

## REGULATORY SYSTEMS OF SELECTED EUROPEAN UNION MEMBER STATES IN COVID-19 PANDEMIC MANAGEMENT AND LESSONS FOR THE FUTURE

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### **ABSTRACT**

*The European Union (EU) actively responded to the pandemic and the consequences of the pandemic in different areas of human activity (health, economic, social, etc.) adopting a series of regulations, measures and guidelines in different fields. EU member states acted in accordance with EU regulations and within their own legal system and the management structures. The aim of this paper was to analyze ten selected EU member states and their regulatory responses in the approach to pandemic control in relation to the mortality rate per million inhabitants on January 15, 2021. The following hypothesis was set: The regulatory systems and management structures of selected EU member states in the framework of the management of the COVID-19 pandemic have been successfully set up and implemented and have contributed to the lower mortality rate per million inhabitants until January 15, 2021.*

*Ten EU countries were selected for the study according to their mortality rate per million inhabitants on January 15, 2021. Besides Croatia (average mortality), research included three member states with high (Belgium, Slovenia, Czechia), three with average (Hungary, Austria, Slovakia) and three with low mortality rate per million inhabitants (Ireland, Denmark, Finland). All available data from EU and ten selected countries were collected and analysed: about legal framework for crisis management, regulatory powers, level of decentralization in the health care system and whether the timeline of the pandemic control criteria according to the Institute for Health Metrics and Evaluation (IHME) was adequately set. Data were analysed in Microsoft Office Excel.*

*Given the obtained results, hypothesis can be considered only partially proven. The legal framework used by studied EU countries for adopting pandemic control measures was not consistently associated with mortality rate in this research. All studied EU countries used legal framework that existed prior to the COVID-19 pandemic, four of them had states of emergency provided in the Constitution (Czechia, Hungary, Slovakia and Finland), four of them effectively declared statutory regimes (Slovenia, Hungary, Croatia, Slovakia), and Belgium adopted pandemic control measures using special legislative powers. Three studied countries (Austria, Denmark, Finland) had high level of decentralised decision making in health sector and lower COVID-19 mortality rate. In the first pandemic wave (start in March, 2020) all studied countries respected the timeline in adopting pandemic control measures according to the IHME criteria. In the second pandemic wave (start in October, 2020) only four countries (Czechia, Ireland, Denmark, Finland) respected the timeline in adopting pandemic control measures and three (Ireland, Denmark, Finland) were in low mortality group.*

*Within the concluding considerations of the studied countries and in their pandemic management models, Finland and Denmark were recognised as the most successful with lowest COVID-19 mortality rates. Long tradition of Public Health, decentralized health care decision-making, high level of preparedness in crisis management and adequate timeline in implementation of the pandemic control measures led to lower mortality in COVID-19 pandemic. In the future EU could take even more active role within its legal powers and propose scientific based approach in crisis management to help countries implement measures to preserve lives of EU citizens.*

**Keywords:** *pandemic, COVID-19, legal framework, European Union member states, mortality rate*

## 1. INTRODUCTION

In December 2019 in the city of Wuhan, capital of the China province of Hubei, human to human transmission of an unknown virus started. Its origin or reservoir was unknown. Epidemic potential of novel virus made it very dangerous for globalised world used to intercontinental travel. In just a few weeks virus was identified and named SARS-CoV-2. Virus spread fast all around the world, and in March 2020 all European Union (EU) states had cases of infection in their territory. World Health Organization (WHO) made the assessment on March 11 that COVID-19 could be characterized as a pandemic.

There were several steps in controlling pandemic: to start scientific research of novel virus, to track pandemic, to decide what measures and when to take into account to control pandemic and to set the legal framework to act. All around the world, including the EU, countries have faced significant institutional and regulatory challenges in order to implement urgent and rigorous measures in their legal systems to preserve lives, health and public health. At the same time, the fundamental rights and freedom of citizens and the normal functioning of society have been questioned.

The European Union (EU), through its own regulatory powers, has been very active in responding to the pandemic caused by the novel coronavirus that causes COVID-19, adopting a series of regulations, measures and guidelines in various fields (public health, agriculture, competition, consumer rights, employment and social policy, entrepreneurship, regional policy, fisheries, human rights, etc.). Balancing with difficult decisions, EU countries have responded to pandemic crisis in various ways. At the start of the pandemic in 2020 most countries had more or less strict lockdown, and afterward measures started to vary considerably.<sup>1</sup>

Haug et al. made a study of non-pharmaceutical measures that influence the spread of SARS-CoV-2. They used more than 6,000 different measures and studied their effect on Rt (effective reproduction number) of COVID-19. Researchers concluded that finding the right moment for implementation of non-pharmaceutical measures, measures already in use, governance indicators and social development make difference in the effectiveness of interventions. In their paper, COVID-19 restrictions were grouped in seven categories. After validating their findings against more than 40,000 measures across 226 countries, they concluded that governments should consider, at first, less strict measures, but early enough, such as border restrictions, governmental support to vulnerable population and risk-communication strategies.<sup>2</sup> Timeline in introducing pandemic control measures was important. Institute for Health Metrics and Evaluation (IHME) has evaluated the COVID-19 epidemic in a different countries. They proposed that governments need to consider tightening the measures when 8 deaths/day/million inhabitants occur.<sup>3</sup> Mandates at that moment are important for making sure that hospital systems are able to handle all COVID-19 patients, otherwise there will be adverse effect on mortality trends.

The aim of this study was to analyze the management structures of selected member states of the EU and the Croatia, their regulatory responses in the approach to pandemic control in relation to the mortality rate per million inhabitants. In the analysis the following research questions were taken into account in the selected countries: whether they have a legal framework for dealing with crisis situations such as pandemics, which bodies have regulatory powers in managing

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<sup>1</sup> Angrist, S. et al., *Oxford COVID-19 Government Response Tracker in collaboration with the International Public Policy Observatory*, What we learned from tracking every COVID policy in the world, [<https://theconversation.com/what-we-learned-from-tracking-every-covid-policy-in-the-world-157721>], Accessed 28 March 2021.

<sup>2</sup> Haug, N., et al., *Ranking the effectiveness of worldwide COVID-19 government interventions*, *Nat Hum Behav*, No. 4, 2020, pp. 1303-1312.

<sup>3</sup> Institute for Health Metrics and Evaluation (IHME), *COVID-19 resources*, [www.covid19healthdata.org/global?view=total-deaths&tab=trend](http://www.covid19healthdata.org/global?view=total-deaths&tab=trend)], Accessed on 22 January 2021.

the pandemic, what is the level of decentralization in the health care system and whether the timeline of the pandemic control criteria according to the IHME was adequately set and measures promptly implemented. Hypothesis was set: The regulatory systems and management structures of selected EU member states in the framework of the management of the COVID-19 pandemic have been successfully set up and implemented and have contributed to the lower mortality rate per million inhabitants until January 15, 2021.<sup>4</sup> The mortality rate per million inhabitants' indicator was used as a measure of success as one of the strongest indicators given that the COVID-19 pandemic is still ongoing.

## 2. METHODS

COVID-19 responses for the ten European Countries selected regarding mortality rate per million inhabitants on January 15, 2021 were studied: Croatia with the average COVID-19 mortality rate, three member states with high mortality rate (1200-1800 deaths/million inhabitants; Belgium, Slovenia, Czechia), three with average mortality rate (600-1200 deaths/million inhabitants; Hungary, Austria, Slovakia) and three with low mortality rate (less than 600 deaths/million inhabitants; Ireland, Denmark, Finland).<sup>5</sup> The mortality rate per million inhabitants' indicator was used as a measure of success as one of the strongest indicators given that the COVID-19 pandemic is still ongoing. Data for all countries were collected and analysed for COVID-19 legal framework, government response, state bodies with regulatory powers, level of decentralization in the health care system, timeline of the pandemic control measures and mortality rate per million inhabitants.

In order to analyze the regulatory responses in crisis management of the observed EU member states were taken into account: European Parliament study "States of emergency in response to the corona virus crisis", WHO data in "COVID-19 Health System Response Monitor" and Organisation for Economic Co-operation and Development (OECD) document "Decentralisation and performance measurement systems in health care" and other scientific papers of relevant authors. Public health and epidemiological data were analysed from „Coronavirus Pandemic (COVID-19)" on web site Our World in Data, Government Response Tracker (Oxford) and "Real Time Statistics Project" on web site Worldometers.<sup>6</sup>

<sup>4</sup> Roser, M. *et al.*, *Coronavirus Pandemic (COVID-19)*, [www.ourworldindata.org](http://www.ourworldindata.org), [https://ourworldindata.org/coronavirus], Accessed 20 January 2021.

