**Introduction**

Keith A. Rodvold, PharmD, FCCP, FIDSA

**Today's Health Care Environment**

Among infectious diseases, community-acquired pneumonia (CAP) is the leading cause of death in the United States and is associated with billions of dollars in health care costs.\(^1,2\) Despite the availability of several classes of antimicrobial agents, elevated resistance rates challenge appropriate antimicrobial selection and increase the risk of treatment failure. Against this backdrop, antimicrobial stewardship programs (ASPs) are being implemented in a growing number of institutions with the goal of encouraging the appropriate use of antimicrobial agents to optimize clinical outcomes while minimizing unintended consequences, including the emergence of resistance.

Appropriate management of hospitalized patients with CAP through effective ASPs has several potential benefits—reduction in morbidity, mortality, and overall health care costs associated with CAP. However, studies are needed to fully evaluate the benefits of ASPs in CAP management. An effective and successful ASP is dependent on the multidisciplinary team responsible for treating the hospitalized patient with CAP—the infectious diseases (ID) specialist, the clinical pharmacist, and other members—serving as a passionate advocate for appropriate antimicrobial use. Educating personnel on the issues related to antimicrobial use and resistance when managing patients with CAP is essential. As a result, several ID physicians and pharmacists from across the country are becoming involved in the START educational program to address this critical need at both the regional and local levels.

**What Is START?**

The START (Stewardship Tactics for Antimicrobial Resistance Trends) educational program commenced in 2006 and has been repeated in each subsequent year as a series of regional meetings originally designed for hospital-based pharmacists. The program was subsequently expanded to include physicians and other health care personnel interested in learning about the latest guidelines and management strategies related to CAP and antimicrobial stewardship.

The objective of the START educational program was to educate and familiarize the health care team on the following topics:

- The epidemiology and impact of hospital-acquired infections in U.S. hospitals
- The common pathogens associated with CAP and national and regional resistance trends
- The importance of pharmacokinetics and pharmacodynamics as factors in appropriate selection of empiric antimicrobial therapy
- Cost-containment strategies for appropriate antimicrobial therapies
- The goals of antimicrobial stewardship and roles of key team members in running a stewardship initiative

This supplement reflects the topics covered in the START program. Three articles are based on the 3 main talks from the START program while a fourth article answers the most commonly asked questions during START meetings.

**Overview**

In the first article, Dr. Thomas M. File, Jr., discusses new guidelines for the diagnosis and treatment of CAP released in 2007 by the Infectious Diseases Society of America (IDSA) and the American Thoracic Society (ATS).\(^3,4\) These guidelines, intended as an update of the 2003 IDSA guidelines, provide evidence-based recommendations for proper management of patients with CAP and address several issues that are evolving in the management of these patients. A portion of the guidelines is devoted to choosing the appropriate site of care guided by mortality prediction tools. This is to ensure that hospitalization is reserved only for those who require it—a response to manage the rising cost of health care. The guidelines also address increasing resistance, selection of the most appropriate therapy, monotherapy versus combination therapy, and the optimal duration of therapy.

The second article, by Dr. David P. Nicolau, addresses cost considerations when treating patients with CAP. The article emphasizes that clinical outcome is only one aspect of gauging the success of patient management strategies. Given the growing economic burden, the health care team must also take into account tactics that improve cost-effectiveness. When considering hospitalization costs, length of stay is a major portion of overall health care cost, while antimicrobial agents are a relatively small proportion of overall cost.\(^5,6\) Not surprisingly, antimicrobial resistance and subsequent treatment failure is a major reason for high costs. The article discusses several tactics that can be used to improve cost-effectiveness while maintaining the quality of care, including choosing the appropriate agent, optimizing dosing (improving the probability of a successful clinical outcome while minimizing the risk of resistance development), active IV-to-oral switch therapy, and short-course regimens.

Dr. Richard H. Drew, in the third article, discusses the role of ASPs in management of infection and presents strategies that can be used to improve the appropriate use of antimicrobials. Excessive and inappropriate use of antimicrobials may render commonly used agents ineffective and lead to an increase in unintended consequences, including the emergence and spread of resistant bacteria. As a result, the guidelines on antimicrobial stewardship were released in 2007 by IDSA and the Society for Healthcare Epidemiology of America (SHEA).\(^7\) These guidelines provide important insights on implementing an ASP at an institution and present evidence pertaining to core strategies that can provide both clinical and economic benefits. The success of stewardship programs is based on the collaborative effort of physicians, pharmacists, infection control personnel, and other health care professionals with the support of hospital administrators.
The fourth article in this supplement discusses a number of questions from the participants that were addressed during the START meetings. This article offers an opportunity to discuss various topics that were not normally covered within the presentations but are relevant to the everyday practice of hospital clinicians.

Summary
Concern about antimicrobial resistance is universal, but developing a solution to combat this crisis begins at the local level within each community and institution. The responsibility for preventing and controlling the spread and emergence of resistant pathogens hinges on all health care personnel. Therefore, a unified multidisciplinary team that includes physicians and pharmacists, among others, must represent the vanguard in our battle against antimicrobial resistance.

DISCLOSURES
Keith A. Rodvold serves as a consultant to Johnson & Johnson, Astellas, GlaxoSmithKline, Theravance, Targanta, and Intranasal Therapeutics. He is on the advisory committees of Johnson & Johnson, Targanta, Baxter, and Pfizer and is a member of the speakers’ bureaus for Johnson & Johnson, Wyeth, Pfizer, and Schering-Plough.

Marco P. Cicero, PhD, of Vemco MedEd, LLC, contributed medical writing and editorial assistance. This article is being published as part of a supplement to the START continuing education program for pharmacists and physicians. It is supported by an educational grant from Schering-Plough Corporation.

REFERENCES

Author
KEITH A. RODVOLD, PharmD, FCCP, FIDSA, is Professor of Pharmacy Practice and Medicine, Colleges of Pharmacy and Medicine, University of Illinois at Chicago, Chicago, Illinois.

CORRESPONDENCE: Keith A. Rodvold, PharmD, FCCP, FIDSA, m/c 886, University of Illinois at Chicago, College of Pharmacy, Room #164, 833 South Wood Street, Chicago, IL 60612. Tel.: 312.996.3341; Fax: 312.413.1797; E-mail: kar@uic.edu

Introduction