



REPUBLIC OF SERBIA  
GOVERNMENT



Republic of Serbia  
MINISTRY OF HEALTH

UNIVERSITY CLINICAL CENTRE OF SERBIA



# Abstract Book

The First World Conference  
Fighting COVID-19 Pandemic  
Health Challenges

**COLLECTIVE KNOWLEDGE.  
GLOBAL HEALTH.**

26-28 March 2022, Belgrade, Serbia





REPUBLIC OF SERBIA  
GOVERNMENT



Republic of Serbia  
MINISTRY OF HEALTH



# Abstract Book

The First World Conference  
Fighting COVID-19 Pandemic - Health Challenges  
**COLLECTIVE KNOWLEDGE. GLOBAL HEALTH.**

---

26-28 MARCH 2022, BELGRADE, SERBIA

---



The First World Conference  
Fighting COVID-19 Pandemic - Health Challenges  
**COLLECTIVE KNOWLEDGE. GLOBAL HEALTH.**  
26-28 March 2022, Belgrade, Serbia

# Abstract Book

**Publisher:**

MEDAPP Association, Belgrade, 2022

**Editor-in-Chief**

Professor Tatjana Adzic Vukicevic, MD, PhD

**Associate Editors**

Maja Stosic, MD, PhD, Research Associate  
Assistant Professor Jelena Velickovic, MD, PhD  
Assistant Professor Dejan Velickovic, MD, PhD  
Aleksandra Milosevic, MD, PhD  
Aleksandra Spurnic, MD, PhD  
Professor Aleksandra Kezic, MD, PhD

**Print**

Grafolik, Belgrade

**Print run**










1300

ISBN: 978-86-80916-01-9

Belgrade, 2022



# Table of contents

Organizing Committee	5
Scientific Committee	6
Honorary Committee	8
Members and deputy members of the Executive Committee	8
Welcome to Serbia. Welcome to Belgrade.	9
Introductory	10
<b>1. CHALLENGES THE HEALTH SYSTEMS ARE FACED WITH DURING THE PANDEMIC</b>	<b>12</b>
 Invited Speakers	13
 Oral Presentations	21
 E Posters	26
<b>2. COVID-19 DIAGNOSIS, IMMUNIZATION AND PREVENTION</b>	<b>39</b>
 Invited Speakers	40
 Oral Presentations	54
 E Posters	62
<b>3. STATE-OF THE-ART APPROACH TO COVID-19 TREATMENT WITH EMPHASIS ON MULTIDISCIPLINARY TEAMWORK</b>	<b>117</b>
 Invited Speakers	118
 Oral Presentations	164
 E Posters	241



The First World Conference  
Fighting COVID-19 Pandemic - Health Challenges

**COLLECTIVE KNOWLEDGE.  
GLOBAL HEALTH.**

26-28 March 2022, Belgrade, Serbia

**Organizing  
Committee**

**Scientific  
Committee**

**Honorary  
Committee**



# ORGANIZING COMMITTEE

## President:

Zlatibor Loncar, MD, PhD, Minister of Health, President;

## Members and alternate members:

Professor Tatjana Adzic Vukicevic, MD, PhD, Director of COVID Hospital Batajnica, Member;

Professor Lukas Rasulic, MD, PhD, Member;

Nikola Jovanović, Deputy Head of the Prime Minister's Office, Member;

Stefan Badza, Representative of the Prime Minister's Office, Deputy Member;

Petar Janjic, Deputy Secretary General of the Government, Member;

Danijel Nikolic, Assistant Secretary General of the Government, Deputy Member;

Danijela Urosevic, MD, Assistant Minister of Health, Member;

Ljubica Pakovic, representative of the Ministry of Health, Deputy member;

Jelisaveta Colanovic, Head of the Department for International Legal Affairs, Ministry of Foreign Affairs, Member;

Lidija Lakcevic Zivlakovic, Advisor to the Minister of Foreign Affairs, Deputy Member;