<sup>5</sup> Worldometers.info, *Covid-19 Coronavirus pandemic*, [www.worldometers.info](http://www.worldometers.info) [http://www.worldometers.info https://www.worldometers.info/coronavirus], Accessed 15 January 2021.

<sup>6</sup> Roser, *op. cit.*, note 4; Hale, T. *et al.*, *The Oxford COVID-19 Government Response Tracker (OxCGRT)*, [www.bsg.ox.ac.uk](http://www.bsg.ox.ac.uk), [https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker], Accessed on 10 January 2021; Worldometers.info, *op. cit.*, note 5.

In this research, mortality trends and governments policy responses summarized as Stringency Index were used.<sup>7</sup> Stringency Index takes into account nine categories of measures: school and workplace closures, cancellation of public events, restrictions on public gatherings, closures of public transport, stay-at-home requirements, public information campaigns, restrictions on internal movements, and international travel controls. Textual data were synthesised and numeric data analysed with Microsoft Office Excel.

### 3. RESULTS

#### 3.1. EU regulatory activities related to the crisis caused by COVID-19

The Treaty of Lisbon<sup>8</sup> clearly defines and distributes powers between Member States and the EU, thus regulating areas in which the EU has exclusive competence, areas in which the EU has shared competence with Member States and areas in which the EU has the power to support, coordinate or supplement actions of the Member States.<sup>9</sup> The area of health, especially public health, falls into the latter area and the EU has no significant regulatory powers in this area, but since the WHO declared a pandemic, the EU has achieved some regulatory activity related to this area.

The EU institutions based their regulatory activities, in area of health, on the Consolidated Version of the Treaty on the Functioning of the European Union (TFEU).<sup>10</sup> Thus, Article 168 of TFEU (Lisbon) regulates the field of public health, stating that EU action complements national policies and encourages cooperation between Member States, supports cooperation with third countries, but also with

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<sup>7</sup> Roser, *op.cit.*, note 4.

<sup>8</sup> The Treaty of Lisbon signed on December 13, 2007., and entered into force on December 1, 2009. It resulted in two treaties, the Treaty on the EU and the Treaty on Functioning of the EU. More in: Čapeta, T., *Europska unija po Lisabonskom ugovoru*, Hrvatska komparativna i javna uprava, Vol. 10, No. 1, 2010., pp. 43 – 44; Čapeta, T.; Rodin, S., *Osnove prava Europske unije*, Narodne novine, Zagreb, 2011., p. 11; Craig, P.; de Búrca, G., *EU Law Text, Cases and Materials, fourth edition*, Oxford University Press, Oxford, New York, 2008., pp. 12 – 34

<sup>9</sup> Ljubanović, B.; Matković, B., *Lisabonski ugovor – o njegovoj strukturi i aspektima utjecaja na upravno pravo i javnu upravu*, Pravni vjesnik, Vol. 31, No. 2, 2015, p. 182. See also: Craig, P., *EU Administrative Law*, Oxford University Press, Oxford, New York, Second edition 2012., pp. 26 – 33. As the Treaty of Lisbon resulted in the Treaty on the EU and the Treaty on the Functioning of the EU, Art. 3. The Treaty on the Functioning of the EU regulates areas in which the EU has exclusive competence, Art. 4. areas in which the EU has shared competence with the Member States and Art. 6. areas in which the EU has the power to support, coordinate and supplement the action of the Member States are identified.

<sup>10</sup> Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, Official Journal of the European Union [2012] C 326/47.

international organizations. In addition, Article 35 of the Charter of Fundamental Rights of the European Union determines that everyone has the right to access preventive health care and the right to treatment, in accordance with national legislation, and during the implementation and determination of EU policies, a high level of human health protection is ensured.

Acting within the aforementioned regulatory powers, at the time of writing this paper (early 2021), in the field of public health in the ordinary legislative procedure by the European Parliament and the Council, and in relation to COVID-19 pandemic, two regulations were adopted, and within the other normative activities of the EU institutions: 13 recommendations by the Council (EU), 8 implementing regulations by the Commission (3 no longer in force), 2 implementing decisions also by the Commission, 1 resolution by the Council and representatives of the Member States and 1 delegated regulation by the Commission.

It can be seen that the regulatory activity is significantly higher within the areas where the EU has exclusive competence and shared competence with the Member States than in other areas where it has the power to support, coordinate and complement action. In particular, the fundamental regulatory response of the institutions to the COVID-19 pandemic challenges was of economic nature.<sup>11</sup> Thus it can be seen that, in order to prevent the consequences of pandemic, the EU institutions and offices took regulatory actions and adopted 374 new or amended legal acts, and more than 30 acts in each of the following areas: economic and monetary policy, environment, consumers and human health, general financial and institutional policy, transport policy, agriculture, external relations, freedom of movement for workers and social policy and other areas.<sup>12</sup>

### **3.2. Regulatory responses of selected Member States to the health crisis caused by the COVID-19 pandemic**

Since the WHO declared a global pandemic, the EU Member States have responded to the emerging global crisis with various normative activities. Some Member States regulate situation of infectious disease threat as a form of emergency and have normatively resolved it through their pre-pandemic constitutions, others through laws, while some states have or regulated and adapted to this circumstances during the pandemic.

<sup>11</sup> Von Ondarza, N., *The European Parliament's Involvement in the EU Response to the Corona Pandemic*, [www.swp-berlin.org](https://www.swp-berlin.org), [https://www.swp-berlin.org/en/publication/the-european-parliaments-involvement-in-the-eu-response-to-the-corona-pandemic/], Accessed 15 February 2021.

<sup>12</sup> [https://eur-lex.europa.eu/search.html?scope=EURLEX&text=COVID&lang=hr&type=quick&qid=1614342642530&DTS\_SUBDOM=LEGISLATION], Accessed 15 March 2021.

European Convention on Human Rights<sup>13</sup> in Art. 15. connects the state of emergency with war and other situations that threaten the survival of people. In such circumstances, any Contracting Party to the Convention may take measures derogating from its obligations under the Convention, provided that such measures do not conflict with other obligations under the international law. Furthermore, Charter of Fundamental Rights of the European Union<sup>14</sup> in Art. 52. refers to the above-mentioned situations by regulating that any restrictions on freedoms and rights, which are determined by the Charter itself, must be provided for by law in a way that the very essence of precisely those rights and freedoms is respected. These restrictions are framed by the principle of proportionality because they are possible only if necessary and are in line with the general interest objectives affirmed by the EU or the needs of protecting the rights and freedoms of others. Thus, both the Convention and the Charter refer to the necessity of legislative regulation of the state of emergency of the signatory states, i.e. the EU Member States, in a way that the same states are determined and concretized by national positive law.

Legal theory defines states of emergency as states of necessity, states of emergency measures or emergency situations when the freedoms and rights guaranteed by the constitution are restricted due to the need to defend against external enemies, riots, terrorism and major natural disasters such as floods and earthquakes aimed at opposing the enemy and preserving the political communities and the survival of the state. Then the Roman principle of “*Salus rei publicae suprema lex esto*” can be taken into consideration where the salvation of the state is taken as the highest law and constitutional rights and freedoms are suspended, and decision-making in the state is entrusted to the executive authorities until the danger is eliminated.<sup>15</sup> States of emergency are characterized as a situation in which the country is faced with death threats and is forced to take actions that are contrary to the principles of its own legal system.<sup>16</sup>

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<sup>13</sup> European Convention on Human Rights, Official Gazette – international treaties, 18/97, 6/99, 14/02, 13/03, 9/05, 1/06, 2/10.

<sup>14</sup> Charter of Fundamental Rights of the European Union, Official Journal of the European Union [2012] C326/391.

<sup>15</sup> Scheppele, K.L., *Law in a Time of Emergency: States of Exception and the Temptations of 9/11*, Journal of Constitutional Law, Vol. 6, No. 5, 2004, p. 1004; Smerdel, B.; Sokol, S., *Ustavno pravo*, Narodne novine, četvrto neizmjenjeno izdanje, Zagreb, 2009, p. 125.

<sup>16</sup> Crego, M.D., Kotanidis, S., *States of emergency in response to the coronavirus crisis, Normative Response and parliamentary oversight in EU Member States during the first wave of the pandemic*, European Parliamentary Research Service, [[https://www.europarl.europa.eu/RegData/etudes/STUD/2020/659385/EPRS\\_STU\(2020\)659385\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/659385/EPRS_STU(2020)659385_EN.pdf)], Accessed 15 March 2021, p. 10. Authors determine four mentioned categories: Constitutional states of emergency refer to those states of emergency provided by the constitution of a Member State. Statutory regimes refer to those regimes provided by statute, rather than in the constitution, and which regulate the type of emergencies and powers attributed to the au-

The regulatory frameworks used by the EU Member States during the first and the second waves of the COVID-19 pandemic were, in fact, different. Some Member States have declared a state of emergency, in accordance with the provisions of the constitution or law, and others have channelled the taking of emergency measures through laws or other forms of normative acts. Yet in terms of content, the measures that have been prescribed by various sources of law in respect of each EU Member State were similar. In the “States of emergency in response to the corona virus crisis” study, four main normative intervention categories are set in most of the 27 EU Member States during the COVID-19 pandemic:

- “constitutional states of emergency,
- statutory regimes,
- measures adopted under special legislative powers,
- measures adopted almost exclusively under ordinary legislation.”<sup>17</sup>

According to the research methodology, ten EU Member states COVID-19 pandemic responses were studied with an aim to prove hypothesis in question.

