



**RONZA HADAD** was born in Beirut, Lebanon in 1984 but moved to Sweden in 1987 and grew up in Nora, north of Örebro. She graduated as a Biomedical scientist in 2006 and received her MSc in Biomedical laboratory science in 2009, at Örebro University. Her interest in the research area developed during her work on BSc and MSc theses and continued during her work with routine diagnostics at the Department of Clinical Microbiology. Her doctoral studies began at Örebro University in 2012, which resulted in a Licentiate degree. After a short break, she continued her doctoral studies in 2019 at the Department of Laboratory Medicine, Clinical Microbiology, Örebro University Hospital.

Sexually transmitted infections (STIs) are major global public health issues. The causative agents of gonorrhoea and chlamydia, *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, respectively, are the most commonly reported bacterial STIs. In addition to the high prevalence of infections, *N. gonorrhoeae* has developed many mechanisms for antimicrobial resistance with increasing concern for the emergence of untreatable gonorrhoea. The World Health Organization has developed strategies to address the increasing spread of STIs and the emerging antimicrobial resistance in *N. gonorrhoeae*. This thesis focuses on the implementation of these strategies, which involves developing vaccines against *N. gonorrhoeae* and *C. trachomatis*, evaluating molecular assays for detection of infection and prediction of antimicrobial resistance and performing national genomic surveillance of all gonorrhoea cases in Sweden, contributing to a comprehensive understanding of strains circulating in the Swedish population and gonorrhoea and gonococcal antimicrobial resistance epidemiology. These implementations aim to contribute to the management and prevention of gonorrhoea and chlamydia and limit the development of antimicrobial resistance in *N. gonorrhoeae*.

ISSN 1652-4063  
ISBN 978-91-7529-440-7

RONZA HADAD Management and prevention of sexually transmitted infections

2022



RONZA HADAD Management and prevention of sexually transmitted infections

Doctoral Dissertation

## Implementation of strategies for management and prevention of sexually transmitted infections with focus on *Neisseria gonorrhoeae* and *Chlamydia trachomatis*

RONZA HADAD

*Medical Science with a specialisation in Biomedicine*