

REVIEW

by **Prof. Dr. Rumen Petrov Konstantinov, MD**
specialty "Epidemiology", Department of Hygiene and
Epidemiology, Public Health Faculty, Medical University
"Prof. Dr. Paraskev Stoyanov" - Varna

Member of the Scientific Jury under Order No. R-109-370/21.09.2022 of Prof. Dr.
Valentin Ignatov, MD. - Rector of Medical University "Prof. Dr. Paraskev Stoyanov" - Varna

Regarding: Announced competition for the academic position of *Professor* in the specialty "*Epidemiology*", professional direction **7.1. Medicine**, field 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 the Medical University of Varna, announced in SG no. 59/26.07.2022

In the current competition, documents for participation were submitted by one candidate - **Assoc.Prof. Dr. Tsonko Paunov Paunov, MD**

The candidate has submitted the requirements 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 MU-Varna documents meeting the necessary qualitative and quantitative criteria for occupying the academic position of "Professor".

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

1. Brief biographical data and career development.

Assoc.Prof.prof. Dr. Tsonko Paunov Paunov DM was born on 16.01.1966 in the city of Plovdiv. He graduated from the German language high school - city of Pazardzhik and medicine in 1993. at "Iv.P. Pavlov" Medical University - city of Plovdiv. From 1993-1998 works in a city polyclinic in the city of September - doctor in the Emergency and Urgent Medical Care unit. Since 1998, he has been selected after a competition as an assistant at the Department of Infectious Diseases, Epidemiology and Tropical Medicine, Sector of Epidemiology at the Medical University - Varna. He successively acquired the academic positions of senior and chief assistant, and in 2012 was habilitated as an associate professor in the specialty "Epidemiology". Since 2019 he is the Head of the Epidemiology of Infectious Diseases Sector in the Hygiene and Epidemiology Department of the Medical University of Varna, and since 2020 is elected Head of the Hygiene and Epidemiology Department of the Medical University of Varna.

Acquired a specialty in "Epidemiology of infectious diseases" in 2002. He obtained additional qualification (courses for vocational training, continuing education, etc.) on the following issues: "To learn how to teach" 2002, "e-Learning in the medical education" 2003, Course at the National Center for Infectious and Parasitic Diseases (NCIPD) "Problems of HIV/AIDS in Bulgaria" 2004, "European Training Program in Applied Epidemiology" 2005, Course at NCIPD "Legal capacity to head Pest control" 08.03.2005, "New methods of training in Epidemiology at the Medical Universities in Bulgaria" 2007, "Innovative ideas in the field of planning and construction of modern departments for central supply of sterile materials" 2010. Basic principles for cleaning and disinfection in the medical sector - products and solutions" 2011, Postgraduate Training Course in Health Management - MU Varna 2011, ECDC "Control

of multidrug-resistant organisms (MDROs) in healthcare settings 2021" 2021, "Patient safety first: how to optimize reprocessing processes in CSSD" 2021, "Digital skills (intensive training) - 24 hours" 2022, Professional qualification Aikido sensei; NSA "V. Levski" - Sofia.

In June 2010 successfully defended a dissertation on the topic "Study of the role of disinfection in the control of infections in health care facilities" and obtained the scientific degree "Doctor".

2. Materials presented for the competition

In the current competition for the academic position of "**Professor**", Assoc.Prof. Dr. Tsonko Paunov Paunov MD participates with **31 scientific papers**, according to the requirement 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 MU-Varna.

In accordance with *Scientific metrics* presented for the occupation of the academic position "**Professor**" area 7 "Health and Sports", the distribution of scientific production covers the sections:

A1. Dissertation work for obtaining the educational and scientific degree "Doctor":

Paunov, Tsonko "Study of the role of disinfection in the control of infections in health care facilities".

B3. *Habilitation thesis - monograph: "Disinfection in the modern conditions of social development. Theory and Practice." Issued by MU Varna, 2022. 208 c. ISBN 978-619-221-405-0*

G7. Publications and reports published in scientific publications, referenced and indexed in world-famous databases with scientific information - 7;

G8. Publications and reports published in non-refereed peer-reviewed journals or published in edited collective volumes – **15**;

❖ Full-text publications in scientific journals and anthologies beyond the minimum scientometric requirements for holding the administrative position "professor" - **8**;

❖ Citations reflecting the candidate's scientific activity - **13**.