### 3.2.1. *Belgium*

Belgium does not provide for a state of emergency in its Constitution and even in Art. 187. of the same it is emphasized that the Constitution cannot be suspended either in whole or in part.<sup>18</sup> However, in accordance with Art. 105. of the same Constitution, the possibility is provided for the Parliament to delegate legislative powers to the Government in compliance with the prescribed legal principles, and the Government itself, when acting in accordance with the above, may restrict rights and freedoms but not abolish them. Belgium did not declare a state of emergency, but two laws adopted on March 27, 2020 enabled the adoption of measures to control the spread of the COVID-19 pandemic. These laws enable the Government to take measures to control the pandemic in the areas of public health, the economy and the proper functioning of the courts and to define sanctions against violators of the measures. Specific measures in the respective administrative areas have been implemented with the ministerial decree, especially by the Minister of the Interior, according to which cultural, sports and recreational activities were banned

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thorities concerned in an organic manner. Special legislative powers refer to the constitutional powers granted to the executive to adopt normative acts with the same legal standing as primary laws under urgent/exceptional circumstances and subject to parliamentary oversight.”

<sup>17</sup> *Ibid*, p. 10.

<sup>18</sup> Popelier, P., *COVID-19 legislation in Belgium at the crossroads of a political and a health crisis*, The Theory and Practice of Legislation, Vol. 8, No. 1 - 2, 2020, p. 138.



and schools and restaurants closed.<sup>19</sup> Additional measures were taken at local and regional levels as pandemic management could not be carried out at only one level. The pandemic management system in Belgium is based on the National Focal Point for the International Health Regulations, which is actually a national risk management body and which is based on two pillars, the Risk Assessment Group (RAG) which analyzes risks to citizens, based on epidemiological and scientific data and on the Risk Management Group (RMG) which makes decisions in the field of public health relying on the former.<sup>20</sup> As at the beginning of the pandemic, the crisis management system was poor because measures at various levels were taken spontaneously and inconsistently, the Prime Minister decided on March 12, 2020 to establish The National Security Council at the federal level. This body consists of the Prime Minister, the Deputy Prime Ministers and, more broadly, the Ministers-President of the Regions and Communities, and from that date this body has taken all political decisions concerning crisis management. There are three additional national bodies and seven more crisis bodies have been established outside the health care area.<sup>21</sup>

### 3.2.2. Slovenia

The Slovenian Constitution of 1991 in Art. 92. provides for a state of emergency in cases of great dangers that threaten the survival of the state. However, the state of emergency in Slovenia has not been declared, and the measures adopted to control the pandemic are based on laws, decrees and ordinances. On March 12, 2020, the Government of Slovenia adopted the Decree on the Declaration of COVID-19 epidemic, which is based on the Communicable Diseases Act and the expert opinion of the National Institute of Public Health. The Government has adopted several basic measures, among others measures to prevent gatherings and gatherings in public places, a ban on movement outside the municipality of permanent or temporary residence. However, in April 2020, the Slovenian Constitutional Court suspended measures relating to movement outside the municipality and instructed the Government to verify the justifications for the measures taken.<sup>22</sup> In November 2020, the legislative intervention continued in order to

<sup>19</sup> Binder, K. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States*, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649408/EPRS\_BRI(2020)649408\_EN.pdf], Accessed 18 March 2021, p. 2.

<sup>20</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, www.covid19healthsystem.org, [https://www.covid19healthsystem.org/countries/belgium/livinghit.aspx?Section=5.1%20Governance&Type=Section], Accessed 18 March 2021.

<sup>21</sup> *Ibid.*

<sup>22</sup> Atanassov, N. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States II*, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651914/EPRS\_BRI(2020)651914\_EN.pdf], Accessed 20 March 2021, pp. 10 – 11.

respond to the second wave of the epidemic and the Slovenian National Assembly adopted the Act Determining the Intervention Measures to Mitigate the Consequences of the Second Wave of COVID-19 epidemic, which is actually a package of 6 regulations.<sup>23</sup> The management of the consequences of the COVID-19 pandemic in Slovenia is entrusted to the Government and the Ministry of Health, in coordination with the National Institute of Public Health.

### 3.2.3. *Czechia*

According to the provisions of the Czech Constitution, the Czech Parliament can declare a state of war, and additional regulation of state of emergency is covered by the Constitutional Act on the Security of the Czech Republic through a state of threat (to state sovereignty) and a state of emergency. The state of emergency was declared by the Government in the Czech Republic on March 12, 2020 for a period of 30 days and was extended twice, and ended on May 17, 2020. The state of emergency was re-declared on October 5, 2020 and was extended several times until February 14, 2021. The state of emergency is declared by a Government resolution or a decision of the Prime Minister that must be confirmed by the Government within 24 hours of its declaration.<sup>24</sup> It is crucial that the proclamation of a state of emergency by Government resolution determines which rights will be restricted and which duties will be imposed. Accordingly, 2000 the Crisis Management Act was adopted that authorizes the Government to manage the crisis and adopt restrictive measures concerning the restriction of gathering, movement and work but also the protection of national borders which can be taken only for a limited period, i.e. as long as the state of emergency lasts. In the implementation of this Act, the Government has adopted a number of Government resolutions on the crisis measures, such as the closure of borders, restrictions on movement and wearing masks in public. Pursuant to the Act on the Protection of Public Health, the Ministry of Health limited events and closed places of public gatherings. After the declaration of the state of emergency, the Government activated the Central Crisis Staff, which is a working body of the Government in charge of crisis management, and this body is chaired by the Minister of Defence or the Minister of the Interior.<sup>25</sup> The COVID-19 Central Management Team was estab-

<sup>23</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org](http://www.covid19healthsystem.org), [https://www.covid19healthsystem.org/countries/slovenia/livinghit.aspx?Section=5.1%20Governance&Type=Section], Accessed 22 March 2020.

<sup>24</sup> Alexandre, Z. et al., *States of emergency in response to coronavirus crisis: Situation in certain Member States IV*, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652002/EPRS\_BRI(2020)652002\_EN.pdf], Accessed 25 March 2021, p. 4.

<sup>25</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org], [https://www.covid19healthsystem.org/countries/czechrepublic/liv-

lished in March, an advisory body to the Government to implement Government decisions, monitor and coordinate testing and laboratory capacity and intensive care capacity, but also to monitor the occurrence of potential cases. This body also makes recommendations for the introduction of new measures in controlling the consequences of the COVID-19 pandemic. In mid-April 2020, the number of infected and dead began to decline, so the Government adopted the Restrictions Release Plan (RRP), which provided for the easing of measures in five phases.

### 3.2.4. *Hungary*

On 11 March, 2020 with the Government Decree, Hungary declared a state of emergency for the entire territory of the country, given the possibilities contained in the provisions of Art. 48. to 54. of the Fundamental Law of Hungary (Hungarian Constitution). Yet two important laws provide more detailed regulation of crisis management. Namely, the Disaster Management Act<sup>26</sup> has been in force since 2011 and regulates hazardous situations that can be caused by an epidemic and also sets out extraordinary government rules and measures that can be adopted during the state of emergency. Corona virus Containment Act<sup>27</sup> was adopted on March 30, 2020 and allows the Government more specifically to adopt measures to combat the COVID-19 pandemic, among other things the Government may issue Government Decrees that are repealed by the cessation of the state of emergency. The measures that the Government may adopt according to the said act are those which refer to the areas of protection of health, life, property and which enable the stability of the national economy. Pursuant to this act, the National Assembly (Hungarian Parliament) authorizes the Government to extend the application of decrees issued for a certain period, until the end of the state of emergency.<sup>28</sup> This Act also affected the amendments to the Criminal Code of Hungary, which amended the provisions relating to the existing criminal offense. Crisis management in Hungary is in the hands of the Government, and the basic support stems from the so-called Operative Corps consisting of the Minister of the Interior and the Minister of Human Capacities and representatives of the National Chief Medical Officer of the National Public Health Centre. He/she is responsible for the implementation of epidemiological measures together with re-

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inghit.aspx?Section=5.1%20Governance&Type=Section], Accessed 25 March 2021.