Milan Radivojevic, Assistant Head of the Sector for Human Resources, Ministry of the Interior, Member;

Natasa Jovanovic, Head of the Department for Employee Health and Safety at Work, Ministry of Interior, Deputy Member;

Tatjana Medjedovic, Sector for International Cooperation and European Integration, Ministry of Finance, Member;

Olivera Ruzic Poparic, Budget Sector, Ministry of Finance, Deputy Member;

Darko Glavas, Secretary for Defense, Emergency Situations, Communication and Coordination of Relations with Citizens, City of Belgrade, Member;

Marija Labovic, Acting Director General of the Tourist Organization of Serbia, Member;

Vesna Raca, Assistant Director General of the Tourist Organization of Serbia, Deputy Member

## SCIENTIFIC COMMITTEE\*

Professor Tatjana Adzic-Vukicevic, MD, PhD, Director of the COVID Hospital Batajnica, University Clinical Center of Serbia, Faculty of Medicine, University of Belgrade

Professor Nicolino Ambrosino, MD, PhD, Cardio-Respiratory Department, Rehabilitation and Weaning Center, Auxilium Vitae, Volterra, Italian Universities of Pisa, Pavia, Firenze, Trieste, Milano, Siena, Genoa

Professor Milika Asanin, MD, PhD, Director of the University Clinical Center of Serbia, Faculty of Medicine, University of Belgrade

Assistant Professor Ana Banko, MD, PhD, Institute of Microbiology and Immunology, Faculty of Medicine, University of Belgrade

Professor Giovanni Battista Migliori, MD, PhD, FRCP (London), FERS, FAPSR, Director, WHO Collaborating Centre for tuberculosis and Lung diseases, Maugeri Care and Research Institute, Tradate, Italy, Honorary Professor, Blizard Institute, Queen Mary University of London, United Kingdom Global Tuberculosis Network

Vlado Batnozić, MD, Director of the Institute for Health Protection of Railway Workers

Professor Demosthenes Bouros, MD, PhD, FERS, FCCP MEDICAL SCHOOL, National and Kapodistrian University of Athens, Athens Medical Center

Vladan Cvetanovic, MD, University Clinical Center Niš – Covid hospital

Professor Velibor Cabarkapa, MD, PhD, University Clinical Center Vojvodine – Covid hospital

Professor Lazar Davidovic, MD, PhD, Dean of the Faculty of Medicine, University of Belgrade

Siddhartha Datta, MD, MPH, Public Health Expert, Program Manager, Vaccine-preventable Diseases and Immunization, Division of Health Emergencies and Communicable Diseases WHO Regional Office for Europe, Denmark

Professor Vladimir Đukic, MD, PhD, Director of the Clinical Hospital Center „Dr Dragisa Misovic“, Faculty of Medicine, University of Belgrade

Professor Gregory Filice, MD, PhD, Supervisor, Occupational Health Covid 19 Section, Veterans Affairs, Medical Center, Minneapolis, Minnesota, USA

Professor Matijaz Flezer, MD, PhD, University Clinic of Respiratory and Allergic Diseases, Golnik, Slovenia

Radmilo Jankovic, MD, PhD, Deputy Director of the University Clinical Center Nis, Faculty of Medicine, University of Belgrade

Snezana Jovanovic, MD, MSc, Director of Medical Microbiology Laboratory, University Clinical Center of Serbia

Assistant Professor Verica Jovanovic, MD, PhD, Director of the Institute of Public Health of Serbia „Dr Milan Jovanović-Batut“



Assistant Professor Vladimir Krajinovic, MD, PhD, Infectious Disease Hospital Zagreb, Croatia

Professor Ivana Milosevic, MD, PhD, Deputy Director of the Clinic for Infectious and Tropical Diseases, University Clinical Center of Serbia, Faculty of Medicine, University of Belgrade

Sladana Mihajlovic, MD, PhD, Clinical Hospital Center „Dr Dragisa Misovic“

Professor Slobodan Milisavljevic, MD, PhD, Director of the University Clinical Center Kragujevac, Faculty of Medicine, University of Belgrade

