

**“CAROL DAVILA” UNIVERSITY OF MEDICINE AND
PHARMACY BUCHAREST
DOCTORAL SCHOOL MEDICINE**



THE HABILITATION THESIS

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“Carol Davila” University of Medicine and Pharmacy

2024

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**INFECTIOUS DISEASES AS AN INTEGRAL
PART OF HEALTH SERVICES IN THE ERA OF
MODERN MEDICINE**

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The habilitation thesis with the theme "INFECTIOUS DISEASES AS AN INTEGRAL PART OF HEALTH SERVICES IN THE ERA OF MODERN MEDICINE" represents the result of my professional clinical, academic and research career in the field of infectious diseases and a thorough understanding of everything that the model of good practice in care means the patient with infectious pathology.

Therefore, this thesis aims to define the challenges associated with infectious diseases, describe the main research directions and highlight the central role of the specialty in increasing the quality of health services, patient safety and, last but not least, in reducing morbidity and mortality from infections.

In 2007, I started residency studies in the specialty of infectious diseases at the Matei Bals National Institute for Infectious Diseases and in 2012 I became a specialist doctor. In 2013 graduated PhD studies. During the period 2014-2015 I attended the post-doctoral studies with a topic addressed to endocrine dysfunction in septic patients. Since 2017, I am infectious diseases senior physician.

My academic activity began in 2016 when I obtained the position of assistant professor at the Carol Davila University of Medicine and Pharmacy, Faculty of General Medicine, in Bucharest. From 2023, I am Associate Professor in Infectious Diseases at the same University. In the period 2020-2022, I was appointed the coordinator of the national vaccination campaign against COVID-19. Starting in 2021, I was nominated as residency coordinator for the specialty of infectious diseases. From March 2023, I hold the position of general director of the Agrippa Ionescu Emergency Clinical Hospital.

The main research topics developed throughout my professional career were addressed to the following areas: infections with hepatitis B, C, E viruses, HIV/AIDS infection, other emerging and travel-related viral infections, namely SARS-CoV-2 and Dengue, severe bacterial infections caused by strains with multiple or extensive antibiotic resistance, prevention and control of healthcare-associated infections and invasive fungal infections.

One of the most important research projects was entitled "Quantitative HBs antigen dynamics and prediction of response to antiviral treatment with pegylated interferon or nucleoside and nucleotide analogues in chronic hepatitis B (CHB) patients" conducted during my PhD studies. Taking into account our results we designed an algorithm for

individualization of the interferon-based treatment in CHB patients, based on quantification of HBsAg and hepatitis B viremia during treatment. This algorithm was correlated with the general objective of our project, respectively the standardization of the measurement of the serum level of HBsAg as a surrogate biomarker for antiviral response in Romanian CHB patients.

I published 24 articles in ISI indexed journal with impact factors, 11 articles in interanational data base (IDB) journals, and more the 40 abstratcs in ISI and IDB indexed journals. The Hirsch (H) index in Web of Science Core Collection (Clarivate Analytics) is 6, with 79 citations during all period. In addition, the H index in Google Scholar is 7, with more than 188 citations. In addition, I have published 2 books as the main author and 13 book chapters in national and international publishing houses, of which the two books were awarded.

I participated as principal investigator and sub-investigator in 11 randomized, multicenter, interventional and non-interventional clinical studies.

I was selected as a medical expert and scientific responsible of the research team for 4 national or European research grants. Since 2021, I am part of the research team as the scientific responsible for the European project "REVERSE (pREvention and management tools for rEducing antibiotic Resistance in high prevalence Settings)", financed by Horizon 2020, European Health and Digital Executive Agency. The project aims to reduce healthcare-associated infections caused by multidrug-resistant Gram-negative bacteria, such as carbapenem-resistant Enterobacterales, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. Through a statistically powered clinical trial, REVERSE will answer questions about the actual effectiveness of infection prevention and control programs in combination with programs for judicious use of antibiotics and improved microbiological diagnostics.

In December 2023, I obtained the Invention Patent granted by OSIM (State Office for Inventions and Trademarks) with the title "Custom implant made of bioresorbable materials for the internal fixation of long bone fractures". Also, I have been awarded with dozens of awards and distinctions for clinical and research activity, of which I mention Order of the "Health Merit" in the rank of "Knight" with insignia for the military, Presidential Decree, as a sign of appreciation for the important contribution and professionalism proven in providing the medical act.

I obtained the certificate in the Management of Health Services and the certificate in the travel medicine.

In the long term, it is important to continue the clinical, research, didactic, academic and editorial activities in the field of infectious diseases, within the Infectious Diseases Department of the "Agrippa Ionescu" Emergency Clinical Hospital.

A strategic objective is the professional development and expertise of infectious disease practitioners, including doctors, nurses and ancillary staff closely linked to the work of other hospital services. Integrated multidisciplinary development enables effective management of complex infectious pathology at the border between specialties.

Another objective is to continue the development of the department of infectious diseases by building the new headquarters of the Hospital. The establishment of the HIV/AIDS department within the ID department will be a key end point of the project.

Being an extremely dynamic field, in which medical information is constantly changing, I propose the integration of research into the educational process and the creation of a balance between research and didactic activity. The development of the e-learning and e-teaching concept in the didactic activities will facilitate the learning process by using online platforms with the possibility of accessing a virtual library where specialized lectures, clinical case presentations, presentations at conferences/symposia are stored, illustrative media videos.

I propose the continuation and development of the research directions already started. I refer to the infectious diseases considered at this moment a public health priorities, both in Romania and internationally, by the prevalence, morbidity and significant mortality associated with them (antimicrobial resistance, healthcare-associated infections, acute and chronic viral hepatitis, HIV, and COVID-19). The establishment of a Research Department in the structure of the Hospital, with dedicated multidisciplinary research staff, the formation of research consortia between various national and international universities and the already existing membership of the international network of clinical trials in Infectious diseases, such as the European Clinical Research Alliance in Infectious Diseases (ECRAID – European Clinical Research Alliance on Infectious Diseases) represent concrete long-term objectives in research and development.