<sup>26</sup> Act CXXVIII of 2011 on disaster management and amending certain related Acts, [<https://net.jogtar.hu/jogszabaly?docid=a1100128.tv>], Accessed 19 March 2021.

<sup>27</sup> Act XII of 2020 on the containment of coronavirus [<http://abouthungary.hu/media/DocumentsModell-file/1585661547-act-xii-of-2020-on-the-containment-of-coronavirus.pdf>], Accessed 20 March 2021.

<sup>28</sup> Binder, *op.cit.*, note 19, pp. 6-7.

gional and local government offices and their public health departments. In order to control the consequences of the crisis, the Government has established 10 action groups whose area of activity includes the adoption of defence, police, health and economic measures. It is worth mentioning at this point, the establishment of the National Hospital Directorate General on November 18, 2020, whose task is to monitor the health system and take care of a transparent health management system during the state of emergency, headed by the Minister of the Interior.<sup>29</sup>

### 3.2.5. Croatia

Constitution of the Republic of Croatia<sup>30</sup> Art. 17. provides for three types of emergency, namely in the event of a state of war, imminent threat to independence and unity, and in the event of major natural disasters. However, in accordance with the constitutional powers, the Government of the Republic of Croatia did not decide on the procedure for activating the emergency situation, but relied on the existing statutory framework relating to civil protection and prevention of infectious diseases.<sup>31</sup> The Civil Protection System Act<sup>32</sup> is amended by the provisions of the new Article 22a which regulates that, in case of special circumstances that could not be foreseen and controlled and which endanger the life and health of the citizens, property of higher value, environment, economic activity, the Civil Protection Authority makes decisions carried out by the civil protection headquarters of local and regional self-government units. The Infectious Diseases Protection Act<sup>33</sup> is also amended and regulates the implementation of epidemiological measures during the epidemic period, and that period is declared by the Minister of Health at the proposal of the Croatian Institute for Public Health (CIPH). The COVID-19 disease pandemic was declared by the Minister of Health on March 11, 2020. According to Art. 47. of the Infectious Diseases Protection Act, the Minister of Health may, at the proposal of the CIPH, order a series of special security measures mentioned in the article for the protection of the population, and also some of the measures mentioned in the article may be ordered by the Civil Protection Authority in coordination with the Ministry of Health and the CIPH. Decisions of the Civil Protection Authority

<sup>29</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org], [https://www.covid19healthsystem.org/countries/hungary/living-hit.aspx?Section=5.1%20Governance&Type=Section.], Accessed 20 March 2021.

<sup>30</sup> Ustav Republike Hrvatske, Official Gazette 85/10 – consolidated version, 05/14.

<sup>31</sup> Bačić Selanec, N., *Croatia's Response to COVID-19: On Legal Form and Constitutional Safeguards in Times of Pandemic*, [https://verfassungsblog.de/croatias-response-to-covid-19-on-legal-form-and-constitutional-safeguards-in-times-of-pandemic/], Accessed 27 March 2021.

<sup>32</sup> Zakon o sustavu civilne zaštite, Official Gazette, 82/15, 118/18, 31/20, 20/21.

<sup>33</sup> Zakon o zaštiti pučanstva od zaraznih bolesti, Official Gazette, 79/07, 113/08, 43/09, 130/17, 114/18, 47/20, 134/20.

are made under the supervision of the Government. As of March 16, 2020 in the Croatia, schools, universities and kindergartens ceased to operate, and three days later the Civil Protection Authority issued a series of measures to prevent the spread of the virus that were valid for 30 days or more and were repeatedly repealed and reintroduced.<sup>34</sup> In Croatia, County and City civil headquarters had the opportunity to make stricter decisions than those prescribed by the National Authority.

### 3.2.6. *Austria*

The Austrian Constitution actually consists of several constitutional acts and it does not provide for a state of emergency. However, certain procedures are envisaged that are applicable in times of distress according to Art. 18. of the Bundes-Verfassungsgesetz of 1945. But, as both houses of the Austrian Parliament could meet for the entire duration of the coronavirus pandemic, it was not necessary to engage previous constitutional and legal provisions. In March 2020 the National Council passed a series of laws based on the Epidemics Act of 1950, aimed at slowing the spread of the COVID-19 pandemic. This Act regulates measures to combat the spread of a disease, which includes quarantine, the implementation of protective measures for medical personnel or other vulnerable persons, measures for social gatherings, traffic restrictions, the closure of schools or other facilities, etc.<sup>35</sup> Several adopted the so-called “COVID-19 Acts” regulate the closure of factories, offices and companies that have direct contact with consumers, public gatherings, access to public institutions, the functioning of market etc. The governments of the federal units are in charge of implementing these measures at the federal level, and all measures must be proportionate to the nature of the need. Measures are determined not only by law, but also at the regional level by the governments of the federal states, which, if necessary, can adopt stricter measures for individual areas. Crisis management in Austria at the federal level, regarding the response to the COVID-19 pandemic, is entrusted to the Ministry of Health, which is headed by the Federal Minister for Health in consultancy with the Red Cross leaders and experts in other fields. A special body at the national level that coordinates the response of the Government to the crisis and takes care of public safety is The State Crisis Disaster Management.<sup>36</sup>

<sup>34</sup> Vlada Republike Hrvatske, [<https://vlada.gov.hr/vijesti/od-ponoci-na-snazi-odluke-stozera-civilne-zastite-rh-u-svrhu-sprjecavanja-sirenja-zaraze-novim-koronavirusom/29026>], Accessed 27 March 2021; [<https://www.covid19healthsystem.org/countries/croatia/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 30 March 2021.

<sup>35</sup> Atanassov, *op.cit.*, note 22.

<sup>36</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org](https://www.covid19healthsystem.org), [<https://www.covid19healthsystem.org/countries/austria/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 20 March 2021.

### 3.2.7. Slovakia

In Slovakia, according to the provisions of Art. 5. of the Constitutional Act of 2002, when there is a threat to human life and health, including a pandemic and when there is a threat to the environment and property caused by natural disasters, industrial, traffic or other incidents, the Government may declare a state of emergency for a period of 90 days and only for the territory that is exposed to danger i.e. risk. On March 11, 2020 the Government, by the Government Resolution No 111/2020 on extraordinary situations, declared a state of emergency for the entire territory of Slovakia in response to the spread of the COVID-19 pandemic. Already on March 15, 2020 in compliance with the mentioned Art. 5, a state of emergency was declared by the Government Resolution No. 114/2020 for health care institutions and regions in order to deploy staff and health equipment more efficiently and to limit the strike of employees.<sup>37</sup> The state of emergency lasted for only few days when the Government extended it for the entire country and to all medical and social care institutions by Government Resolutions No 115/2020 and No 169/2020 of March 18 and 27 on extension of the state of emergency. In mid-March, all non-essential shops and services were closed and masks in public places and penalties were prescribed. Violations of isolation measures were also checked. The Government restricted movement throughout the country by Resolution No. 172/2020 from April 8 to 13. Since June, the measures have been eased. By Government Resolution No. 36 6/2020 on the end of emergency it is regulated that the state of emergency ended on June 13, 2020.<sup>38</sup> In addition to the Government, the management of the COVID-19 pandemic was the responsibility of the Ministry of Health of the Slovakia, which published a series of guidelines on March 20, 2020. The Internal Crisis Management Group, which was established within the Ministry of Health also had a significant role in the pandemic. The group was chaired by the Minister of the Interior, who cooperates closely with the Chief Public Health Officer in the adoption of appropriate measures. The Minister of the Interior is considered to be leading the action regarding the COVID-19 pandemic by working closely with the Prime Minister and other ministers. The basic legislative acts adopted or amended since March 2020 are: the Law on Certain Emergency Measures in Relation to the Spread of Dangerous Contagious Human Disease COVID-19 and in the Judiciary, the Law on Social Insurance and the Law on Education (Education Act).<sup>39</sup> On October 1, 2020, a state of emergency was declared again and had been extended three times.<sup>40</sup>

<sup>37</sup> Alexandre, *op.cit.*, note 24, p. 10.

<sup>38</sup> *Ibid.*, p. 11.

<sup>39</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org], [https://www.covid19healthsystem.org/countries/slovakia/livinghit.aspx?Section=5.1%20Governance&Type=Section], Accessed 27 March 2021.

<sup>40</sup> Migration Information Centre, [https://www.mic.iom.sk/en/news/637-covid-19-measures.html], Accessed 30 March 2021.

