

To

The Chairman of the Scientific Jury,

determined by Order No. R-109-382/26.09.2022

of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna. On your Protocol No. 1/06.10.2022

Attached I present: Review

for carrying out a procedure as announced in SG No. issue 59 of 26.07.2022 competition for the academic position Associate Professor in the specialty "Epidemiology", professional direction 7.1. Medicine, area of higher education 7. Health care and sports - one, for the needs of the Academic Sector "Epidemiology", Department of "Hygiene and Epidemiology", Faculty of "Public Health", at Varna Medical University.

Candidate: one: Ch. Assistant Dr. Miglena Asenova Kolarova - Dimitrova, MD, PhD Department of Hygiene and Epidemiology, Faculty of Public Health, Varna Medical University

## **REVIEW**

by Prof. Yordanka Dimitrova Stoilova, MD, PhD, external member

Scientific specialty: Epidemiology

Institution: MU Plovdiv, Faculty of "Public Health", Department of "Epidemiology and Disaster Medicine", according to protocol No. 1/06.10.2022 of a meeting of the Scientific Jury, determined by order No. R-109-382/26.09.2022 of the Rector of Medical University "Prof. Dr. Paraskev Stoyanov" - Varna,

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The review was prepared in accordance with the requirements of The Law on the Development of the Academic Staff in the Republic of Bulgaria((LDASRB) - Conditions and procedure for occupying the academic position of "associate professor".

The candidate has submitted a full volume of documents in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB) and the Regulations for the Development of the Academic Staff of the Varna University of Medical Sciences. The materials meet the qualitative and quantitative criteria for holding the academic position of " associate professor ".

### **I. Characteristics of the candidate's research and teaching activities.**

#### **1. Analysis of the candidate's career profile:**

Dr. Miglena Asenova Kolarova – Dimitrova, MD, PhD was born on 28.09.1972. city of Varna. The professional development includes a variety of educational and practical activities, which is in favor of the teaching activity: 1990 – 1996 graduated from the Medical University – Varna, specialty "Medicine"; Specializations in Internal Medicine 2003 and Epidemiology 2012. Between 1996 – 1997 is therapist in United Regional Hospital Complex (URHC) – Shumen,"; 1997 – 2003 is a resident doctor – specialist Military Medical Academy and UMHAT "St. Marina" Varna (1997 - 2003), resident doctor of the Medical Center "Dr

Emilova" 2003 – 2009; 2009 – 2015 senior inspector Regional inspection for protection and control of public health – VARNA(RIPCPH) – Varna with subsequent chief inspector RHI – Varna; 2020 – Hospital epidemiologist Specialized obstetrics and gynecology hospital for active treatment (SOGHAT) – Varna "Prof. Dr. Dimitar Stamatov"

Acquired specialty in Epidemiology in 2012 Dr. Kolarova impresses with her acquired specialty in Internal Medicine in 2003.

Academic development started in 2015 after a successful competition for an assistantship at the University of Varna. In 2018/2019, he is a full-time doctoral student at the "Hygiene and Epidemiology" department, majoring in "Epidemiology" with the thesis topic: "State and prospects of the epidemiological surveillance and control of HIV/AIDS in the Varna Region",. she obtained a Doctorate degree, and in 2020 and the academic position of "chief assistant".

Dr. Miglena Asenova Kolarova – Dimitrova has actively upgraded with additional qualifications:

1. Basic Computer skills – 2003
2. Qualification course Homeopathic therapy – 2008
3. After graduate studies courses at the National Center for Infectious and Parasitic Diseases 2009-2015
4. Hospital disinfection and sterilization – 2010
5. Epidemiological surveillance of the HAI – opportunities for updating and modernization" – 2014
6. Course for specialists conducting disinfection – 2014
7. Language courses in English for B2 level 2015-2020.
8. III Varna summer school "Introduction to emergency care"– 2019

She conducted training at the Doctoral School on "Working with SPSS", "The Successful Presentation", "Rules and Documentation of the Commission on Scientific Research Ethics", "Structure and Methodology of the Dissertation Work", "Academic Writing for Doctoral Students – Scientific Article and Abstract".

## **2. Submitted materials for the competition.**

Dr. Miglena Asenova Kolarova – Dimitrova participated in the competition for the academic position " Associate Professor " with 14 scientific papers, according to the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Rules for the Development of the Academic Staff of the Varna University of Medical Sciences. The distribution of the scientific output according to the Scientometric indicators presented for the occupation of the academic position "Associate Professor" area 7 "Health and Sports" are distributed:

A1. Dissertation work for the acquisition of an educational and scientific degree "doctor" on the topic "State and prospects of the epidemiological supervision and control of HIV/AIDS in the Varna region".

