Infectious Diseases Society of America—ASP—Hartford—Elan Pharmaceuticals Young Investigator Award in Geriatrics

Award Recipient:

Keith Kaye, MD
Duke University School of Medicine

Project:

Patient Safety and Hospital-acquired Infections in the Elderly

Mentorship Team:

Harvey Jay Cohen, MD
John D. Hamilton, MD
Kenneth E. Schmader, MD
Daniel Sexton, MD
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The specific short-term objectives of this proposal are to determine the incidence and risk factors for 1) surgical site infections (SSIs); 2) blood stream infections (BSIs); and 3) colonization or infection with multi-drug resistant bacteria in elderly patients in the hospital; and to quantify the impact on hospital outcomes that the above infections impart in the geriatric population.

These objectives are being accomplished by using infection control data from a tertiary care hospital and 10 community hospitals that are part of the Duke Infection Control Outreach Network. The risk factor analyses for these infections employ a case-control design. Elderly (> 65 years old) case patients with SSIs, BSIs, and colonization or infection with multi-drug resistant bacteria are matched to elderly control patients who were hospitalized or underwent the same type of surgical procedure at the same institution during the same time period as their matched case and did not develop infection. These three infections are being studied separately. Analyses will identify bivariate and independent risk factors for each type of infection among elderly patients and risk models will be designed. Cohort studies are being used to study the outcomes of elderly patients with SSIs, BSIs, and colonization or infection with multi-drug resistant bacteria.

The outcomes include discharge disposition (death within 90 days after infection; discharge to home, home with home health care, or rehabilitation facility or nursing home), number of readmissions to the hospital, total number of hospital days after infection, and hospital charges. Infected elderly patients are being compared to non-infected elderly patients with similar dates of hospitalization and surgical procedures at the same hospital. Our long-term objectives are to use this information to reduce the incidence of these adverse events and improve outcomes in elderly patients by designing interventions that can be tested in clinical trials. The overall aim is to improve patient safety with regards to hospital-acquired infections in the elderly.

My career development is being achieved through structured activities and educational initiatives in geriatric infectious diseases and additional training in interventional trials and biostatistics. Structured activities at the Duke Center for Aging and the division of infectious diseases include attending geriatric and infectious diseases divisional conferences and formal mentoring with Daniel Sexton, MD, (infectious diseases) and Kenneth Schmader, MD, (geriatrics). Educational activities are geared toward raising awareness regarding the risk for infections and antibiotic overutilization among elderly hospitalized patients and the impact on geriatric patient safety. The content of these activities includes analysis of infection control and antibiotic utilization data and review of pertinent literature. This content is being delivered to geriatric and infectious diseases health care workers in lectures, departmental and divisional grand rounds, and interactive workshops. My additional research training includes training in interventional studies and advanced biostatistics at the Duke University Clinical Research Training Program, a nationally recognized program of the Duke Clinical Research Institute.