### 3.2.8. *Ireland*

The Irish Constitution provides for a state of emergency for cases of war and armed conflict, so the state of emergency was not declared in response to the COVID-19 pandemic. Within its jurisdiction, the Irish Parliament has enacted a series of laws to protect public health and the economy. In mid-March 2020, the Health (Preservation and protection and other emergency measures in the public interest) Act 2020 (Health Act 2020) was adopted (Act 2020 is updated 1947 Health Act) and the Emergency Measures in the Public Interest (COVID-19) Act 2020 (Emergency Act 2020) as well. Measures to implement these laws were enacted by the caretaker government until the new Government took office on June 27, 2020, with the Minister of Health being empowered to enact acts to prevent, limit and slow the spread of the virus. In addition, according to the provisions of this Act, in March, official instructions were issued regarding the social life, which became binding in April, and related to travel bans, the introduction of curfews, the closure of schools, universities, institutions and other objects. Under the provisions of the Emergency Act 2020, a number of Government measures have been enacted to address the economic consequences caused by the pandemic.<sup>41</sup> Both of these laws were passed for a certain period of time with the possibility to extend them depending on the consequences of the pandemic. In managing the pandemic the most important advisory government body was the National Public Health Emergency Team (NPHET), which was established in January 2020, by the Department of Health, a Special Department of the Government, chaired by the Chief Medical Officer, senior officers from the Department of Health, medical experts and scientists from relevant disciplines.<sup>42</sup> Since September 2020, NPHET was no longer directly accountable to the Government but to the authorized group that reported to the Government Committee for the COVID-19 pandemic, which accordingly shaped social and economic measures in response to the pandemic. In addition, it should be noted that the Parliament, in order to increase the control and responsibility of the enactment of the Act by the Government, founded a special temporary committee, the COVID-19 Committee, in May 2020, with 19 members, representatives of all the parliamentary parties and groups.

### 3.2.9. *Denmark*

The Danish Constitution (Grundloven) does not contain specific provisions on the state of emergency so pandemic management takes place based on the earlier adopted

<sup>41</sup> Alexandre, *op.cit.*, note 24, p. 7.

<sup>42</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org], [https://www.covid19healthsystem.org/countries/ireland/livinghit.aspx?Section=5.1%20Governance&Type=Section], Accessed 25 March 2021.

Act on Measures against Infectious and Other Communicable Diseases (Epidemic Act). In order to deal with the consequences of COVID-19 pandemic as effectively as possible, the Government has proposed a series of amendments to the said Act, emphasizing the transfer of pandemic management powers to the Government and the Minister of Health. In March 2020, Minister of Health proposed amendments to this Act, that came into force in the same month, and are related to: the power of the Minister to order isolation of persons suspected of being infected, to limit gatherings and transportation to prompt access to medical service and other.<sup>43</sup> However, as early as March 17, 2020, the Prime Minister announced further restrictions that included a ban on the gathering of more than 10 people. According to the needs, since March 1, 2021, the new Epidemics Act has been in force. In addition to this Act, The General Health Law, regulated that executive bodies may require private hospitals to make their capacities available in the emergency situations.<sup>44</sup> The management of the epidemic was the responsibility of the Government and the Minister of Health, but it is important to point out that the Government interventions are previously defined by the National Security Council consisting of: Prime Minister, few Ministers, interim secretaries, Danish Health Authority, Danish Medicines Agency and the director of the Statens Serum Institute. Although the Parliament has passed a number of laws in urgent procedure in order to respond quickly to the consequences of the pandemic, the Government, as the executive body, adopted a number of measures in accordance with its delegated powers. In order to supervise such measures, the Parliament has authorized a special body, the Committee on the Rules of Procedure, to evaluate the measures and decisions adopted.<sup>45</sup>

### 3.2.10. Finland

According to Art. 23. of the Finnish Constitution, temporary exceptions to respect the fundamental rights of citizens are possible in cases of armed attacks on Finland or in other emergencies defined by a special act. The constitutional framework for the state of emergency consists of the State of Defence Act and the Emergency Power Act, where the latter defines various emergency situations in which the Government is authorized to adopt regulations to be in force for 3 or 6 months, and the Parliament will then decide whether the regulations will be

<sup>43</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org], [https://www.covid19healthsystem.org/countries/denmark/living-hit.aspx?Section=5.1%20Governance&Type=Section], Accessed 23 March 2021.

<sup>44</sup> *Ibid.*

<sup>45</sup> Bentzen, N. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States III*, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS\_BRI(2020)651972\_EN.pdf], Accessed 23 March 2021, p. 4.



adopted or repealed.<sup>46</sup> It is necessary for the Government, in coordination with the President of the Republic, to declare a state of emergency in order for the provisions of the Emergency Power Act to be enacted. This situation was declared on March 16, 2020. In accordance with the mentioned act and the Communicable Diseases Act, a number of measures were adopted for the functioning of the society and economy in dealing with the pandemic. The government issued a number of decrees, decisions and recommendations related to: restriction of movement, closure of restaurants and cafés (except for deliveries), keeping distance, border control, ban on public gatherings or self-isolation for those over 70 years of age.<sup>47</sup> In May and June 2020, measures were gradually eased. Management of pandemic effects in Finland is a planned process based on a previous influenza pandemic plan. Based on mentioned plan management of the pandemic is set according to the Government model for Government Civilian Crisis Management.<sup>48</sup> At the municipal level, agencies and district hospital physicians are responsible for the prevention of communicable diseases and play a key role during a pandemic. The Regional State Administrative Agencies coordinate and supervise the planning and implementation of regulations and measures at the regional level. The Ministry of Social Affairs and Health is responsible for ensuring that stated powers derive from the Communicable Diseases Act in the national plan, guidelines and communicable diseases supervision. The same Ministry is responsible for coordinating these issues with other ministries and with other international bodies and organizations as well as with the European Commission. An important role is entrusted to the Finnish Institute for Health and Welfare (THL), which is the main expert agency for advising the Ministry and the Government on the health issues. One of the first measures of the Government due to the COVID-19 pandemic was the establishment of a special body whose function is to plan, manage and coordinate measures in the field of health care and social welfare. This, Corona virus Coordination Group, consisted of: Permanent Secretaries, persons from the few Ministries' (Economic Affairs and Employment, Social Affairs and Health, Interior, Finance, Foreign Affairs, Transport and Communications) and the appointees from the Prime Minister's Office and the THL. Later, representatives from all other ministries were included in this group. The end of the declared state of emergency followed on June 16, 2020, but the Government continued to coordinate crisis and

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<sup>46</sup> *Ibid*, p. 5.

<sup>47</sup> *Ibid*.

<sup>48</sup> European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [www.covid19healthsystem.org], [https://www.covid19healthsystem.org/countries/finland/livinghit.aspx?Section=5.1%20Governance&Type=Section], Accessed 24 March 2021.

in September 2020 authorized the Ministry of Social Affairs and Health to adjust the action plan regarding the management of the COVID-19 pandemic.<sup>49</sup>

### 3.3. Level of decentralization in health system according to OECD

Ten countries from this analysis could be described as federal or unitary. In federal countries, constitutionally protected regional governments have large competences. In unitary countries, regions do not have a constitutional power which enables greater possibilities for the central government's intervention.<sup>50</sup> OECD recognizes three types of decentralization: fiscal, administrative and political decentralization and three levels of government: central, regional and local. In the analysis on level of decentralization in health care system, results from the 2018. Questionnaire on responsibilities and performance in health care systems were used.<sup>51</sup>

**Table 1.** Studied EU Countries by mortality, government type and level of health system decentralization

EU Country	Mortality	Federal/ Unitary government type	Central decision-making in the health sector (%)
Belgium	high	F	40-50
Slovenia		U	50-60
Czechia		U	40-50
Hungary	average	U	no data
Croatia		U	no data
Austria		F	< 40
Slovakia		U	no data
Ireland	low	U	50-60
Denmark		U	< 40
Finland		U	< 40

Data source: Beazley, I., et al., Decentralization and performance measurement systems in health care, OECD

Only two countries have Federal government type, Belgium and Austria. Central decision-making was used as indicator of health care system decentralization (less proportion means more decentralization) (Table 1). According to OECD, Austria, Denmark and Finland had mostly decentralized decision-making in the health sector, and lower mortality. On the other hand, Ireland and Slovenia had

<sup>49</sup> *Ibid.*

<sup>50</sup> Beazley, I., et al., *Decentralisation and performance measurement systems in health care*, OECD Working Papers on Fiscal Federalism, No. 28, OECD Publishing, Paris, [<https://www.oecd-ilibrary.org/deliver/6f34dc12-en.pdf?itemId=%2Fcontent%2Fpaper%2F6f34dc12-en&mimeType=pdf>], Accessed 20 March 2021.