C3. Habilitation thesis - monograph: Kolarova – Dimitrova M. Rabies – The challenge. Varna: Steno; 2022. 163 pp. ISBN: 978-619-241-206-7

D7. Publications and reports published in scientific publications, referenced and indexed in worldwide databases with scientific information – 5;

D8. Publications and reports published in non – refereed peer – reviewed journals or published in edited collective volumes – 5;

Full-text publications in scientific journals and anthologies beyond the minimum scientometric requirements for holding the academic position "associate professor" – 2;  
Citations reflecting the scientific activity of the candidate – 6. (Citations reflecting the scientific activity of the candidate, reflected in the Academic reference for the publications, citations and scientific profiles of the candidate Department of Hygiene and Epidemiology, Faculty of Public Health, Medical University – Varna prepared in the Library of the University of Varna).

An important conclusion should be made that the submitted scientific publications subject to review include the period after the competition for the academic position of "chief assistant" (2020) and meet the qualitative and quantitative criteria for the academic position of "associate professor" in the specialty of epidemiology of infectious diseases according to the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of the University of Varna.

## **II. Evaluation of the scientific works of the candidate for the overall academic development.**

### **1. General characteristics of scientific production and publication activity**

Scientific activity of Miglena Asenova Kolarova – Dimitrova, MD is expressed in the dissemination and application of scientific and practical achievements among the scientific community by publishing her scientific works in authoritative and peer-reviewed scientific journals such as - Journal of IMAB, Eurasian Union of Scientists (ESU); HIV Infection and Immunosuppressive Disorders, Folia Medica, Notices of the Union of Scientists – Medicine and Ecology, Varna Medical Forum and in Collection of reports of National Forums.

Naturally, he is the first author of 2 scientific works - a dissertation and a monograph. In the remaining peer-reviewed articles, the candidate is the first author in 7 issues. He is second author in 2 articles. Distribution of the presented scientific works by language of publication is respectively: in Bulgarian - 4 issues, in English - 7 issues, in Russian - 1 issue.

Dr. Miglena Asenova Kolarova – Dimitrova exhibits scientific activity as an author and speaker at international and national scientific forums of scientific reports on significant epidemiological topics with applied importance. Foreign languages for communication: Russian and English.

### **2. Main thematic directions and contributions in scientific works:**

Thematically, they are divided into 4 scientific directions and areas, which are some of the most relevant:

1. HIV/AIDS: A\_1; B\_7 – 5; D\_8 – 1, D\_8 – 2
2. Zoonoses. Rabies: B\_3; D\_7 – 4; D\_8 – 5
3. Epidemiology of infectious diseases: A\_1; B\_3; D\_8 – 2; D\_8 – 4

#### 4. HAIs. Professional risk: A\_1; D\_7-1; D\_7-2; D\_7-3; D\_8-1

The scientific works of Dr. Miglena Asenova Kolarova – Dimitrova are in the most current areas of epidemiology. The topics represented in the scientific output are diverse and clearly significant for public health. I accept the report presented by Dr. Miglena Asenova Kolarova – Dimitrova on the contributions of scientific developments in the general areas – HIV/AIDS, zoonoses, epidemiology of viral hepatitis, outbreaks of salmonellosis, sexually transmitted diseases. I specifically highlight several presented studies on healthcare-associated infections with applied contributions on significant outstanding and debated issues. Undoubtedly, Dr. Miglena Asenova Kolarova – Dimitrova, with the acquired knowledge and skills, can be credited with a great personal contribution.

The presented monographic work is dedicated to one of the oldest known deadly diseases with 100% lethality in infectious pathology - Rabies, characterized by an incredible history in terms of epidemiology and clinical course and by the almost one century long period of development and improvement of vaccine prophylaxis. The disease is a threat to public health and a problem for humane and veterinary medicine. Despite efforts in theory and practice to control the disease, it exists in the wild and in domestic animals in some countries.

The monograph contains a historical overview of the disease with characteristics of epizootics through the presented current information about the disease with an emphasis on the features of zoonoses. The prevention, prophylaxis and control of the disease in Varna and Bulgaria with its accompanying regulatory framework have been tracked. Modern vaccine developments and specific pre- and post-exposure prophylaxis are described. A retrospective analysis of disease control in Bulgaria and Varna was made. In this regard, the author states that human rabies eradication involves a multipronged approach from disease awareness, vaccination of at-risk human populations, control of rabies in dogs, dog vaccination, provision of PEP to exposed individuals, enhanced laboratory surveillance, vaccination before exposure (PrEP) to at-risk groups, combined with educational outreach, improving community knowledge, are the cornerstones of rabies prevention and control to achieve the WHO goal of reducing the number of rabies cases to zero by 2030. The need for government support is also indicated.