Colonel Assistant Professor Rade Milic, MD, PhD, Faculty of Medicine, Military Medical Academy, University of Defense of Belgrade

Olivera Ostojic, MD, PhD, Clinical Hospital Center „Dr Dragisa Misovic“,

Professor Zoran Perišić, MD, PhD, Director of the University Clinical Center Niš, Faculty of Medicine, University of Belgrade

Professor Antonio Pesenti, MD, PhD, Director, Anesthesia and Critical Care Postgraduate School University of Milan, Italy

Professor Robert Pirker, MD, PhD, Department of Medicine, Medical University, Vienna, Austria

Professor Salvatore Rubino, MD, PhD, Department of Biomedical Sciences, Medical School, University of Sassari, Sardinia, Italy

Professor Ivana Stasevic Karlicic, MD, PhD, Director of the Special Psychiatric Hospital „Dr Laza Lazarevic“, Faculty of Medicine, University of Belgrade

Professor Goran Stevanovic, MD, PhD, Director of the Clinic for Infectious and Tropical Diseases, University Clinical Center of Serbia, Faculty of Medicine, University of Belgrade

Professor Dragoš Stojanovic, MD, PhD, Director of the Clinical Hospital Center Zemun, Faculty of Medicine, University of Belgrade

Professor Edita Stokic, MD, PhD, Director of the University Clinical Center of Vojvodina, Faculty of Medicine, University of Belgrade

Maja Stošić, MD, PhD, Research Associate, Institute of Public Health of Serbia „Dr Milan Jovanović-Batut“

Professor Petar Svorcan, MD, PhD, Director of the Clinical Hospital Center „Zvezdara“, Faculty of Medicine, University of Belgrade

Colonel Assistant Professor Ivo Udovicic, MD, PhD, Commander of the Karaburma Military Hospital, Medical Faculty of the Military Medical Academy, University of Defense of Belgrade

Marjana Vukicevic, MD, Director of the Special Hospital for Cerebrovascular Diseases „Sveti Sava“

Assistant Professor Marija Zdravkovic, MD, PhD, Director of the Clinical Hospital Center „Bezanijska kosa“, Faculty of Medicine, University of Belgrade

\* The Members of the Scientific Committee are presented in alphabetical order

## HONORARY COMMITTEE

Ana Brnabic, Prime Minister of the Republic of Serbia,

Zlatibor Loncar, MD, PhD, Minister of Health in the Government of the Republic of Serbia

Professor Lazar Davidovic, MD, PhD, Dean of the Faculty of Medicine, University of Belgrade

Professor Ratko Djukanovic, MD, PhD, Director, NHR Southampton Center for Biomedical Research United Kingdom

Professor Nebojsa Knezevic, MD, PhD, College of Medicine, University of Illinois, Chicago, USA

## MEMBERS AND DEPUTY MEMBERS OF THE EXECUTIVE COMMITTEE

Petar Janjić, General Secretariat of the Government of the Republic of Serbia

Danijel Nikolić, General Secretariat of the Government of the Republic of Serbia

Vesna Filipović Nikolić, Ministry of Foreign Affairs of the Republic of Serbia

Danijela Urošević, Ministry of Health of the Republic of Serbia

Dejan Stefanović, Ministry of Interior of the Republic of Serbia

Sanja Amanović, Ministry of Finance of the Republic of Serbia

Vukašin Jovanović, General Secretariat of the Government of the Republic of Serbia