<sup>51</sup> *Ibid.*

more centralized decision-making processes in the health sector; the former had lower and the latter higher mortality rate on January 15.<sup>52</sup>

### **3.4. Analysis of government Stringency Index, timeline of measures introduction and mortality trends in ten European countries**

Death rate is a solid enough indicator to be used in government pandemic response study. It is not ideal because of methodological problems. As the Global Change Data Lab in COVID-19 data explain: number of actual deaths is likely to be higher due to limited testing and attributed causes of death and a delay in reporting new deaths.<sup>53</sup> In spring of 2020 all observed states had similar approach to pandemic control and introduced strict lockdowns. As time passed, COVID-19 was studied and governments started to differ according to the manner of pandemic control.<sup>54</sup>

Depending on mortality as the most reliable indicator of efficient pandemic control, the studied countries are grouped in three mortality ranks: ones with high, average and low mortality on January 15, 2021. At that time, in most of the studied countries, the second pandemic wave ended.<sup>55</sup>

As shown in Table 2, countries differ in number of tests provided, number of cases and mortality rate per 1 million inhabitants. Denmark had three times more tests than any other studied country. In number of cases regarding number of deaths, mostly countries with more cases had more registered deaths. Exceptions were the Czechia and Croatia with more cases and lower death rate than comparable countries. Belgium and Hungary had less cases and higher death rate than comparable countries.

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<sup>52</sup> *Ibid.*

<sup>53</sup> Roser *et al.*, *op.cit.*, note 4.

<sup>54</sup> Hale *et.al.*, *op. cit.*, note 6.

<sup>55</sup> Worldometers.info, *op.cit.*, note 5.

**Table 2.** Studied EU Countries by mortality, number of tests, cases and mortality /1 million population on January 15, 2021

Country	Mortality	No. of tests/ 1 million population	No. of cases / 1 million population	No. of deaths / 1 million population
Belgium	high	644,247	57,923	1,747
Slovenia		356,085	70,683	1,501
Czechia		501,761	81,588	1,309
Hungary	average	302,486	36,192	1,159
Croatia		270,778	54,702	1,112
Austria		443,15	43,257	773
Slovakia		291,57	40,415	616
Ireland	low	548,039	32,825	501
Denmark		2,019,839	32,279	296
Finland		473,537	7,197	111

Data source: Worldometers.info, [<https://www.worldometers.info/coronavirus/>], Accessed date 15 January 2021

The countries are expected to track the spread of the virus and to implement crucial measures to suppress pandemic. Number of new cases and change in trends is one of few criteria that can be helpful with setting the correct timeline and tracking the hospital beds and ventilators in use. IHME set up criteria to help decision-makers to prevent hospitals being overwhelmed with patients in need.<sup>56</sup>

As shown in Table 3, all countries at the beginning of pandemic implemented strict measures with high estimated Stringency Index (SI), from 64.6 in Finland to 96.3 in Croatia. Measures were strengthened in a period between March 5 to 30, but seven out of ten countries already had strictest measures on March 23. Most of the countries raised SI from values of around 20 to 70 or higher. Half of the countries raised SI to the maximum values in about one week of March, and half of them in a two weeks period. In most countries, when strict measures are set, daily incidence rate reaches its maximum in two to three weeks and in one month the same happens with mortality trends.

Only Belgium and Ireland reached IHME criteria in the first pandemic wave (March 2020), but they did not differ significantly from other countries that avoided high mortality in the first pandemic wave according to defined timeline and criteria. Both implemented high SI at least 10 days before IHME criteria was met, but they had maximum daily mortality over 40/1 million inhabitants.<sup>57</sup>

<sup>56</sup> Institute for Health Metrics and Evaluation (IHME), *op.cit.*, note 3.

<sup>57</sup> Roser *et al.*, *op.cit.*, note 4.

Belgium, in the first wave, reached IHME criteria on March 31 (93 deaths/day). Measures were tightened in just one week from March 13 to 20; SI went from 24 to 82 eleven days before IHME criteria was reached. In addition, it was four weeks before maximum incidence rate and three weeks before maximum mortality rate was reached.

In Ireland, during the first wave, IHME criteria was reached (44 deaths/day) on April 16. Measures were tightened in two weeks from March 10 to 29, SI went from 11 to 85, 18 days before IHME criteria was reached. In addition, it was two weeks before maximum incidence rate and four weeks before maximum mortality rate was reached.

**Table 3.** Studied EU Countries in the first pandemic wave by IHME criteria, Stringency Index (SI), Strengthening measures timeline and mortality and incidence rate

Country	Mortality	IHME criteria met*	Maximum daily mortality/ 1 M pop	Strengthening measures timeline**				Date of max. daily incidence rate	Date of max. daily mortality rate
				SI 1	Date	SI 2	Date		
Belgium	high	31-Mar	42.8	24	13-Mar	82	20-Mar	15-Apr	10-Apr
Slovenia		null	2.9	25	10-Mar	90	30-Mar	27-Mar	7-Apr
Czechia		null	1.7	25	10-Mar	82	23-Mar	4-Apr	14-Apr
Hungary	average	null	2.4	19	10-Mar	77	28-Mar	10-Apr	24-Apr
Croatia		null	1.9	22	12-Mar	96	23-Mar	1-Apr	19-Apr
Austria		null	3.3	11	8-Mar	82	16-Mar	26-Mar	8-Apr
Slovakia		null	0.7	22	9-Mar	75	16-Mar	16-Apr	15-Apr
Ireland	low	16-Apr	44.6	11	10-Mar	85	29-Mar	10-Apr	24-Apr
Denmark		null	3.8	20	5-Mar	72	18-Mar	7-Apr	4-Apr
Finland		null	7.8	19	11-Mar	65	18-Mar	4-Apr	21-Apr

Data source: Worldometers.info, [<https://www.worldometers.info/coronavirus/>], Roser, M. *et al.*, Corona virus Pandemic (COVID-19), [<https://ourworldindata.org/coronavirus>], Accessed date 20 January 2021

\*Date when more than 8 deaths/day/ 1 million inhabitants were reached

\*\*Stringency Index lowest/highest values and measures introduction timeline

As shown in Table 4, in the second pandemic wave all countries except Ireland and Finland reached IHME criteria. Only Denmark actually avoided second autumn wave, but it followed at the end of the year 2020, IHME criteria was reached on

January 15. Countries varied significantly in the second wave. An IHME criterion was reached in all countries except Ireland, Finland and Denmark between October 24 in Slovenia and November 19 in Czechia. Countries started with higher SI baseline than in the first wave, from 39 in Croatia to 59 in Austria. Unlike in the first wave, maximum SI values were lower than in the first pandemic wave, from 51 in Croatia to 82 in Austria.

Unlike in the first wave, when all countries started strengthening measures before they reached IHME criteria, in the second wave Belgium and Croatia started after criteria was reached. In all countries with high or average mortality rate (except Czechia) strictest measures were introduced after IHME criteria was reached, in Belgium and Croatia one month later, and in Slovenia, Hungary, Austria and Slovakia few days to one week later.

It was expected that, like in the first wave when tightened measures are set, daily incidence rate would reach its maximum in two to three weeks and in one month the same would happen with mortality trends, but differences were recognized. In Belgium and Slovenia, maximum death rate was reached before maximum incidence rate.

**Table 4.** Studied EU Countries in the second pandemic wave by IHME criteria, Stringency Index (SI), Strengthening measures timeline and mortality and incidence rate

Country	Mortality	IHME criteria met*	Maximum daily mortality/ 1 M pop	Strengthening measures timeline**				Date of max. daily incidence rate	Date of max. daily mortality rate
				SI 1	Date	SI 2	Date		
Belgium	high	27-Oct	29.8	55	2-Nov	66	30-Nov	29-Nov	10-Nov
Slovenia		24-Oct	31.7	47	17-Oct	69	30-Oct	6-Jan	8-Dec
Czechia		19-Nov	27.5	48	21-Oct	73	26-Oct	4-Nov	10-Nov
Hungary	average	3-Nov	20.0	41	1-Nov	72	10-Nov	29-Nov	5-Dec
Croatia		6-Nov	22.4	39	27-Nov	51	14-Dec	10-Dec	16-Dec
Austria		14-Nov	24.2	59	17-Oct	82	17-Nov	13-Nov	17-Dec
Slovakia		12-Nov	12.3	54	21-Oct	73	15-Nov	31-Dec	4-Jan

Ireland	low	null	3.2	52	6-Oct	82	21-Oct	18-Oct	1-Dec
Denmark		15-Jan	10.4	52	3-Jan	70	9-Jan	18-Dec	15-Jan
Finland		null	4.0	41	22-Nov	52	7-Dec	10-Dec	28-Dec

Data source: Worldometers.info, [https://www.worldometers.info/coronavirus/], Roser, M. et al., Corona virus Pandemic (COVID-19), [https://ourworldindata.org/coronavirus], Accessed date 20 January 2021

\*Date when more than 8 deaths/day/ 1 million inhabitants were reached

\*\* Stringency Index lowest/highest values and measures introduction timeline

Table 5. summarizes the results of the conducted research related to the regulatory approach to the pandemic management and the obtained results related to mortality trends on January 15 2021.

