

## Antimicrobial Resistance and Stewardship: Local Efforts on a Global Issue



### Introduction

Antibiotics revolutionized healthcare worldwide, but their continued application and overuse have resulted in infectious microorganisms becoming resistant to treatment. Diseases that were once remediable are becoming increasingly difficult to manage as treatment options become more challenging and expensive. Antimicrobial resistance—which includes resistance among bacteria, parasites, viruses, and fungi—is a growing threat to the health of the public.

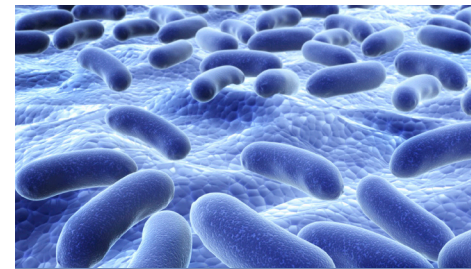
#### Antimicrobial stewardship

is the adoption of practices that promote responsible antimicrobial use to reduce the development of resistance and maximize the efficacy of antimicrobial treatments. Stewardship is most effective when leaders in diverse fields proactively work together on policies, programs, and activities.

### Role of Local Health Departments in Combatting Resistance

Local health departments (LHDs) protect their communities every day from infectious disease threats. They collect and analyze data to identify outbreaks, investigate reportable diseases, and prevent the spread of infections in community and healthcare settings. LHDs can facilitate coordination among agencies to improve antimicrobial stewardship and prevent the spread of antimicrobial-resistant organisms, particularly given the growing understanding that coordination between facilities will have greater impact on preventing antimicrobial resistance than independent, individual facility efforts.<sup>4</sup> LHDs across the United States are responding to antimicrobial resistance and promoting stewardship. Examples include the following:

- The Independence (MO) Health Department began participation in an antibiotic stewardship program in 2012 in response to an increase in antimicrobial-resistant infections in the community. The program sought to promote optimal antibiotic use and reduce instances of antibiotic-resistant disease by increasing communication and awareness in ways that required minimal effort by healthcare and childcare providers.<sup>5</sup>
- The Cook County (IL) Department of Public Health was recognized for its collaboration with the Illinois Department of Public Health and the Centers for Disease Control and Prevention in response to an outbreak of Carbapenem-resistant Enterobacteriaceae (CRE).<sup>6</sup>
- The Los Angeles County Department of Public Health increased reporting of certain antibiotic-resistant communicable diseases and partnered with the California Department of Public Health to ensure hospitals follow the statewide antibiotic stewardship legislation passed in 2008.<sup>7</sup>



### By the Numbers

- Antibiotic resistance causes 23,000 deaths and over 2 million infections each year.<sup>1</sup>
- One in 25 hospital patients is infected with at least one healthcare-associated infection.<sup>2</sup>
- Antibiotics, which are only effective in treating bacterial infections, are prescribed up to 50% of the time with the incorrect dosing or incorrect duration or are given when not needed.<sup>3</sup>
- *Clostridium difficile* (C. diff) is a common healthcare-associated infection resulting in 250,000 illnesses and 14,000 deaths each year; Carbapenem-resistant Enterobacteriaceae (CRE) are a family of germs responsible for at least 9,300 infections and 610 deaths annually.<sup>1</sup>

# [FACT SHEET]

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The National Association of County and City Health Officials (NACCHO) provides technical assistance to demonstration projects in three LHDs that exemplify how supporting local expertise and building capacity can effectively promote antimicrobial stewardship. These LHDs are increasing their subject matter expertise in healthcare-associated infections and infection control, convening local healthcare facilities and other stakeholders, conducting needs assessments, implementing educational campaigns, and developing resources to support local healthcare facilities in healthcare-associated infection prevention and outbreak response. Examples of these LHDs' activities include the following:

- The Philadelphia Department of Public Health, Division of Disease Control, hosted the Philadelphia Community Antimicrobial Stewardship Collaborative Meeting, bringing together professionals from healthcare facilities, non-profits, and government agencies to discuss determinants of antibiotic prescribing, practical strategies for applying antimicrobial use data, and local stewardship experiences in hospital settings.
- The DuPage County (IL) Health Department conducted needs assessments in 11 long-term care facilities and shared results with local hospitals, long-term care facilities, and other stakeholders to advance collaboration on this important health issue.
- The Florida Department of Health in Orange County in collaboration with the state's Healthcare-associated Infection Prevention Program and a local long-term care facility implemented a pilot project to reduce the unnecessary use of antibiotics for asymptomatic bacteriuria by implementing evidence-based practices of antibiotic stewardship.

## Antimicrobial Stewardship Opportunities

Although many LHDs are engaged in antimicrobial stewardship efforts, challenges and barriers persist, including lack of resources, limited involvement in reporting and data collection activities, and a need for increased coordination with state health departments. With adequate resources, more robust and interoperable public health information systems, and increased collaboration, LHDs can provide proactive leadership, coordination, and participation in antimicrobial resistance and stewardship efforts.

## Acknowledgments

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## References

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# NACCHO

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