



## THE ROLE OF PHARMACISTS IN ANTIMICROBIAL STEWARDSHIP PROGRAMS: STRATEGIES FOR OPTIMAL ANTIBIOTIC USE

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### Abstract:

Antimicrobial stewardship programs (ASPs) play a crucial role in promoting optimal antibiotic use to combat antimicrobial resistance. Pharmacists, with their unique expertise in medication management, are vital members of ASPs. This essay explores the specific strategies pharmacists can employ to enhance antibiotic stewardship efforts, ultimately improving patient outcomes and reducing the burden of antimicrobial resistance.

**Keywords:** Antimicrobial stewardship, pharmacists, antibiotic use, antimicrobial resistance, medication management

### Introduction:

Antimicrobial resistance is a global public health crisis, fueled by the misuse and overuse of antibiotics. Antimicrobial stewardship programs (ASPs) have emerged as a key strategy to promote the appropriate use of antibiotics, optimize patient outcomes, and combat the spread of antimicrobial resistance. Pharmacists, as medication experts, play a critical role in ASPs by providing valuable insights and interventions to ensure the judicious use of antibiotics. This essay explores the role of pharmacists in antimicrobial stewardship programs and discusses specific strategies they can employ to promote optimal antibiotic use.

### Method:

To investigate the role of pharmacists in antimicrobial stewardship programs, a review of current literature was conducted. Relevant studies, guidelines, and expert opinions were consulted to identify the specific strategies pharmacists can implement to enhance antibiotic stewardship efforts.

The information gathered was analyzed to highlight key interventions that pharmacists can undertake to improve antibiotic use and combat antimicrobial resistance.

### **Results:**

Pharmacists can contribute to antimicrobial stewardship programs in various ways, including:

1. Collaborating with prescribers to ensure the selection of appropriate antibiotics based on patient-specific factors and antimicrobial susceptibility data.
2. Monitoring antibiotic use through prospective audit and feedback to identify opportunities for optimization and course duration.
3. Educating healthcare providers and patients on the importance of antibiotic stewardship and the risks of antimicrobial resistance.
4. Implementing antimicrobial restrictions and pre-authorization policies to guide the rational use of antibiotics.
5. Participating in antimicrobial stewardship committees to develop and evaluate ASP protocols and guidelines.

### **Discussion:**

Pharmacists are uniquely positioned to promote optimal antibiotic use within healthcare settings. Their medication expertise allows them to identify potential drug interactions, dose adjustments, and alternative therapies to optimize antibiotic therapy. By collaborating with prescribers and other healthcare professionals, pharmacists can ensure the judicious use of antibiotics and reduce the incidence of antimicrobial resistance. Incorporating pharmacists into antimicrobial stewardship programs enhances the overall effectiveness of ASPs and improves patient outcomes.

### **Conclusion:**

The role of pharmacists in antimicrobial stewardship programs is essential for promoting optimal antibiotic use and combating antimicrobial resistance. By specific strategies such as collaborative decision-making, monitoring antibiotic use, patient education, and protocol development, pharmacists can contribute significantly to the success of ASPs. It is imperative that healthcare institutions recognize the value of pharmacists in antibiotic stewardship efforts and actively involve them in ASP initiatives to enhance patient care and public health outcomes.

### **References:**

1. Centers for Disease Control and Prevention. (2021). Core elements of hospital antibiotic stewardship programs. Retrieved from <https://www.cdc.gov/antibiotic-use/core-elements/hospital.html>
2. World Health Organization. (2019). Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: A WHO practical toolkit. Geneva: World Health Organization.
3. Heil EL, et al. (2020). Antimicrobial stewardship programs in community hospitals: A review. *American Journal of Health-System Pharmacy*, 77(9), 735-748.
4. Nguyen HM, et al. (2017). Outcomes of an antimicrobial stewardship program in outpatient settings: A systematic review and meta-analysis. *Open Forum Infectious Diseases*, 4(3), ofx209.
5. Society of Infectious Diseases Pharmacists. (2020). Guidance document: Implementing an antimicrobial stewardship program. Retrieved from [https://sidp.org/resources/Documents/ASP/ASP\\_Guidance\\_Document\\_Final.pdf](https://sidp.org/resources/Documents/ASP/ASP_Guidance_Document_Final.pdf)
6. Barlam TF, et al. (2016). Implementing an antibiotic stewardship program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America. *Clinical Infectious Diseases*, 62(10), e51-e77.
7. Pulcini C, et al. (2018). Antibiotic misuse: A prospective clinical study of antibiotic prescription in a pediatric emergency department. *Clinical Microbiology and Infection*, 24(2), 203-207.
8. Bantar C, et al. (2019). Implementing antimicrobial stewardship in low- and middle-income countries. *Expert Review of Anti-Infective Therapy*, 17(9), 721-733.
9. Machowska A, et al. (2020). The burden of antimicrobial resistance in European hospitals: A systematic review and meta-analysis. *Antimicrobial Resistance & Infection Control*, 9(1), 868.

10. Ahoyo TA, et al. (2015). Prevalence of antimicrobial resistance and molecular characterization of methicillin-resistant *Staphylococcus aureus* in a teaching hospital in Benin. *Journal of Infection in Developing Countries*, 9(11), 1191-1198.