(Academic reference for the publications, citations and scientific profiles of Assoc.Prof. Dr. Tsonko Paunov Paunov MD, Department of Hygiene and Epidemiology, Faculty of Public Health, Medical University-Varna prepared in the Library of MU-Varna).

In conclusion, a total of 31 scientific publications, subject to review and evaluation in the current competition, were submitted after the competition for the academic position of "associate professor" (2012). The provided documentary official scientific, educational and teaching information meets the requirements 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, qualitative and quantitative criteria for occupying the academic position of "professor" in the specialty epidemiology of infectious diseases.

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

1. General characteristics of scientific production and publication activity

The scientific works of Assoc.prof **Dr. Tsonko Paunov Paunov MD** have been published in authoritative and peer-reviewed scientific journals and edited collective volumes - *Journal of IMAB, International Journal of Current Microbiology and Applied Sciences (IJCMAS), Helminthologia (Poland), Folia Medica, Practical Pediatrics, Scripta Scientifca Salutis Publicae*

Varna, Varna Medical Forum, Science Infectology, Health Economics and Management, Collection of abstracts and reports from the First National Conference "Public health - a global priority in science and practice", Journal of Bulgarian Association for Prevention and Infection Control — BulNoso, International Academy Journal Web of Scholar, Healthcare.

Assoc.Prof. Dr. Tsonko Paunov Paunov MD is the main and lead author in a significant part of the publications and reports presented.

Actively participates in the implementation of international and national scientific and educational projects with valuable applied results: "Creating a multidisciplinary educational environment for the development of personnel with integral competencies in the field of biomedicine and health care" 2021-2023. "Modern approaches for sustainable management of the agro-food chain" - 2020-2022, "Seroprevalence of toxocarosis in risk groups of the population of North-Eastern Bulgaria", MIG-H Training - "Development of specific training modules for health professionals, law enforcement officers and trainers, on migrants' and refugees' health, addressing communicable diseases and mental health problems", ECDC "Burden of Communicable Disease (BCoDE) project", "Student practices - Phase 1 and 2", "Cross-sectional study of morbidity from nosocomial infections in Bulgaria "2006, Peculiarities of the epidemic process in zoonoses in the Varna region" 2002.

Scientific activity is expressed in numerous participations as an author and speaker at international and national scientific forums, where **59 scientific reports** were presented in the field of epidemiology of infectious diseases.

Assoc.Prof. Dr. Tsonko Paunov Paunov MD is the official supervisor of 5 doctoral students, 1 defended dissertation and 4 in the process of developing dissertation topics in the field of epidemiology, as well as the supervisor of 4 graduate students for master's programs. The professional and scientific competence and the ability to work with PhD students and graduates allow active assistance and creation of conditions for academic and professional growth, participation in training and international forums, creation of suitable conditions and opportunities for work and development. Proof of the successful scientific and educational process is the successful defense of dissertations and diploma theses and the overall scientific and professional development of colleagues.

Assoc.Prof. Paunov registers active participation in the world scientific networks: Web of Science Researcher, Research Gate, Google Scholar, Scopus, Academia, which is an important indicator of scientific activity visible to the world scientific community. He is fluent in English, German, and Russian – all spoken and written, enabling him to successfully carry out teaching, scientific and communication activities at all levels.

Assoc.Prof. Tsonko Paunov, is a member and actively participates in the activities of the Bulgarian Medical Union, the Bulgarian Scientific Society for Epidemiology of Infectious and Non-Infectious Diseases, the Union of Scientists in Bulgaria, the Bulgarian Association for the Prevention and Control of Nosocomial Infections "BulNozo", the Pest Control Association, Bulgarian Public Health Scientific Society.

2. Main thematic directions and contributions in scientific works:

- The presented monographic work "**Disinfection in the modern conditions of social development. Theory and Practice**": Issued by MU Varna, 2022. 208 pp., ISBN 978-619-221-405-0, is a structured epidemiological study and analysis of the constantly renewing part of applied epidemiology - *disinfection work*.