**Table 5.** Studied EU Countries in the COVID-19 pandemic by legal regulatory response, level of health care decision-making decentralization and strengthening COVID- 19 control measures timeline according to IHME criteria

EU country	Mortality	No. of deaths /1 million population	States of emergency provided in Constitution	Statutory regimes effectively declared	Measures adopted using special legislative powers	Measures adopted under ordinary legislation	Central decision making in the health sector (%)	First pandemic wave		Second pandemic wave		
								IHME criteria met	Time-line respected	IHME criteria met	Time-line respected	Delay
Belgium	high	1,747	-	No	Yes	No	40-50	31-Mar	Yes	27-Oct	No	5 weeks
Slovenia		1,501	No	Yes	No	Yes	50-60	null	Yes	24-Oct	No	< 1 week
Czechia		1,309	Yes	No	No	No	40-50	null	Yes	19-Nov	Yes	-
Hungary	average	1,159	Yes	Yes	No	No	no data	null	Yes	3-Nov	No	1 week
Croatia		1,112	No	Yes	No	Yes	no data	null	Yes	6-Nov	No	5,5 weeks
Austria*		773	-	No	No	Yes	< 40	null	Yes	14-Nov	No	< 1 week
Slovakia		616	Yes	Yes	No	No	no data	null	Yes	12-Nov	No	< 1 week

Ireland		501	-	No	No	Yes	50-60	16-Apr	Yes	null	Yes	-
Denmark	low	296	-	No	No	Yes	< 40	null	Yes	15-Jan	Yes	-
Finland		111	Yes	No	No	No	< 40	null	Yes	null	Yes	-

Source: Worldometers.info, [<https://www.worldometers.info/coronavirus/>]; Crego, M.D., Kotanidis, S., *States of emergency in response to the corona virus crisis, Normative Response and parliamentary oversight in EU Member States during the first wave of the pandemic*, European Parliamentary Research Service; Roser, M. et al., *Corona virus Pandemic (COVID-19)*, [<https://ourworldindata.org/coronavirus>], Accessed date 20 January 2021

\* The national constitution does not provide for a state of emergency or the state of emergency is not suitable for health emergency

#### 4. DISCUSSION

EU with its legal authority actively approached the pandemic by regulating areas in which the EU has jurisdiction, mostly in the economic field. The area in which the EU complements the actions of the Member States with its approach is, among others, health and health care. Treaties and regulations were the basis for the regulatory activities of the EU institutions in COVID-19 pandemic crisis.

As shown earlier in Table 5, some Member States have normatively resolved pandemic control measures through their pre-pandemic constitutions, others have regulated such situation through laws while some states have regulated and adapted legal framework during a pandemic. In the studied countries, legislative framework for crisis regulation was only partially associated with countries' achievements in pandemic mortality control. For example, states of emergency were declared in mid-March of 2020 to provide faster regulatory responses through government decrees in four studied countries (Czechia, Hungary, Slovakia and Finland) but only in Finland low mortality rates were maintained while in Czechia mortality rate was high.

Level of decentralization in health care system decision making was only partially proven important in managing pandemics. For instance, Denmark and Finland have a high level of decentralization and favourable mortality trends. Austria had partial success in pandemic management in the given decentralization level. Belgium and Czechia, with similar level of decentralization in health care setting as Austria, had high mortality trends (Table 5). In incidence, mortality and Stringency Index data analysis, it is observed that countries obtain different results with different methods and strengthening measures timeline. Angrist argues that COVID-19 restrictions work in the best manner if strict measures are imple-



mented earlier at once, than weaker ones gradually. This approach works better for COVID-19, but also for the economy and society as well.<sup>58</sup> All studied countries tried to control the pandemic in the second wave with less stringent and delayed measures which did not prove to be effective except in Finland (Table 5.).

Finland had the best results among the studied countries with the lowest mortality rate. It did not reach IHME criteria in the first or in the second pandemic wave. An analysis of the regulatory responses following the declaration of “states of emergency” in Finland shows that the decisions were based on a pre-designed plan for an influenza pandemic, but also on the previously established crisis management models well organized from the local to the national levels.

Although Denmark did not declare a state of emergency, the pre-existing regulatory framework for crisis and epidemic management enabled the timely adoption of the pandemic control measures. Denmark was the only studied country (besides Finland) that avoided the second pandemic wave in autumn. According to OECD, Denmark and Finland had highly decentralized decision-making in the health sector.

Ireland waited for too long with the introduction of stricter measures in the first pandemic wave. For 10 days in March 2020, the implemented measures were moderate. In Ireland in the first pandemic wave, national mortality figures were significantly impacted by high mortality among nursing home residents, which contributed to more than half of all COVID-19 mortality in May 2020.<sup>59</sup> Ireland has provided regulatory responses through legislation enacted in the regular procedure and made some adjustments in pandemic management in the second half of the year. For better coordination, as of September 2020, the Government’s National Public Health Emergency team was no longer directly accountable to the Government but to the COVID-19 task force. That helped for appropriate social and economic measures to take place faster and in a timely manner.

Czechia and Slovakia, as well as Slovenia and Croatia, shared the same legislative framework for responding to the crisis in the past. In the past few decades differences within the legal framework and response to the crisis occurred, which have led to the different approaches to the pandemic control and also different outcomes. Thus, Slovenia and Czechia on January 15 had significantly higher mortality rates than Croatia and Slovakia. All four states successfully controlled the pandemic in the first wave. In the second wave, all four countries tightened

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<sup>58</sup> *Angrist et al., op.cit.*, note 1.

<sup>59</sup> National Public Health Emergency Team, COVID 19, *Comparison of Mortality Rates between Ireland and other countries in EU and internationally*, [<https://www.gov.ie/en/press-release/e000c4-statement-from-the-national-public-health-emergency-team-monday-4-ma/>], Accessed 22 February 2021.

measures too late, which was reflected in the number of deaths. According to OECD Slovenia had more centralized decision-making processes in the health sector than Czechia, for Croatia and Slovakia data were missing (Table 5.).

Although Austria did not declare a state of emergency through law passed in the national parliament, it managed to keep an average mortality rate, among the studied countries. More serious consequences were prevented thanks to the measures taken timely within the governments of the federal states, but also at the regional level given that Austria is also one of the states that according to the OECD had mostly decentralized decision-making in the health sector.

Average mortality rate in Hungary could be explained by its having declared a state of emergency and intensive regulatory activity, especially through government decrees and their application from the local to the national levels. Modification of Criminal Code of Hungary and the application of defence and police force measures in controlling compliance with epidemiological measures played the role also.

Belgium had high mortality rates during both the first and the second pandemic waves. Crisis management has been decentralized, which complicated decision-making and implementation of measures. Also a large number of management structures and bodies have been set up to control the effects of the pandemic. Nine regions, together with their ministers, made decisions and informed the public, which did not contribute to an effective approach, although the legal framework has been established in a timely manner as well as the definition of sanctions for violators. In addition, at the beginning of COVID-19 pandemic, Belgium had limited PCR testing capacity, only in laboratory in Leuven.<sup>60</sup>

In Slovenia and Belgium, during the second wave, maximum death rate was reached before maximum incidence rate. One of the possible explanations was insufficient testing capacity. As in the case of Ireland in the first wave, virus entering into nursing homes contributed to the high mortality rate. Belgium is the country that was among the first in the EU to reach the IHME criteria, and had to act fast in the period when there was no sufficient experience with COVID-19.

Emergency measures are always justified by the need to protect human rights and the democratic order, and emergencies are characterized as situations in which countries face a serious threat and are forced to take actions contrary to the principles of their own legal order, often in interference with the European Convention on Human Rights. As Haug recognised in his research, it is important not to look only for measures in force but also for public compliance to those measures.<sup>61</sup>

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<sup>60</sup> European Observatory on Health Systems and Policies, *op. cit.*, note 23.

<sup>61</sup> Haug, N., *et al.*, *Ranking the effectiveness of worldwide COVID-19 government interventions*, *Nat Hum Behav*, No. 4, 2020, pp. 1303-1312

## 5. CONCLUSION

EU member states in line with their specific regulatory mechanisms in crisis successfully set up and implemented different measures that have contributed to lower mortality rate per million inhabitants. Governments' responses to COVID-19 showed significant heterogeneity. Given the obtained results of the analysis, hypothesis can be considered only partially proven, considering that, only some of the selected countries have successfully controlled COVID-19 mortality.

Countries like Finland or Denmark with their long tradition of Public Health, decentralized health care decision-making, citizens that trust authorities and high level of preparedness in crisis management had lower mortality in COVID-19 pandemic. In the future EU could take even more active role within its legal powers and propose scientific based approach in crisis management to help countries implement less popular measures to preserve lives of EU citizens.

