems, but also to the social and economic life of the population, by limiting or forbidding gatherings and social contact and forcing the process of education and work into online formats. Economic activities declined greatly and the daily lives of people were disrupted.

The implementation of self-isolation/isolation measures has generally proved to be an effective measure, but was associated with other challenges. For example, instructions were sometimes unclear and difficult to follow, there were difficulties in households with more than one household member, and challenges were experienced in ensuring the supply of food and medical care.

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 [31,32]. 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 [33]. 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 [34].

In all three countries, the response to the COVID-19 pandemic after the summer 2020 was hesitant and characterized by a reluctance to reimpose the measures taken in the first wave. This reluctance was due to economic and political considerations and the growing distrust and resistance of the population against restrictive measures in the absence of high infection rates. The consequence was in late 2020 a rapid increase in cases, numbers of deaths and an epidemic spinning out of control (Fig. 1).

## 4.3. Ensuring sufficient health care resources

### 4.3.1. Physical resources were reorganized to meet the needs of COVID-19 patients

One of the first challenges for all three countries was to provide the physical resources required to deal with the pandemic. This involved reorganizing health facilities and designating hospitals, hospital wards or outpatient facilities as COVID-19 facilities. In addition, PPE, medicines and tests had to be procured in sufficient quantities and distributed to health facilities. Overall, physical resources were reorganized sufficiently quickly. The countries man-

aged to create sufficient bed capacity for the treatment of COVID-19 patients in 2020 and COVID-19 facilities had spare capacity.

### 4.3.2. Human resources remain a major bottleneck

One of the main health system challenges in Southeastern Europe, including for dealing with pandemics such as COVID-19 is the lack of qualified health professionals, especially intensive care unit (ICU) physicians, nurses and other specialised health care staff. The deployment of staff from other specialties that was used in the response to the first wave of COVID-19 cannot be a sustainable long-term solution. Furthermore, many health professionals working with COVID-19 patients became severely overworked, while other health workers had a drastically reduced workload. Those who were working with COVID-19 patients were not always fully trained and supported.

All three countries have undertaken efforts to ensure a sufficient supply of health workers, such as through hiring more staff, redeployment, training, and providing financial and in-kind incentives. In Bulgaria, the scope of medical specialists entitled to financial incentives has been expanded. In Romania, the number of health personnel was increased, and financial incentives and other benefits were also provided for health workers dealing with COVID-19.

However, the pandemic has revealed pre-existing weaknesses in human resource planning and bottlenecks related to human resources [28]. Not surprisingly, shortages existing prior to the COVID-19 pandemic have persisted. There is a general lack of health workers in Croatia and Romania, and a shortage of nurses in Bulgaria [12–14]. These shortages must be addressed in order to improve the resilience of the health system, and to protect the health and well-being of the current workforce.

## 4.4. Providing health services

### 4.4.1. The provision of non-COVID-19 health services was severely disrupted

As in most other countries in Europe [35,36], the provision and uptake of non-COVID-19 health services was affected negatively by the response to the pandemic. However, some countermeasures were taken to continue the provision of essential health services. Formally, in Bulgaria, the provision of health services in outpatient care was not restricted except for some preventive services. However, the difficulties in access that people in rural and remote areas generally face were exacerbated by the imposed travel restrictions in spring 2020. In Croatia, health professionals not dealing with COVID-19 patients had a drastically reduced workload. The resulting underprovision for non-COVID-19 patients might have long-term consequences for population health [37]. In Romania, the provision of non-COVID-19 health services was restricted not only by public health measures, but also by the fear of patients to get infected with COVID-19, and the closure of whole hospitals due to staff infection caused by the lack of protection and safety measures.

### 4.4.2. New digital tools and procedures filled some of the resulting gaps

New digital tools and simplified procedures were useful to support non-COVID-19 patient care. They were introduced or used more widely in 2020, with an increase in telephone or online consultations. This mirrors the experience in many other European countries [38]. In Bulgaria, Croatia and Romania, there was also a simplification of administrative procedures that lowered the threshold for accessing health services. This included the possibility of telephone or online consultations without the use of the electronic national health insurance card, allowing family physicians to prescribe medicines for patients with chronic conditions



based on an initial recommendation from a specialist (without the required periodic re-evaluation), and extending the validity of certain medical documents (including referrals, medical recommendations, and expert evaluations). It remains to be seen how effective and safe these new tools and simplified procedures are and whether they will become routine practice.

## 5. Conclusion

This article explored the initial health system responses to COVID-19 in Bulgaria, Croatia and Romania in 2020. While each of these countries confronted slightly different issues, a number of common challenges and policy dilemmas can be identified that are also of relevance beyond the region of Southeastern Europe.