Dejan Matić, Administration for Joint Services of the Republic Bodies

Darko Glavaš, representative of the City of Belgrade

Marija Labović, Tourism Organisation of Serbia

Miodrag Popović, Tourism Organisation of Belgrade

Aleksandar Mitrović, Tourism Organisation of Belgrade



The First World Conference  
Fighting COVID-19 Pandemic - Health Challenges

**COLLECTIVE KNOWLEDGE.  
GLOBAL HEALTH.**

# Welcome to Serbia Welcome to Belgrade





# 2

## COVID-19 diagnosis, immunization and prevention

Invited speakers

Oral presentations

E poster

Abstracts are ordered by arrival date

The First World Conference  
Fighting COVID-19 Pandemic - Health Challenges

**COLLECTIVE KNOWLEDGE.  
GLOBAL HEALTH.**

# Three Episodes of COVID-19 in a Nursing Home in Belgrade, Serbia

Vladan Čokić<sup>1,2</sup>, Zorana Popovska<sup>2</sup>, Olivera Lijeskić<sup>1</sup>,  
Ljiljana Šabić<sup>2</sup>, Olgica Djurković-Djaković<sup>1</sup>

**Background:** Over the two years of the COVID-19 pandemic, the elderly in nursing homes (NH) have been hit particularly hard.

**Methods:** We conducted a retrospective study of 3 episodes of COVID-19 in one NH in suburban Belgrade, Serbia, at the time of pre-alpha (Nov 2020), delta (Nov 2021) and omicron (Jan 2022) variants of SARS-CoV-2. All staff and 95% of residents were vaccinated in the early spring of 2021, with BBIBP-CorV, Gam-COVID-Vac and BNT162b2 vaccines. COVID-19 was diagnosed by positive PCR and/or antigen test. Specific IgG antibodies against SARS-CoV-2 S glycoprotein RBD were assessed by ELISA.

**Results:** The 3 episodes involved a total of 188 infections. The first involved 65/126 (51.9%) residents and 44/64 (68.7%) staff, the second 22/75 (29.3%) residents and 3/40 (7.5%) staff, and the third 36/110 (32.7%) residents and 18/56 (32.1%) staff. Clinical presentation ranged from asymptomatic to severe, with severe cases being referred to hospital ICUs. Mortality per episode was 19.8%, 2.7% and 0%, respectively, and involved residents only. After the first episode, all 36 examined residents and 43 of the 44 staff had specific antibodies. Interestingly, higher levels ( $20.45 \pm 13.27$ ) were detected in the residents than in the staff ( $9.74 \pm 9.52$ ) ( $p < 0.001$ ) despite a double difference in age ( $79.6 \pm 7.48$  vs.  $40.8 \pm 11.43$ ) ( $p < 0.001$ ). Episodes 2 and 3 involved 4 (1 resident, 3 staff) and 22 (13 residents, 9 staff) breakthrough infections.

**Conclusions:** Elderly individuals mounted a good immunological response to the vaccines, which prevented significant mortality in the next episodes, despite a significant number of omicron-induced breakthrough infections.

1 Institute for Medical Research, University of Belgrade, Belgrade, Serbia

2 Nursing Home Lug, Mladenovac, Serbia

CIP - Каталогизacija у публикацији  
- Народна библиотека Србије, Београд

616.98:578.834(048)(0.034.2)

WORLD Conference Fighting COVID-19 Pandemic - Health Challenges  
(1st ; 2022 ; Beograd)

Collective Knowledge, Global Health [Elektronski izvor] : abstract  
book / The First World Conference Fighting COVID-19 Pandemic -  
Health Challenges, 26-28 March 2022, Belgrade, Serbia ; [editor in chief  
Tatjana Adzic Vukicevic]. - Belgrade : MEDAPP Association, 2022  
(Beograd : Grafolik). - 1 USB fleš memorija ; 1 x 2 x 5 cm

Sistemski zahtevi: Nisu navedeni. - Nasl. sa nasl. strane dokumenta. -  
Tiraž 1.300.

ISBN 978-86-80916-01-9

a) Ковид 19 - Мултидисциплинарни приступ - Апстракти b)  
Ковид 19 -  
Пандемија - Апстракти

COBISS.SR-ID 61594377



**1**

Challenges facing the health systems during the pandemic

**2**

COVID-19 diagnostics, immunization and prevention

**3**

State-of the art approach to COVID-19 treatment with emphasis on multidisciplinary team work