

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



AWARD RECIPIENT

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PROJECT

"DEFINING URINARY TRACK INFECTION IN NURSING HOME RESIDENTS"

MENTORSHIP TEAM

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Criteria for surveillance, diagnosis, and treatment of urinary tract infections (UTI) in nursing home residents have been developed by expert consensus rather than empirical data. Lack of evidence-based criteria leaves nursing home practitioners with the common clinical dilemma of deciding whether nonspecific clinical changes (e.g., fever and change in mental status) are attributable to UTI and whether treatment will improve clinical outcome. Since antibiotic therapy is associated with risks (i.e., adverse drug effects, emergence of antibiotic resistant organisms), it is important to identify residents with suspected UTI for whom the benefits of antibiotic therapy outweigh potential harm. The objective of this research is to develop an evidence-based definition of UTI in nursing home residents that includes both clinical features and laboratory components. Such a definition can be validated and used in future studies to optimize surveillance, treatment, and prevention strategies.

The specific aims of this research proposal are to:

1. Identify clinical features in nursing home residents with suspected UTI that are associated with laboratory evidence of UTI (i.e., bacteriuria plus pyuria).
2. Identify residents with suspected UTI that have adverse outcomes related to UTI (e.g., bacteremia, sepsis), to treatment (e.g., adverse drug effects), or to either (e.g., death).

The product of this research will be a clinically useful evidence-based definition for UTI that combines identified clinical features and laboratory evidence of UTI. This definition can be validated and tested in future studies to determine the subset of residents in which antibiotic therapy is associated with reduced adverse outcomes. In addition, since UTI is the most common infection

in nursing home residents, an empirically derived definition for UTI can standardize infection control surveillance in nursing homes. Research in this field can lay the foundation for rigorous standards for surveillance, diagnosis, and treatment of many different infections in nursing home residents.

To attain training in geriatrics and infectious diseases research, I will enroll in courses through the Yale School of Public Health, and I will attend the Society for Healthcare Epidemiology of America and Centers for Disease Control and Prevention sponsored 4-day training course in healthcare epidemiology.

This proposal and training will enable me to attain my long-term research goals which are to:

1. Prospectively validate the evidence-based definition of UTI by identifying the subset of nursing home residents in which antibiotic therapy improves clinical outcomes.
2. Identify urinary biomarkers that can distinguish residents with UTI who benefit from antibiotic therapy from those with asymptomatic bacteriuria.
3. Identify and test potential interventions (e.g., bacterial biofilm inhibitors, cranberry therapy, vaginal estrogen therapy) to prevent recurrent UTI in nursing home residents.

My career goal is to become a well trained, extramurally funded, productive, patient-oriented investigator in the field of infections in older adults with specific leadership at the interface of infectious diseases, geriatric medicine, and nursing home practice, thereby becoming an investigative leader in the field of infections in older adults. The support of the ASP-Infectious Diseases Society of America Young Investigator Award in Geriatrics will enable me to achieve this goal.