### 5.1. Timing is key in responding to a pandemic

A first lesson from the experience of Southeastern Europe is that timing is of crucial importance in the response to a pandemic. The early and decisive response by Bulgaria, Croatia and Romania helped to contain the spread of the virus in the first wave. This success led to low infection death rates compared to many other countries in Europe, but also to questions why such harsh lockdown measures were needed. In a way, the three countries became victims of their early success and the potential of an escalating pandemic was underestimated. When the second wave of the virus spread in autumn 2020, Bulgaria, Croatia and Romania were comparatively slow to react and infection rates and deaths increased significantly.

### 5.2. An effective response needs high levels of accountability and trust

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.

### 5.3. There is a need for an appropriate legal framework

Thirdly, an appropriate legal basis is needed for an effective response to a pandemic and countries need to make sure that they act within their existing frameworks. This was a lesson that Croatia and Romania learnt the hard way, when the constitutionality of decisions of national authorities was successfully challenged in the countries' Constitutional Courts. These legal disputes contributed to an erosion of trust in the actions of national authorities.

### 5.4. Health workers are central to well-functioning health systems and an effective pandemic response

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.

### 5.5. More efforts should have been undertaken to maintain the provision of essential health services

The pandemic also highlights the challenge and importance of maintaining essential health services. While evidence so far is weak, the utilisation of non-COVID-19 health services seems to have declined sharply in the three countries and the impact on future morbidity and mortality could be substantial. New tools and administrative procedures were enacted, but it is unclear how sustainable they are and how much they have helped to maintain the provision of essential health services.

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## Declaration of Competing Interest

The authors declare that they have no conflict of interests.

## CRediT authorship contribution statement

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## References

- [1] Eurostat. Eurostat Data Browser. Population on January 1. Luxembourg–Eurostat; 2021. available at: <https://ec.europa.eu/eurostat/databrowser/view/tps00001/default/table?lang=en> accessed 6 December 2021.
- [2] Rechel B, McKee M. Health reform in central and eastern Europe and the former Soviet Union. *Lancet* 2009;374(9696):1186–95.
- [3] Dobrinsky R. The transition crisis in Bulgaria. *Cambridge J Econ* 2000;24(5):581–602.
- [4] Constantin D, Goschin Z, Raluca A. The Romanian economy from transition to crisis. *Retrospects and prospects. World J Soc Sci* 2011;1(3):155–71.
- [5] Ostojić R, Bilas V, Franc S. Challenges for health care development in Croatia. *Coll Antropol* 2012;36(3):707–16.
- [6] Eurostat. Eurostat database. Luxembourg–Eurostat; 2021. Available at: <https://ec.europa.eu/eurostat/data/database> accessed 4 December 2021.
- [7] Džakula A, Vočanec D, Banadinović M, Vajagić M, Lončarek K, Lukačević Lovrenčić I, et al. Croatia: Health System Review. *Health Syst Transit* 2021;23(2):146 i–.
- [8] Dimova A, Rohova M, Koeva S, et al. Bulgaria: Health System Review. *Health Syst Transit* 2018;20(4):1–256.