In a systematic order, the author creatively presents the theoretical and practical foundations in the development of disinfection science, in the conditions of modern social development. There is a separate section in which the main concepts, definitions and sets in the field of disinfection work are presented. In the methodological part, all means and activities for disinfection and sterilization are described. An applied section examines disinfection in the food industry, cosmetic and hairdressing services, disinfection in society and life in the conditions of a health threat and a pandemic.

In the second chapter, dedicated to medical disinfection and sterilization, the deep theoretical knowledge and accumulated practical experience of the author are evident. The entire spectrum of medical decontamination activities has been studied in full: hand disinfection and antiseptic; disinfection of surfaces and medical devices; features of medical disinfection and sterilization control.

The third section of the monographic work contains the own studies of the Multiprofile Hospital for Active Treatment (MBAL) "St. Marina" - Varna, dedicated to the control of disinfection and sterilization practices; the organization, management and control of decontamination activities; own experience from the conducted epidemiological studies related to disposable instruments and supplies; studies on the impact of COVID 19 on healthcare associated infections (HAI) and disinfection practices.

We can definitely summarize that the monograph of Assoc.Prof. Dr. Tsonko Paunov is a harmonious theoretical-applied study with a contributing character in the field of disinfection and sterilization, allowing to acquire modern knowledge of medical disinfection and sterilization in modern social conditions.

- **Epidemiology of healthcare-associated infections**

1. A study was conducted on the impact of the COVID-19 pandemic on healthcare-associated infections (HAI) at UMBAL "St. Marina" - Varna, Bulgaria. Staffing shortages lead to a decrease in registered HAI cases in 2020 compared to 2019. As registration improves, a near-doubling follows in 2021. (0.60%). Due to antibiotic pressure, E.coli and C.albicans increase their impact in 2021. Ventilator pneumonias and surgical site infections predominate in the HAI profile. The COVID-19 pandemic has affected both HAI prevalence and pathogen profiles. A collaborative effort by hospital management, the infection control team, the HAI Control Committee and all staff is needed to improve the surveillance and control of HAI.

2. A comparative study of HAI supervision was made in UMBAL "St. Marina" - Varna in order to analyze the HAI profile for the period 2016-2020 and to track the correctness of the registration. A reduced relative share of registered HAIs was found with increased consumption of antibiotics and predominant antibiotic-resistant isolates of the nosocomial pathogenic strains, which is a sign of incomplete registration. In a similar study at MBAL Varna - Military Academy for the period 2010-2020, a large relative share (41.83%) of microbiologically unproven HAIs was registered. Appropriate guidelines for improving surveillance system, adequate registration and antibiotic policy are recommended to reduce the concealment in the increasing trends of HAI incidence.

3. The organization of the epidemiological surveillance of healthcare-associated infections (HAIs) was studied in the conditions of the University Hospital St. Marina Varna including two types of activities - basic and supporting for the period 2006-2015. Systematic activities on epidemiological surveillance, combined with targeted staff training and adequate communications with laboratory units and external control carried out by the Regional Health Inspectorate (RHI) are indicated as key to protecting patients from HAI in the hospital structure.

Mechanisms are indicated which, if necessary, enable rapid changes in the resource management policy.

4. Antibiotic pressure for a 5-year period (2011-2015) leads to a change in the etiological structure of HAI and a change of the leading pathogen over the years. The systematic analysis of circulating bacterial pathogens in hospital settings is one of the daily tasks of the hospital's BBI and antibacterial therapeutic policy committee, leading to an adequate limitation of antibacterial overuse and microbial resistance.

5. As part of the implementation of the International Patient Safety Programs of the WHO and the International Alliance for Patient Safety, a thorough and large-scale study and analysis was carried out on the knowledge and application of the "Medical Standard for the Prevention and Control of Nosocomial Infections" by nurses and midwives in medical facilities, training bases and those that are not bases. Precautions regarding personnel and the organization of disinfection and sterilization have been studied. Along with the good practices in disinfection and sterilization, there are negative trends in the injuries of the staff with sharp and cutting objects, with the relative share of the injured being large. The standard is not known. The study directed the measures to additional training of the personnel.

