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COMMENTARY

The essential role of pharmacists in antibiotic stewardship in outpatient care: an official position statement of the Society of Infectious Diseases Pharmacists

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ABSTRACT

Objectives: The objective of this position statement is to describe the essential role of pharmacists in antimicrobial stewardship in outpatient care.

Data sources: N/A.

Summary: The majority of antibiotic prescribing occurs in outpatient care settings highlighting the need for antibiotic stewardship in the community. Given their expertise on medication management, pharmacists are essential to any antibiotic stewardship effort.

Conclusion: As the regulations for antibiotic stewardship in outpatient settings continue to evolve and optimal stewardship strategies are defined, pharmacists must be leaders in the implementation of these programs.

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Antibiotic stewardship in the community is essential as the majority of antibiotic prescribing occurs in outpatient care settings.¹ It has been estimated that there were 842 antibiotic prescriptions per 1000 people in the United States in 2011.² Further, approximately 30% to 50% of all outpatient antibiotic prescriptions are unnecessary.^{3–9} In primary care settings, 1 in 3 antibiotic prescriptions are for inappropriate indications, primarily for upper respiratory tract infections that are caused predominantly by viruses.³ Data indicate that even when antibiotics are indicated, the correct antibiotic is only used about one-half of the time.¹⁰ Evidence is mounting that the widespread misuse of antibiotics in the outpatient setting has untoward effects, including resistance, superinfection, and medication-related side effects.^{11–20}

Antibiotic resistance among community-acquired pathogens has been increasingly reported in the literature and is a

concerning threat to the ongoing efficacy of therapies. The incidence of antibiotic resistance in the community has been reported to exceed acute care settings.¹¹ Multiple studies have associated the emergence of antibiotic resistance with outpatient antibiotic consumption.^{12–16} In addition, other unintended consequences of antibiotic use, such as superinfection, are also prevalent in the outpatient setting. For example, *Clostridium difficile* infection was traditionally considered to be a hospital-acquired pathogen, but currently the majority of cases occur in the community.^{17,18} Antibiotic-related adverse drug reactions are the most common reason for emergency department visits among children, and, overall, antibiotics account for 1 in 5 emergency department visits for adverse drug events.^{19,20}

Statement of need

In November 2016, the Centers for Disease Control and Prevention (CDC) released an antibiotic stewardship core elements document focused on the implementation and structure of outpatient antibiotic stewardship for ambulatory care and community settings.²¹ Although outpatient stewardship strategies have been suggested (e.g., audit-and-feedback, academic detailing, clinical decision support systems, provider communication training, delayed antibiotic

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Key Points**Background:**

- Antibiotic stewardship in the community is essential as the majority of antibiotic prescribing occurs in the community.
- The Centers for Disease Control and Prevention released an antibiotic stewardship core elements document that focuses on the implementation and structure of an outpatient antibiotic stewardship program, including many strategies well suited for pharmacists to lead.

Findings:

- The proven benefits of pharmacists in inpatient stewardship programs suggests that they will play an important role in outpatient stewardship services as well.
- Opportunities for pharmacist-led outpatient antibiotic stewardship initiatives are diverse and include disease prevention through vaccination, point-of-care testing, patient counseling, and health care professional education.
- Antibiotic stewardship education should be better integrated into pharmacy curricula to ensure graduates are prepared to serve as stewards regardless of practice setting.

prescriptions, point-of-care testing, and provider-focused public commitments), there remain limited data on the scalability and sustainability of such interventions in outpatient settings.^{22,23} Furthermore, the recommended initiatives focus on clinic systems and prescribers practicing at these sites and do not consider engaging community pharmacists and patients.

An important nuance associated with outpatient antibiotic stewardship is the intended scope of the interventions.²⁴ Outpatient stewardship can be designed to focus efforts within a clinic or health system, or they may have a more comprehensive community focus. Although the types of stewardship initiatives developed and team composition differ with each model, the goals of improving patient outcomes through optimizing appropriate antibiotic use are the same.

In contrast to inpatient antibiotic stewardship programs that can draw on physicians and pharmacists with specialized training in infectious diseases, clinicians with specialized expertise may not be readily available to clinics and communities seeking to engage in outpatient antibiotic stewardship. Therefore, to meet the national goal of decreasing inappropriate antibiotic use by 50% and overall outpatient antibiotic use by 30%, health care professionals in all outpatient settings will need to be engaged in antibiotic stewardship efforts.²⁵ Innovative strategies are needed to ensure patient and provider access to individuals, including pharmacists, with antibiotic stewardship expertise across all venues of care.²⁵

Recommendations

To address the existing need and anticipated requirements for antibiotic stewardship in the outpatient setting, pharmacists need to participate in the development of new and innovative methods of program delivery. Pharmacists are innovators in developing medication interventions and have an essential leadership role in developing and implementing these new stewardship models in outpatient care settings.

Outpatient antibiotic stewardship will emerge in various forms depending on the desired scope. One model may be similar to an inpatient model where the majority of stewardship personnel are employed by a single entity, such as a health system or clinic group. Stewardship personnel would serve as consultants providing education and expert support for stewardship efforts across a group of pharmacies or clinics. An alternate model consists of individuals with common interests in antibiotic stewardship collaborating across organizational lines, institutions, and/or health care settings (clinics, community pharmacies, public health) within a community. The ambulatory care model may serve as an umbrella antibiotic stewardship program where some members perform in direct patient care roles and others assemble stewardship resources, perform analytics, build information technology tools, and lead educational sessions. Furthermore, the patient-centered medical home model is becoming the new paradigm for providing primary care. Within these settings, pharmacists are expanding their presence beyond their traditional dispensing roles and demonstrating value in medication and chronic disease state management. Pharmacists practicing in these settings have access to electronic health records and are increasingly integrated in the patient care model.

Regardless of the model, because of the unique knowledge that pharmacists have regarding antimicrobial therapy, particularly the selection of nonantibiotic symptomatic therapy alternatives, pharmacokinetics and pharmacodynamics, adverse effects and drug–drug interactions, their role in outpatient stewardship will be essential.²⁶ As the regulations for antimicrobial stewardship in outpatient settings continue to evolve, the Society of Infectious Diseases Pharmacists (SIDP) thinks that pharmacists must be leaders in the implementation and evolution of these programs.

As leaders in antimicrobial stewardship and experts in medication management, pharmacists are required in any antibiotic stewardship effort. Pharmacists bring value in the development and implementation of stewardship strategies, conducting education and providing educational resources, and tracking, reporting, and assessment of the effectiveness of stewardship services. Pharmacists can also develop treatment algorithms that reflect site-specific formularies, local resistance patterns, and patient demographics. In addition, community pharmacists are widely accessible throughout communities and promote patient well-being by administering immunizations, managing chronic diseases, and assisting with healthy lifestyle changes.²⁷ Also, pharmacists have helped patients manage acute illnesses for decades. Patients routinely use pharmacists as a first source for information on symptom management and guidance as to when to seek additional care. Recently, a number of reports have been

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