- [9] Vladescu C, Scintee SG, Olsavszky V, Hernandez-Quevedo C, Sagan A. Romania: Health System Review. *Health Syst Transit* 2016;18(4):1–170.
- [10] European Bank for Reconstruction and Development. Life in Transition Survey III—A decade of measuring transition. London—European Bank for Reconstruction and Development; 2016. Available at: <https://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html> [accessed 4 December 2021].
- [11] Cylus J, Papanicolas I. An analysis of perceived access to health care in Europe: How universal is universal coverage? *Health Policy* 2015;119(9):1133–44.
- [12] OECD/European Observatory on Health Systems and Policies *Bulgaria: Country Health Profile 2021*, State of Health in the EU. Paris: OECD Publishing; 2021.
- [13] OECD/European Observatory on Health Systems and Policies *Romania: Country Health Profile 2021*, State of Health in the EU. Paris: OECD Publishing; 2021.
- [14] OECD/European Observatory on Health Systems and Policies *Croatia: Country Health Profile 2021*, State of Health in the EU. Paris: OECD Publishing; 2021.
- [15] National Health Insurance Fund/NHIF “Annual report of the NHIF’s activity for 2019”. Sofia: National Health Insurance Fund; 2020.
- [16] Oliver K, Lorenc T, Tinkler J, Bonell C. Understanding the unintended consequences of public health policies: The views of policymakers and evaluators. *BMC Public Health* 2019;19:1057.
- [17] European Observatory on Health Systems and Policies/European Commission/WHO Europe. COVID-19 Health System Response Monitor (HSRM). 2021. Available at: <https://eurohealthobservatory.who.int/monitors/hstrm/> [accessed 31.10.21].
- [18] Rechel B., Maresso A., van Ginneken E. Health Systems in Transition. Template for authors. Copenhagen—World Health Organization (acting as the host for, and secretariat of, the European Observatory on Health Systems and Policies); 2019.
- [19] Puca E, Čivljak R, Arapović J, et al. Short epidemiological overview of the current situation on COVID-19 pandemic in Southeast European (SEE) countries. *J Infect Dev Ctries* 2020;14(5):433–7.
- [20] Dascalu S. The successes and failures of the initial COVID-19 pandemic response in Romania. *Front Public Health* 2020;8:344.
- [21] Gherghel I, Bulai M. Is Romania ready to face the novel coronavirus (COVID-19) outbreak? The role of incoming travelers and that of Romanian diaspora. *Travel Med Infect Dis* 2020;34:101628.
- [22] Sagan A, Bryndova L, Kowalska-Bobko I, et al. A reversal of fortune: Comparison of health system responses to COVID-19 in the Visegrad Group during the early phases of the pandemic. *Health Policy* 2021. doi:10.1016/j.healthpol.2021.10.009.
- [23] Saunes IS, Vrangbæk K, Byrkjeflot H, et al. Nordic responses to COVID-19: Governance and policy measures in the early phases of the pandemic [published online ahead of print, 2021 Sep 5]. *Health Policy* 2021. doi:10.1016/j.healthpol.2021.08.011.
- [24] Al-Salem W, Moraga P, Ghazi H, Madad S, Hotez PJ. The emergence and transmission of COVID-19 in European countries, 2019–2020: A comprehensive review of timelines, cases and containment. *Int Health* 2021;13(5):383–98. doi:10.1093/inthealth/ihab037.
- [25] Srdjlinović A, Božić J, Fath BD. Croatian crisis management system’s response to COVID-19 pandemic through the lens of a systemic resilience model. *INDECS* 2020;18(4):408–24.
- [26] United Nations Department of Economic and Social Affairs (DESA) The Role of Public Service and Public Servants During the COVID-19 Pandemic; Policy Briefs, New York: United Nations Department of Economic and Social Affairs; 2020. Available at: doi:10.18356/2b3f5e27-en [accessed 19.11.20].
- [27] Nitzan D, Perehinets I, Meyer JS, Smallwood CA. Drawing lessons on better governing for emergencies for improved resilience against health emergencies. *Eurohealth* 2021;27(1):16–19.
- [28] Sagan A, Webb E, Dheepa R, Karanikolos M, Scott LG. Health system resilience during the pandemic: It’s mostly about governance. *Eurohealth* 2021;27(1):10–15.
- [29] Nathan NL, Muscat NA, Middleton J, Ricciardi W, Permanand G. Public health leadership and the COVID-19 pandemic in Europe. *Eurohealth* 2021;27(1):4–9.
- [30] Smallwood CA, Perehinets I, Meyer JS, Nitzan D. WHO’s emergency response framework: A case study for health emergency governance architecture. *Eurohealth* 2021;27(1):20–5.
- [31] Đogaš Z, Lušić Kalcina L, Pavlinac Dodig I, et al. The effect of COVID-19 lockdown on lifestyle and mood in Croatian general population: A cross-sectional study. *Croat Med J* 2020;61(4):309–18.
- [32] Pišot S, Milovanović I, Šimunič B, et al. Maintaining everyday life praxis in the time of COVID-19 pandemic measures (ELP-COVID-19 survey). *Eur J Public Health* 2020;30(6):1181–6.
- [33] OECD The COVID-19 crisis in Croatia, Paris: OECD; 2020. Available at: [ <https://www.oecd.org/south-east-europe/COVID-19-Crisis-in-Croatia.pdf> ] [accessed 19.11.20].
- [34] Permanand G, Muscat NA. Responding to the COVID-19 pandemic in Europe: Towards stronger policy that incorporates the impact of social disparities. *Eurohealth* 2021;27(1):26–31.
- [35] OECD/European Observatory on Health Systems and Policies. How have countries restarted more routine ambulatory care activities during the COVID-19 pandemic?, Copenhagen: COVID-19 Health System Response Monitor; 2020. Available at: <https://analysis.covid19healthsystem.org/index.php/2020/11/24/how-have-countries-restarted-more-routine-ambulatory-care-activities-during-the-COVID-19-pandemic/> [accessed 26.11.20].
- [36] Jakab M, Limaro Nathan N, Pastorino G, et al. Managing health systems on a seesaw—Balancing the delivery of essential health services whilst responding to COVID-19. *Eurohealth* 2020;26(2):63–7.
- [37] Kalanj K, Marshall R, Karol K, Tiljak MK, Orešković S. The impact of COVID-19 on hospital admissions in Croatia. *Front Public Health* 2021:1307.
- [38] Richardson E, Aissat D, Williams GA, Fahy N. Keeping what works: Remote consultations during the COVID-19 pandemic. *Eurohealth* 2020;26(2):73–6.