The disease is in the stage of elimination in our country. The monograph is for the benefit of students and specialists in medicine and veterinary medicine, specialists with different medical orientations, public organizations, public health workers, etc.

#### **HIV/AIDS**

From 2003 to 2018 an epidemiological analysis of features of the system for epidemiological surveillance and control of HIV/AIDS infection in the Varna Region was made. Health professional's knowledge of HIV prevention and control was thoroughly assessed.

The study of stigma and discrimination against people living with HIV in their health care is commendable. The usefulness and reliability of targeted anonymous voluntary questionnaire surveys of groups at risk - medical staff, medical students, migrant population - foreign students, sailors, not covered by the current "National programs for the prevention and control

of HIV and sexually transmitted infections in the Republic of Bulgaria" have been proven. For the first time, an anonymous survey was conducted on the experience of people living with HIV on their access to health services with the aim of removing some of the many barriers (stigma and discrimination).

The freely chosen discipline - "Epidemiology of HIV/AIDS" was developed and approved for students of Bulgarian and English studies from the specialties "Medicine" and "Nursing", to improve the system of epidemiological supervision and control for prevention and risk management in the Varna region.

A study and assessment of the causes of occupational risk, knowledge and behavior of medical personnel and medical students was carried out and an epidemiologically preventive educational system was proposed.

Epidemiologically risky actions among persons from at-risk groups were studied and the algorithm was supplemented and the epidemiological surveillance system for the city of Varna (foreign students, seafarers) was upgraded. It is recommended that epidemiological studies be deepened to overcome the problem in people living with HIV, because stigma and discrimination against HIV/AIDS helps to increase the intensity of the epidemic process.

#### **ZOONOSES. RABIES.**

The epizootological effectiveness of the prevention of rabies among animals on the territory of the Republic of Bulgaria, in response to the implementation of the Programs for the supervision, control and eradication of the rabies disease, was evaluated. For the period 2009 - 2018, an own study of animal bites in the Varna region was conducted.

A study was conducted to assess the control of the stray dog population by analyzing the management and control of the population after 2016. in the city of Varna. A positive result of the analysis of the presented data is that for the studied period there is a permanent trend towards a decrease in the number of captured stray animals, and for 2021 and 2020 a statistically significant decrease in the number of captured animals is observed compared to the previous 2017, 2018 and 2019.

The conclusion is essential for solving the problem through the need to apply a uniform method in all settlements on the territory of our country, following the complex measures defined by the WHO: strict control over the trade and breeding of domestic dogs; castration and return to places of socialized dogs that are taken over for care by citizens, organizations and municipalities.

In addition to the detailed study of the causative agent of the disease, a huge number of small and large mammals have also been studied as sources of rabies infection. The exceptional immunoprophylaxis role, equally important for humans and animals, has been appreciated. I highly appreciate the traced evolution of the vaccine from Louis Pasteur's discoveries to the present day. In parallel, the features of immunization programs to combat rabies among wild and domestic animals, beginning in the 80s of the 20th century, are examined.

A special place is dedicated to the regulatory framework in the Republic of Bulgaria, regarding the supervision and control of the epizootic and epidemic process through a retrospective analysis of the control of the disease in Bulgaria and Varna; a comparative

analysis of the actually performed actions for the prevention of the disease and the effectiveness of the applied measures, according to the currently active programs.

## **EPIDEMIOLOGY OF INFECTIOUS DISEASES**

The peculiarities of the epidemiology of viral hepatitis in the Varna region for the period 2014 – 2019 have been studied in terms of intensive indicators – the incidence of VHA in the Varna region is lower than that of the country by two to four times, and the incidence of VHI is higher than that for the country, since autoimmune, toxic, metabolic, etc. are included here. non-infectious hepatitis. Also, extensive indicators – viral hepatitis has a high relative share in cities, with small fluctuations over the years, mainly men of mature age are affected, the number of cases in organized collectives is highest for schoolchildren, followed by children's facilities and for workers in a food establishment. Diversity of hepatitis types in individual years.