- **Disinfection, disinsection and deratization**

1. A serious emphasis in the research activity of Assoc.Prof. Dr. Tsonko Paunov are his own studies and current literature analyzes on disinfection, disinsection and deratization. The organization, management and control of the preventive measures for disinfection, disinsection and deratization carried out in the period 2011-2015 in the structure of UMBAL were studied. The need for the creation and development of a targeted action program in the medical facility, regarding the organization of DDD events as an element of the prevention and control of infections related to medical care and minimizing the biological risk for the staff, has been proven in practice.

2. Disinfection methods and means are thoroughly examined, and the wrong practices related to the reprocessing of disposable devices and the care of venous catheters are indicated. Special attention during the study was paid to the placement and maintenance of already placed central and peripheral venous catheters. A brief financial analysis of HAI costs in real cases has been made. Important recommendations are made about the risks and cost of risk in these activities.

3. The knowledge of hand disinfection among medical students was studied and specific suggestions were made for the inclusion of the material in teaching.

4. Due to the primary importance of disinfection in the modern conditions of social development to protect society from infectious threats, it is considered in a separate monographic work.

- **Immunoprophylaxis**

1. A large-scale survey of parental attitudes and hesitancy towards immunizations carried out by the candidate in a team found regularities that helped the Ministry of Health make an important decision when voting on the new law on mandatory immunizations.

2. The level of immunization coverage in the Varna region was studied with an assessment of its importance for public health. Valuable recommendations were made in terms of securing resources and improving the organization.

3. A review and evaluation of the organizational, methodical and applied actions for the implementation of the epidemiological surveillance of manageable infections in the Varna region with measures to improve the work on epidemiological control as a prevention against unwanted epidemiological events was carried out.

- **Epidemiology of respiratory tract infections**

1. The state of tuberculin sensitivity and the level of post-vaccination anti-tuberculosis immunity in childhood in the Varna Region were studied, and opinions and recommendations for improving the state of anti-tuberculosis immunoprophylaxis were expressed.

2. The epidemiological significance of the tuberculin test in the system of specific anti-tuberculosis immunoprophylaxis was studied with an analysis and a proposal for complex improvement in 922 children aged 7 months to 17 years in the city of Varna for the period from 2010-2012, subject to a mandatory test of tuberculin sensitivity with a Mantoux test.

3. The regularities of the epidemic process in the respiratory tract infections in the Varna region (vaccine-preventable and unmanageable) in the modern conditions for the first decades of the 21st century are deduced and the epidemiological impacts of mass immunoprophylaxis are highlighted.

- **Epidemiology of intestinal infections**

A study and characterization of the ecological and health-demographic conditions of the Dobrich region was carried out as the main factors determining the epidemiological geography of intestinal infections.

- **Epidemiology of HIV infection**

1. Epidemiological characteristics of HIV infection in the Varna region for the period 2004-2017 were studied, with a problematic analysis of the peculiarities of the epidemic process.

2. The data from a study and analysis of the global situation in the syndrome of acquired immune deficiency and the epidemiological risk for Bulgarian citizens in the conditions of intensive international transport and sea transport are presented, with specific recommendations on reducing the degree of infectious risk with an emphasis on medical specialists and persons practicing maritime professions.

- **Epidemiology of zoonotic blood-borne infections**

1. A large-scale interdisciplinary epidemiological study was carried out, in accordance with the objectives of the European scientific program to study and highlight the dependencies of the changing environment and the processes of emergence of tick-borne infections EDEN TBD in the Black Sea region of the Republic of Bulgaria, and the obtained results are presented.

2. The study of the main epidemiological and informational parameters determining the evolution of the parasitic system in socially significant tick-borne infections in the Varna Region continued - the characteristics of the epidemic process and its determining factors for Lyme disease, Marseilles fever, Crimean-Congo hemorrhagic fever, Q fever.

- **Epidemiology of infections of the outer coverings**

1. An epidemiological characterization of tetanus infection in the Varna region for the period 2010-2016 was carried out against the background of mandatory immunoprophylaxis with tetanus toxoid with an emphasis on the importance of preventing tetanus infection.

