



## Antimicrobial Stewardship Program

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June 2018

### Frequently Asked Question 1: Why Antimicrobial Stewardship?

#### Background:

Treatment and prevention of infections depends upon the availability of effective antimicrobial agents. In an era when antimicrobial resistance is increasing, and development of new antimicrobials has decreased, the appropriate use of antimicrobial agents is ever more important. The Centers for Disease Control and Prevention (CDC) reports that an estimated 20-50% of antibiotic prescriptions in US acute care hospitals are either unnecessary or inappropriate.<sup>1</sup> Unnecessary or inappropriate antimicrobial use can contribute to antimicrobial resistance, treatment failure, increased incidence of adverse effects, and increased cost of therapy. Improving the use of antimicrobials is an important patient safety and public health issue.<sup>1</sup> Antimicrobial Stewardship Programs (ASPs) have been shown to be an effective way to reduce the unnecessary or inappropriate use of antimicrobials resulting in improved patient outcomes, reduced adverse events, improvement of antibiotic susceptibilities to targeted antibiotics, and optimization of resource utilization.<sup>1,2</sup> As a result the CDC<sup>1</sup>, along with the Infectious Diseases Society of America (IDSA) and the Society for Healthcare Epidemiology of America (SHEA)<sup>3,4</sup> have developed guidelines for the development of ASPs. In addition as of January 1, 2017 The Joint Commission has implemented a new medication management standard for hospitals, critical access hospitals, and nursing care centers that addresses antimicrobial stewardship practices.<sup>5</sup>

#### Definition:

Antimicrobial stewardship, as defined in a consensus statement from the IDSA, SHEA, and the Pediatric Infectious Diseases Society (PIDS), is described as “coordinated interventions designed to improve and measure the appropriate use of antimicrobial agents by promoting the selection of the optimal antimicrobial drug regimen including dosing, duration of therapy, and route of administration.”<sup>2</sup>

#### Summary of Key Guidelines & Requirements:

##### CDC Core Elements

The CDC has developed a checklist for core elements of hospital antibiotic stewardship programs.<sup>1</sup> This checklist addresses seven key elements including: leadership support, physician leader accountability, pharmacist leader involvement, specific actions to support optimal antimicrobial use, monitoring antimicrobial prescribing, use, and resistance, reporting information to staff, and education. In addition to physician and pharmacist leader responsibilities, support staff involvement is highlighted. Specifically clinicians, infection prevention and healthcare epidemiology, quality improvement, microbiology, information technology, and nursing support are noted.

##### IDSA/SHEA ASP Guidelines

The IDSA/SHEA guidelines published in 2007 emphasize that “the primary goal of antimicrobial stewardship is to optimize clinical outcomes while minimizing unintended consequences of antimicrobial use.”<sup>4</sup> This document describes in detail guidelines for the development of an ASP. Core members, stewardship strategies, and outcomes monitoring are reviewed.



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A second IDSA/SHEA guideline was published in 2016 which provides updated and expanded evaluation of ASP interventions and approaches to measure the success of ASP interventions.

### The Joint Commission Medication Management Standards

Medication Management Standard, MM.09.01.01 became effective on January 1, 2017. This standard requires hospital leaders to establish antimicrobial stewardship as a priority. Hospitals must have a multidisciplinary antimicrobial stewardship team. Hospitals must have a provide education to staff and prescribers as well as patients regarding the appropriate use of antimicrobial agents. The Joint Commission MM standard requires the ASP to include the seven core elements noted by the CDC and discussed earlier in this document. The ASP must use organization-approved multidisciplinary protocols, these may be diagnosis or population specific. Finally the ASP must collect, analyze, and report data on it ASP activities and take action on opportunities for improvement.<sup>5</sup>

### Who Should Be Involved?

The CDC, IDSA, & SHEA all recommend that ASPs should be multidisciplinary teams. It is recommended that ASPs are led by an infectious diseases physician, often supported by a pharmacist, preferably also with advanced infectious diseases training or certification. Other key ASP members include clinicians and nurses as well as microbiology, infection prevention and epidemiology, information technology, quality improvement staff. These multidisciplinary ASP teams will most likely oversee and monitor the ASP activities. The day to day functioning of an ASP program will vary between institutions but will often include daily pharmacist involvement, and the commitment and support of prescribers and nurses.

### References:

1. Centers for Disease Control and Prevention. Core Elements of Hospital Antibiotic Stewardship Programs. 2017; <https://www.cdc.gov/antibiotic-use/healthcare/implementation/core-elements.html>. Accessed May 8, 2018.
2. Society for Healthcare Epidemiology of A, Infectious Diseases Society of A, Pediatric Infectious Diseases S. Policy statement on antimicrobial stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS). *Infect Control Hosp Epidemiol*. 2012;33(4):322-327.
3. Barlam TF, Cosgrove SE, Abbo LM, et al. Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America. *Clin Infect Dis*. 2016;62(10):e51-77.
4. Dellit TH, Owens RC, McGowan JE, Jr., et al. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. *Clin Infect Dis*. 2007;44(2):159-177.
5. Joint Commission on Hospital A. APPROVED: New Antimicrobial Stewardship Standard. *Jt Comm Perspect*. 2016;36(7):1, 3-4, 8.