

INFECTIOUS DISEASES SOCIETY OF AMERICA-ASP YOUNG INVESTIGATOR AWARD IN GERIATRICS



AWARD RECIPIENT

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PROJECT

"GROUP-LEVEL DETERMINANTS OF ANTIMICROBIAL RESISTANCE IN NURSING HOMES"

MENTORSHIP TEAM

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An estimated 1.6 to 3.8 million infections and as many as 400,000 infection-related deaths occur in US nursing homes each year. The emergence of antibiotic resistance in nursing homes threatens to exacerbate this problem further. Infections caused by antibiotic-resistant bacteria are not only more difficult to treat but are also associated with increased health care utilization and excess patient mortality when compared to infections caused by antibiotic-sensitive bacteria.

Current knowledge regarding the determinants of antibiotic resistance in nursing homes is rudimentary and has primarily focused on individual-level risk factors. Despite increasing evidence that group-level characteristics of nursing homes have a strong impact on adverse resident outcomes, little attention has been devoted to examining the effect of nursing home characteristics on the spread of antimicrobial-resistant microorganisms. This lack of attention is unfortunate as facility-level characteristics of nursing homes are intrinsically more amenable to interventions than individual-level characteristics like age and functional dependence, which are only rarely modifiable.

The long-term goals of my research are to develop a better understanding of the dynamics of antimicrobial resistance in nursing homes and to develop systems-based interventions aimed at disrupting the transmission of these clinically important pathogens. For the current project, I have hypothesized that the quality of infection control and nursing staff are strong determinants of antimicrobial resistance within nursing homes. The specific aims of this research project are to:

1. Determine the prevalence and incidence of different types of antimicrobial-resistant microorganisms in facilities across the demographic spectrum of nursing home care.

2. Obtain pilot data to determine if the quality of nursing home infection control and its nursing staff are associated with the prevalence and incidence of antimicrobial-resistant microorganisms.

My academic development to date has included clinical and research training in infectious diseases as well as completion of a master's degree in population health sciences at the University of Wisconsin. My growth into an independent investigator has been greatly enhanced by my pursuit of a PhD in population health as well as my participation as a member of the Training and Education to Advance Multidisciplinary Clinical Research (TEAM) program at the University of Wisconsin. These experiences have provided me with the training in research design, epidemiology, and biostatistics necessary for the research I am proposing. To further my understanding of issues specific to the geriatric population, I am planning to obtain a Certificate of Gerontology through the Institute of Aging at the University of Wisconsin. Under the guidance of my mentors Dennis Maki, MD, David Zimmerman, PhD, and Paul Drinka, MD, I will cultivate additional training and collaborations within the fields of geriatric medicine, epidemiology, and infectious diseases to ensure that my current and future research endeavors are of the highest quality.

The Infectious Diseases Society of America-ASP Young Investigator Award in Geriatrics will provide valuable support for my training as an independent investigator in geriatric and infectious diseases research. The award will enable implementation of the study proposal, which will generate valuable knowledge about the transmission of antimicrobial-resistant microorganisms among residents of nursing homes and lead to the development of future studies and interventions to reduce the morbidity associated with these pathogens.