For the period 2008 – 2017, on the basis of official statistical data from the RHI, medical facilities and laboratories on the territory of the city of Varna and ECDC, a comparative analysis of the registered sexually transmitted infections in the Varna region was conducted, which points to overcoming the main barriers: lack of public awareness and long – standing widespread stigma regarding these infections, difficult contact tracing. A socially significant conclusion is drawn: the spread of infections in most countries continues to increase due to urbanization and migration of the population, the growth of tourism, early maturation and promiscuity, prostitution, without corresponding control.

For the period 2014 – 2018, the registered epidemic outbreaks of salmonellosis in the territory of the city of Varna and the region in organized children's groups were studied, based on materials from the Varna RHI, the Regional Directorate for Food Safety, etc. The activity to investigate the sources of infections and their contacts, to overcome gaps in registration, reporting, surveillance, control and to promptly limit the outbreaks created in organized collectives caused by enteric pathogens is commendable. It is recommended that an integrated system of cooperation and surveillance be put in place and that necessary steps be taken to prevent future outbreaks.

## **HAI. OCCUPATIONAL RISK**

The studied dynamics of registered nosocomial infections in medical facilities on the territory of the city of Varna and in the conditions of the Covid 19 pandemic impresses with its relevance. The data on the most frequently isolated nosocomial pathogenic microorganisms, as well as the most frequent localization of ISMO and their distribution by treatment facilities, were retrospectively analyzed.

Research confirms that for the prevention and control of ISMO, it is necessary to apply a complex approach: standard and additional safety and isolation measures; prevention of infections related to invasive procedures and devices, protection of personnel, provision of personal protective equipment and immunizations; hand hygiene; disinfection and sterilization; prevention of the main groups of infections; specific requirements for protecting personnel in certain infections, incl. HBV, HCV, HIV; hygienic requirements for the hospital environment.

The need for training medical staff on post-exposure prophylaxis with an emphasis on timely reporting of exposures for effective prevention of HAIs was assessed. Training medical professionals on the issue is essential and ongoing, because there is a risk of contracting HIV/AIDS and other blood-borne infections in their patient care and exposure to blood and body fluids. In this regard, a comparative analysis was conducted between different medical specialists on their readiness to serve patients with proven infection. Of interest are the results objectifying the lack of knowledge of the regulations on the part of the medical specialists, which goes against good practice and explains the low overall incidence of 1% of HAIs in hospitals in our country.

### **III. Evaluation of the teaching activity of the candidate**

Comprehensive qualitative evaluation of the teaching – methodical and teaching activity: Presents a report on classroom occupancy by years beginning in September 2015 or with a total of 7 years of teaching experience. Proof of the high quality of the educational process conducted by Dr. Kolarova is the diverse professional work experience, including internal medicine in the institutions presented in the autobiographical data. The academic load of the candidate by years from 2016/2017 – 2020/2021 varies between 350 – 400 hours, with a norm of 360 study hours with the scope of: Dr M. Kolarova, educates students in the specialities - medicine (Bulgarian and English language training), dentistry (Bulgarian and English language training), protection and control of public health, health management, nurse, midwife, health care management, medical laboratory technician, public health inspector and kinesis-therapy, in the structures of the MU, the branches in Sliven, Veliko Tarnovo and Shumen, and Medical College-Varna. She also teaches intern doctors within the state internship in Epidemiology.

The training of students in various specialties requires preliminary organization, theoretical and practical training, as well as knowledge of modern methodology in the educational process. Undoubtedly, the candidate participates in the constant updating of the curricula and in the preparation of tests, a stage in the conduct of the exams. The candidate is an active participant in the events organized by the University of Varna and the Department. He is a member of Bulgarian Medical Association, the Bulgarian Scientific Society for Epidemiology of Infectious and Non-Infectious Diseases, the Bulgarian Scientific Society for Public Health.

**IV. Criticisms** – I have no criticisms of the candidate.

**V. My personal impressions** of Dr. Kolarova are from the active appearances in the conferences of the Bulgarian Scientific Society of Epidemiology.

### **Conclusion:**

Dr. Miglena Asenova Kolarova – Dimitrova, MD, PhD applied with a sufficient number of significant scientific works published in our and international journals and with 1 monograph. Scientific works contain original scientific, scientific-applied and applied contributions. Knowledgeable and experienced specialist and teacher. Dr. Miglena Asenova Kolarova – Dimitrova, MD, PhD meets the mandatory and specific conditions and meets the

recommended scientometric criteria for the academic position "associate professor" according to the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of the MU – Varna.

**Review prepared by:**



2022

**Prof. Dr. Yordanka Dimitrova Stoilova, MD, PhD**