

**UNIVERSITY OF MEDICINE AND PHARMACY
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DOCTORAL SCHOOL
MEDICINE**

**Communicable diseases and healthcare-
associated infections – current challenges
HABILITATION THESIS ABSTRACT**

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Abstract

The habilitation thesis "**Communicable diseases and healthcare-associated infections – current challenges**" presents the professional, scientific, and academic activity I have carried out in the field of epidemiology, describing the educational and research projects in two important areas for public health: healthcare-associated infections and communicable diseases.

I graduated from the Faculty of General Medicine at the "Carol Davila" Institute of Medicine and Pharmacy in Bucharest in 1989. I have been a senior epidemiologist since 1999. I have been a doctor in medical sciences since 2006 and joined the academic career at the Carol Davila University of Medicine and Pharmacy (UMFCD) in Bucharest in the Department of Epidemiology in 2014. For over 20 years, I have been working as a chief epidemiologist in the infection control department at the Emergency Clinical Hospital for Children "Grigore Alexandrescu" Bucharest.

Healthcare-associated infections (HAI) and antibiotic resistance (AMR) represent current challenges for the healthcare system in our country and worldwide, impacting morbidity, mortality, quality of life, and costs for patients and the healthcare system. Romania is facing a high level of antibiotic resistance and a consumption of antibiotics according to data from the National Center for Disease Surveillance and Control and ECDC.

Simultaneously, a series of communicable diseases preventable by vaccination are currently evolving as epidemics because of low vaccination coverage caused by decreasing vaccine acceptancy. In this context, our country is facing an increased risk of importation of poliomyelitis (already in the eradication stage and eliminated from Europe since 2002) or epidemic evolution of measles (a disease proposed for elimination in Europe).

The first chapter of the thesis describes the teaching activity carried out within the Epidemiology Discipline of UMFCD, an activity consisting of courses and practical work for students and residents, complementary postgraduate study programs in the field of healthcare-associated infections, vaccinology programs carried out through UMFCD, training courses for pharmacists for influenza vaccination, courses for hand hygiene

The activity of guiding students and residents in the completion of bachelor's theses and dissertations (8 in total) is described, exemplifying topics such as the assessment of the risk of poliovirus importation and mRNA COVID-19 vaccine reactogenicity. Guiding epidemiology residents in research resulted in over 40 papers being presented at national

conferences. Since 2024, I have been guiding 3 doctoral students, an activity that has resulted in the publication of an article on *Clostridioides difficile* infection in an ISI-listed journal.

My participation in the development of teaching materials for students, residents, and doctors has materialized in co-authoring 15 chapters in 5 books. Two of these books have received prestigious national and academic awards.

The second chapter is dedicated to the scientific activity carried out after obtaining the title of Doctor of Medicine in 2006, being structured on the following topics: healthcare-associated infections, COVID-19, measles. In the field of healthcare-associated infections, I participated as a member in two international research projects, one of which resulted in the development of Guidelines in Epidemiology, Infectious Diseases and Microbiology.

The COVID-19 pandemic has also posed a challenge to the healthcare system in our country and around the world. Together with colleagues from both Epidemiology disciplines of UMFC, we conducted several studies that described the evolution of the pandemic in our country, vaccination against COVID-19 and the National Vaccination Registry, mRNA COVID-19 vaccine reactogenicity, and COVID-19 in healthcare workers.

Throughout my career, I have published 46 articles, of which 28 were published in journals indexed in the Web of Science core collection, which were cited 709 times, resulting in a Hirsch index of 7 within this collection. Two published research papers were UEFISCDI-awarded in 2021 and 2022.

Chapter 3 is dedicated to professional achievements in the field of epidemiology, describing over 20 years of experience in infection prevention and control in the oldest pediatric hospital in Bucharest, a prestigious clinical institution in the healthcare in our country, and a teaching center. We registered the hospital in 2014 in the WHO campaign "Save lives. Clean your hands" for patient safety, launched in 2005. We participated in two WHO studies of the Hand Hygiene Program in 2015 and 2019. As a sentinel surveillance hospital for HAI and AMR, we participated in all point prevalence HAI and AMR European studies of the ECDC in 2012, 2017, and 2023. In all these activities in the hospital, I have involved epidemiology residents who were undergoing training.

I have been acting for over 10 years as a member of the National Committee for the Verification of the Elimination of Measles and Rubella and over 8 years in the Epidemiology Commission of the Ministry of Health and in working groups for HAI of the Romanian Society of Epidemiology.

For the entire activity in the Grigore Alexandrescu Hospital, I was distinguished, along with several of my colleagues physicians and nurses, with the Order "Meritul Sanitar în grad de Cavaler" by the President of Romania in 2015.

The last chapter describes perspectives and proposals in the professional, didactic, and research activity of the future, participation in the elaboration of volume 2 of the Epidemiology course for students, updating of the epidemiology book together with colleagues from UMFCU and other university centers in the country, and updating of the book dedicated to influenza vaccination in pharmacies and also participation in postgraduate training programs at the UMFCU.

An important place in future projects includes guiding residents, students in research and practical activities. I am currently guiding the research activities for three doctoral students in important topics (measles, HAI, and *Clostridioides difficile* infection). In all these activities with students, residents, and doctoral students, I will encourage work in a multidisciplinary team (laboratory, clinicians, pharmacists, infectious diseases, epidemiology), and involvement in continuous learning, given the rapid progress of science and technology and the changes in the evolution of communicable diseases.

I will continue to promote hand hygiene as a life-saving intervention for prevention of both HAI and transmission of antibiotic resistance pathogens. I will also continue to promote vaccination as the most effective prevention method of vaccine-preventable diseases.

I wish to be able to pass on all my knowledge and experience to a passionate team of students, residents, and doctoral candidates who will contribute to the prevention and control of communicable diseases, healthcare-associated infections, and antibiotic resistance, and to the progress of research in the field, for the benefit of future generations.