- **Studies in the epidemiology, etiology, diagnosis, clinic, treatment and control of some parasitoses.**

1. On the basis of a large-scale study of 14,611 patients with routine parasitological laboratory methods for the country, the epidemiological structure of parasitic diseases in the Varna region is presented, valuable conclusions are drawn about the growing epidemiological significance of the "hidden" incidence of parasitic diseases and the need to differentiate the approach and the legal basis.

2. A study of the epidemiology, etiology, diagnosis, clinic, treatment and control of toxocarosis - a zoonosis of global importance, but little known in our country and unexplored so far in the Varna region, is one of the directions in the candidate's scientific research.

• In 2015 the candidate studies the epidemiology of this parasitosis as a member of a team that implemented the serological test for specific antibodies (ELISA) for toxocarosis for the first time in the scientific-diagnostic practice at the local level, which allowed to register and describe many cases of the disease in the human population. The frequency of the clinical manifestation of toxocarosis among children and adults with clinical complaints, in the presence of occupational risk and among the healthy population, was studied. The obtained results provide information on hitherto unknown high levels of seroprevalence and significant spread of toxocarosis in the region.

In summary - The candidate's scientific output covers diverse areas of the epidemiology of infectious and parasitic diseases. Original research and resulting epidemiological analyzes and anti-epidemic activities have been carried out, which is evidence of the candidate's broad professional competence and scientific interests. The obtained results have a certain contribution to medical science.

3. Evaluation of the teaching activity of the candidate

Assoc.Prof. Dr. Tsonko Paunov Paunov MD has a total of over 24 years of teaching experience at the MU - Varna. The high professional qualification in "Epidemiology", combined with extensive practical experience, allows the implementation of a quality learning process with students, interns and specialists from the Faculty of Medicine, the Faculty of Public Health, the Faculty of Dental Medicine and the specialties of the Varna Medical College, at an average learning workload in recent years 321.75 hours at norm 126 hours.

The spectrum of academic disciplines in the teaching palette of Assoc.Prof. Dr. Tsonko Paunov Paunov MD includes: medical students - English-language and Bulgarian-language training and exchange programs between universities, dental medicine, health care, nurses, midwives, medical laboratory assistants, health management, health care management, modules in master's programs of Guarding and Control of Public Health (OKOZ), Public Health (OZ) and Health Management (ZM), Healthcare Management (USG); Elective Discipline "Tropical Medicine" and "Infection Control", Postgraduate Training in the specialty "Epidemiology of Infectious Diseases" and "General Medicine".

In the implementation of the educational process, he acts as an erudite organizer and manager, skillfully applying modern methodology in the educational activity. Participates in the compilation of new curricula and the constant updating of existing curricula and tests for students of medicine, dentistry, health management, public health protection and control, etc.

Actively organizes and participates in all scientific, jubilee, creative and other events organized by the Medical University of Varna and the Department of Hygiene and Epidemiology. 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, the Bulgarian Public Health Association and the European Public Health Association (EUPHA).

II. Critical Notes

I have no critical notes regarding the candidate.

III. Personal Impressions

Our long-term joint work as members of the staff of the Department of Hygiene and Epidemiology allows me to certify that Assoc.Prof. Dr. Tsonko Paunov Paunov MD established himself as a teacher, scientist and colleague with high professionalism, broad scientific interests, pronounced collegiality and organizational skills.

IV. Conclusion

Assoc.Prof. Dr. Tsonko Paunov Paunov MD is a respected member of the academic community of the Medical University in Varna. He is an erudite specialist, experienced teacher, serious researcher and practitioner with considerable professional and pedagogical experience. The scientific, teaching and organizational work of Assoc.Prof. Dr. Tsonko Paunov Paunov MD fully meets 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 MU-Varna for Academic Promotion.

As a member and chairman of the Scientific Jury, I support his candidacy for the academic position of "**Professor**" in the scientific specialty "**Epidemiology**" at the Department of Hygiene and Epidemiology, Department for Public Health, Medical University - Varna and I will vote "**YES**".

CHAIRMAN OF THE SCIENTIFIC JURY

(Prof. Dr. Rumen Konstantinov, MD)

City of Varna
21.11.2022