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Antibiotic Stewardship in Long-Term Care Facilities

Why nursing homes and assisted-living facilities need to reduce antibiotic use—and how they can do it

Overview

The use and misuse of antibiotics are major contributors to the development of antibiotic-resistant bacteria. A significant proportion of antibiotics used in long-term care (LTC) facilities is inappropriate by drug selection (or choice), or altogether unnecessary, and places residents at risk for developing antibiotic-resistant infections.¹ Despite this, antibiotics are often prescribed inappropriately across health care settings, including LTC facilities, in the United States. Implementing programs to ensure that these drugs are prescribed only for indicated uses would slow the growth of resistance in this vulnerable population.

LTC facilities are residential institutions, including nursing homes and assisted-living facilities, that provide a wide range of health, personal, and supportive care to the elderly and disabled.² Close living quarters, frequent socializing, and group activities increase the chance that antibiotic-resistant infections can spread among residents.³ Antibiotic stewardship programs (ASPs), which aim to ensure that antibiotics are prescribed only when necessary, are critical for combating the public health threat posed by resistant pathogens.

Infections and antibiotic overuse in long-term care facilities

Approximately 15,000 LTC facilities in the United States provide care to an estimated 1.7 million people.⁴ They serve patients whose often complex medical needs leave them susceptible to illnesses that can lead to death, and to higher health care costs.⁵ Infection rates among LTC residents nationwide are estimated to be as high as 12 percent, with pneumonia and urinary tract infections being the most common.⁶

A 2003 study conducted in the U.S. and Canada showed that nearly 80 percent of LTC residents received at least one course of antibiotics over a 12-month period.⁷ Moreover, the study found that antibiotics are frequently prescribed in the absence of appropriate diagnostic exams.⁸ Such extensive use of antibiotics, exacerbated by high rates of infections, can lead to the emergence of antibiotic-resistant infections in LTC facilities.⁹ Antibiotic overuse can also increase the risk of adverse events such as allergic reactions, as well as *Clostridium difficile* infection, a potentially lethal diarrheal illness that is a growing threat in LTC facilities.¹⁰



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Antibiotic stewardship programs in long-term care facilities

While the number of hospitals with ASPs has gradually increased in the past decade, widespread implementation of these programs in LTC facilities has been limited, often because of difficulties in tailoring ASPs to meet the unique resource and staffing limitations of these institutions.¹¹ In an effort to bolster stewardship activities in these settings, the Centers for Medicare & Medicaid Services recently proposed a rule requiring all LTC facilities to implement an ASP that includes both antibiotic prescribing protocols and a system to monitor the use of these drugs.¹²

To further support the optimization of antibiotic use in LTC facilities, the Centers for Disease Control and Prevention released in September 2015 *The Core Elements of Antibiotic Stewardship for Nursing Homes*, a guide that outlines seven useful components for implementing successful ASPs in these settings (see box).¹³ These guidelines identify activities that can be carried out in a stepwise fashion to reduce inappropriate antibiotic use and prevent the growth of resistance, and they also tailor suggestions to meet the resource and funding challenges prevalent at many LTC facilities. With this guidance, every LTC facility should select one or two initial stewardship activities to implement and should expand strategies and policies over time to ensure the improvement of antibiotic use and the protection of residents.

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Summary of *The Core Elements of Antibiotic Stewardship for Nursing Homes*

- **Leadership commitment**
Demonstrate support and commitment to safe and appropriate antibiotic use in your facility.
- **Accountability**
Identify physician, nursing, and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility.
- **Drug expertise**
Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility.
- **Action**
Implement at least one policy or practice to improve antibiotic use.
- **Tracking**
Monitor at least one process measure of antibiotic use and at least one outcome from antibiotic use in your facility.
- **Reporting**
Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff, and other relevant staff.
- **Education**
Provide resources to clinicians, nursing staff, residents, and families about antibiotic resistance and opportunities for improving antibiotic use.

Source: Reproduced from *The Core Elements of Antibiotic Stewardship for Nursing Homes* published by the Centers for Disease Control and Prevention

Endnotes

- 1 Lindsay E. Nicolle et al., "Antimicrobial Use in Long-Term Care Facilities," *Infection Control and Hospital Epidemiology* 21, no. 8 (2000): 537-45, <http://dx.doi.org/10.1086/501798>.
- 2 Lauren Harris-Kojetin et al., "Long-Term Care Services in the United States: 2013 Overview," *Vital and Health Statistics* 3 no. 37 (2013): 1-107, http://www.cdc.gov/nchs/data/nsltcp/long_term_care_services_2013.pdf.
- 3 Phillip W. Smith et al., "SHEA/APIC Guideline: Infection Prevention and Control in the Long-Term Care Facility," *American Journal of Infection Control* 36, no. 7 (2008): 504-35, doi:10.1016/j.ajic.2008.06.001.
- 4 Harris-Kojetin et al., "Long-Term Care Services in the United States," 1-107.
- 5 Smith et al., "SHEA/APIC Guideline," 504-35.
- 6 Lisa Dwyer et al., "Infections in Long-Term Care Populations in the United States," *Journal of the American Geriatrics Society* 61, no. 3 (2013): 341-49, <http://dx.doi.org/10.1111/jgs.12153>.
- 7 Mark B. Loeb et al., "Risk Factors for Resistance to Antimicrobial Agents Among Nursing Home Residents," *American Journal of Epidemiology* 157, no. 1 (2003): 40-47, <http://dx.doi.org/10.1093/aje/kwf173>.

- 8 Mark Loeb et al., "Development of Minimum Criteria for the Initiation of Antibiotics in Residents of Long-Term-Care Facilities: Results of a Consensus Conference," *Infection Control and Hospital Epidemiology* 22, no. 2 (2001): 120-24, doi:<http://dx.doi.org/10.1086/501875>; Ana Montoya and Lona Mody, "Common Infections in Nursing Homes: A Review of Current Issues and Challenges," *Aging Health* 7, no. 6 (2011): 889-99, <http://dx.doi.org/10.2217/AHE.11.80>; Montoya and Mody, "Common Infections in Nursing Homes," 889-99.
- 9 Ibid.
- 10 U.S. Centers for Disease Control and Prevention, *Antibiotic Resistance Threats in the United States*, 2013, <http://www.cdc.gov/drugresistance/pdf/ar-threats-2013-508.pdf>; Teena Chopra and Ellie J.C. Goldstein, "Clostridium difficile Infection in Long-Term Care Facilities: A Call to Action for Antimicrobial Stewardship," *Clinical Infectious Diseases* 60, no. S2 (2015): S72-S76, <http://dx.doi.org/10.1093/cid/civ053>.
- 11 Philip W. Smith et al., "Antibiotic Stewardship Programs in Long-Term Care Facilities," *Annals of Long-Term Care* 19 no. 4 (2011): 1-8, <http://www.annalsoflongtermcare.com/article/antibiotic-stewardship-programs-long-term-care-facilities>; Susan M. Rhee and Nimalie D. Stone, "Antimicrobial Stewardship in Long-Term Care Facilities," *Infectious Disease Clinics of North America* 28, no. 2 (2014): 237-46, <http://dx.doi.org/10.1016/j.idc.2014.01.001>.
- 12 Federal Register, "Medicare and Medicaid Programs: Reform of Requirements for Long-Term Care Facilities," accessed Oct. 15, 2015, <https://www.federalregister.gov/articles/2015/07/16/2015-17207/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities>.
- 13 U.S. Centers for Disease Control and Prevention, *The Core Elements of Antibiotic Stewardship for Nursing Homes* (2015), <http://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship.pdf>.

For further information, please visit:

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