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EDITORIALS

Preface

David J. Rosenberg, MD, MPH, FACP, SFHM*

Department of Medicine, Section of Hospital Medicine, Division of General Internal Medicine, North Shore University Hospital, Manhasset, New York.

Antibiotic resistance is a particularly troublesome problem in healthcare institutions, and is clearly linked to antibiotic usage.[1–2] The total annual cost of antimicrobial resistance was estimated to be as high as $35 billion or more in the United States in 1989,[3] and much higher in current US dollars. Approximately 5 of every 100 patients admitted to a US hospital develops a nosocomial or hospital-associated infection (HAI),[4] and many of these infections involve bacteria resistant to 1 or more antibiotics.[5] This is important because hospitalized patients infected with antibiotic-resistant bacteria spend a longer time in the hospital, at increased cost, and are at higher risk of death compared to patients with similar infections due to antibiotic-susceptible bacteria.[6] Furthermore, choice of antimicrobial agents across all hospitalized patients is being driven by the concern for these resistant organisms, potentially contributing to medication costs and hospital length of stay.[3]

Awareness of the problem of HAIs and their frequent association with multidrug-resistant pathogens, led The Joint Commission of the United States to identify reduction in risk of HAIs as one of their national patient safety goals.[7] While The Joint Commission's primary focus is on infection control measures (eg, hand hygiene),[7] antimicrobial stewardship can and should play a key role in reducing the emergence and subsequent transmission of antimicrobial-resistant pathogens within the hospital or other healthcare settings.

Antimicrobial stewardship has been defined as "the optimal selection, dose, and duration of an antimicrobial that results in the best clinical outcome for the treatment or prevention of infection, with minimal toxicity to the patient and minimal impact on subsequent resistance." Hospitalists will instinctively find the element of an antimicrobial stewardship to be inherently valuable to their clinical practice.[8] By instituting and adhering to optimal antimicrobial usage within one's own practice and across their institutions, patient care is improved through better clinical outcomes, reduced microbial resistance, and shorter hospital stays.

This supplement of the *Journal of Hospital Medicine* examines key aspects of antimicrobial stewardship in 4 interrelated papers with respective focuses on appropriate initiation and selection of antibiotics (Dr Snydman), antimicrobial de-escalation strategies (Dr Kaye), duration and cessation of treatment (Dr File), and the hospitalist's role in antimicrobial stewardship (Dr Rosenberg). Three case studies, interwoven through 3 of the 4 papers, are used to highlight the application of antimicrobial stewardship principles discussed in the respective papers, in patients commonly encountered in the hospital. The clinical cases deal with healthcare-associated pneumonia, intra-abdominal infections (diverticulitis), and central line-associated bacteremia. The final paper by Rosenberg reviews trends in antimicrobial resistance, costs of hospital-acquired infections, and lays out the argument for Hospitalist participation and, at times, leadership in antimicrobial stewardship programs.

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***Address for correspondence and reprint requests:** David J. Rosenberg, MD, Department of Medicine, Section of Hospital Medicine, Division of General Internal Medicine, North Shore University Hospital, 300 Community Dr, Manhasset, NY 11030; Telephone: 516-562-4500; Fax: 516-562-4758; E-mail: drosenbe@nshs.edu

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