New viral strains in Europe made it impossible to control the pandemic with less stringent measures in second pandemic wave that were sufficient in the first wave. Final conclusion about successes of failures of different countries should wait until COVID-19 pandemic ends. The next waves of the pandemic should be observed in the light of the success of population vaccination, legislation, political, economic and social framework.

## REFERENCES

### BOOKS AND ARTICLES

1. Bačić, A., *Ustavno pravo Republike Hrvatske, praktikum*, Pravni fakultet Sveučilišta u Splitu, Split, 2006
2. Čapeta, T., *Europska unija po Lisabonskom ugovoru*, Hrvatska komparativna i javna uprava, Vol. 10, No. 1, 2010., pp. 35-46
3. Čapeta, T.; Rodin, S., *Osnove prava Europske unije*, Narodne novine, Zagreb, 2011
4. Craig, P.; de Búrca, G., *EU Law Text, Cases and Materials, fourth edition*, Oxford University Press, Oxford, New York, 2008
5. Craig, P., *EU Administrative Law*, Oxford University Press, Oxford, New York, Second edition 2012
6. Haug, N., et al., *Ranking the effectiveness of worldwide COVID-19 government interventions*, Nat Hum Behav, No. 4, 2020, pp. 1303-1312
7. Ljubanović, B.; Matković, B., *Lisabonski ugovor – o njegovoj strukturi i aspektima utjecaja na upravno pravo i javnu upravu*, Pravni vjesnik, Vol. 31, No. 2, 2015., pp. 181-190
8. Popelier, P., *COVID-19 legislation in Belgium at the crossroads of a political and a health crisis*, The Theory and Practice of Legislation, Vol. 8, No. 1-2, 2020, pp. 131-153

9. Smerdel, B.; Sokol, S., *Ustavno pravo*, Narodne novine, četvrto neizmjenjeno izdanje Zagreb, 2009
10. Scheppele, K.L., *Law in a Time of Emergency: States of Exception and the Temptations of 9/11*, Journal of Constitutional Law, Vol. 6, No. 5, 2004, pp. 1001-1083

## **ECHR**

1. European Convention on the Protection of Human Rights and Fundamental Freedoms, Official Gazette – international treaties, 18/97, 6/99, 14/02, 13/03, 9/05, 1/06, 2/10

## **EU LAW**

1. Charter of Fundamental Rights of the European Union, Official Journal of the European Union [2012] C326/391
2. Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, Official Journal of the European Union [2012] C 326/47)

## **LIST OF NATIONAL REGULATIONS**

1. Ustav Republike Hrvatske, Official Gazette 85/10 – consolidated version, 05/14
2. Zakon o sustavu civilne zaštite, Official Gazette, 82/15, 118/18, 31/20, 20/21
3. Zakon o zaštiti pučanstva od zaraznih bolesti, Official Gazette, 79/07, 113/08, 43/09, 130/17, 114/18, 47/20, 134/20

## **WEBSITES REFERENCES**

1. Act CXXVIII of 2011 on disaster management and amending certain related Acts, [<https://net.jogtar.hu/jogszabaly?docid=a1100128.tv>], Accessed 19 March 2021
2. Act XII of 2020 on the containment of coronavirus [<http://abouthungary.hu/media/DocumentsModell-file/1585661547-act-xii-of-2020-on-the-containment-of-coronavirus.pdf>], Accessed 20 March 2021
3. Alexandre, Z. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States IV*, [[https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652002/EPRS\\_BRI\(2020\)652002\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652002/EPRS_BRI(2020)652002_EN.pdf)], Accessed 25 March 2021
4. Atanassov, N. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States II*, [[https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651914/EPRS\\_BRI\(2020\)651914\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651914/EPRS_BRI(2020)651914_EN.pdf)], Accessed 21 March 2021
5. Angrist, S. *et al.*, *Oxford COVID-19 Government Response Tracker in collaboration with the International Public Policy Observatory*, What we learned from tracking every COVID policy in the world, [<https://theconversation.com/what-we-learned-from-tracking-every-covid-policy-in-the-world-157721>], Accessed 28 March 2021
6. Bačić Selanec, N., *Croatia's Response to COVID-19: On Legal Form and Constitutional Safeguards in Times of Pandemic*, [<https://verfassungsblog.de/croatias-response-to-covid-19-on-legal-form-and-constitutional-safeguards-in-times-of-pandemic/>], Accessed 27 March 2021

7. Beazley, I., *et al.*, *Decentralisation and performance measurement systems in health care*, OECD Working Papers on Fiscal Federalism, No. 28, OECD Publishing, Paris, [[https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/DELSA/GOV\(2019\)3&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/DELSA/GOV(2019)3&docLanguage=En)], Accessed 20 March 2021
8. Bentzen, N. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States III*, [[https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS\\_BRI\(2020\)651972\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS_BRI(2020)651972_EN.pdf)], Accessed 23 March 2021
9. Binder, K. *et al.*, *States of emergency in response to coronavirus crisis: Situation in certain Member States*, [[https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649408/EPRS\\_BRI\(2020\)649408\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649408/EPRS_BRI(2020)649408_EN.pdf)], Accessed 18 March 2021
10. Crego, M. D.; Kotanidis, S., *States of emergency in response to the coronavirus crisis, Normative Response and parliamentary oversight in EU Member States during the first wave of the pandemic*, European Parliamentary Research Service, [[https://www.europarl.europa.eu/RegData/etudes/STUD/2020/659385/EPRS\\_STU\(2020\)659385\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/659385/EPRS_STU(2020)659385_EN.pdf)], Accessed 15 March 2021
11. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)], [<https://www.covid19healthsystem.org/countries/austria/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 20 March 2021
12. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
13. [<https://www.covid19healthsystem.org/countries/belgium/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 18 March 2021
14. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
15. [<https://www.covid19healthsystem.org/countries/czechrepublic/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 25 March 2021
16. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
17. [<https://www.covid19healthsystem.org/countries/croatia/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 30 March 2021
18. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
19. [<https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 23 March 2021
20. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
21. [<https://www.covid19healthsystem.org/countries/finland/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 24 March 2020
22. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],

23. [<https://www.covid19healthsystem.org/countries/hungary/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 20 March 2021
24. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
25. [<https://www.covid19healthsystem.org/countries/ireland/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 25 March 2021
26. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
27. [<https://www.covid19healthsystem.org/countries/slovakia/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 27 March 2021
28. European Observatory on Health Systems and Policies, *COVID-19 Health System Response Monitor*, [[www.covid19healthsystem.org](http://www.covid19healthsystem.org)],
29. [<https://www.covid19healthsystem.org/countries/slovenia/livinghit.aspx?Section=5.1%20Governance&Type=Section>], Accessed 22 March 2020]
30. Hale, T. *et al.*, *The Oxford COVID-19 Government Response Tracker (OxCGRT)*, [www.bsg.ox.ac.uk](http://www.bsg.ox.ac.uk), [<https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker>], Accessed 10 January 2021
31. Institute for Health Metrics and Evaluation (IHME), *COVID-19 resources*, [www.covid-19healthdata.org](http://www.covid-19healthdata.org). [<https://covid19.healthdata.org/global?view=total-deaths&tab=trend>], Accessed on 22 January 2021
32. Migration Information Centre [<https://www.mic.iom.sk/en/news/637-covid-19-measures.html>], Accessed 30 March 2021
33. National Public Health Emergency Team, COVID 19, Comparison of Mortality Rates between Ireland and other countries in EU and internationally, [<https://www.gov.ie/en/press-release/e000c4-statement-from-the-national-public-health-emergency-team-monday-4-ma/>], Accessed 22 February 2021
34. Roser, M. *et al.*, *Coronavirus Pandemic (COVID-19)*, [www.ourworldindata.org](http://www.ourworldindata.org), [<https://ourworldindata.org/coronavirus>], Accessed 20 January 2021
35. Vlada Republike Hrvatske, [<https://vlada.gov.hr/vijesti/od-ponoci-na-snazi-odluke-stozera-civilne-zastite-rh-u-svrhu-sprjecavanja-sirenja-zaraze-novim-koronavirusom/29026>], Accessed 27 March 2021
36. Vlada Republike Hrvatske, [<https://vlada.gov.hr/vijesti/mjere-za-pokretanje-gospodarskih-i-drugih-djelatnosti-odvijat-ce-se-u-tri-faze/29298>], Accessed 30 March 2021
37. Von Ondarza, N., *The European Parliament's Involvement in the EU Response to the Corona Pandemic*, [<https://www.swp-berlin.org/en/publication/the-european-parliaments-involvement-in-the-eu-response-to-the-corona-pandemic/>], Accessed 15 Februar 2021
38. Worldometers.info, *Covid-19 Coronavirus pandemic*, [[www.worldometers.info](http://www.worldometers.info)], [<https://www.worldometers.info/coronavirus>], Accessed 15 January 2021