

Improving Antibiotic Use

Protecting Patients and Combating Antimicrobial Resistance



Antimicrobial resistance—when germs like bacteria and fungi develop the ability to defeat the drugs designed to kill them—is an urgent public health threat. In the United States, more than three million antimicrobial-resistant infections and *Clostridioides difficile* (*C. diff*) infections (often associated with antibiotic use) occur each year, leading to nearly 50,000 deaths.¹

Improving the use of antibiotics, also known as **antibiotic stewardship**, is a core strategy to ensure patient safety and slow the development and spread of antimicrobial resistance in hospitals and communities.

The Centers for Disease Control and Prevention (CDC) leads U.S. Government public health efforts to protect the health of Americans by improving antibiotic use and strengthening antibiotic stewardship programs. **These investments have resulted in:**



96% of U.S. hospitals and 82% of long-term care facilities have antibiotic stewardship programs that meet all seven CDC Core Elements of Antibiotic Stewardship as of 2023.^{2,3}



14% reduction in how often antibiotics were dispensed by community pharmacies from 2011 to 2023.^{3,4}



8% reduction in how often antibiotics were dispensed in long-term care facilities from 2013 and 2021.⁴

For nearly two decades, CDC has invested in a strong national infrastructure that empowers every state and more than a dozen territorial and local health departments to combat antimicrobial resistance. Health departments work every day to detect, respond to, and control outbreaks and improve antibiotic use. CDC provides millions of dollars annually to health departments that allow expanded antibiotic stewardship expertise and public engagement on the importance of improving antibiotic use.

From August 2023 to July 2024, public health antibiotic stewardship experts in 57 health departments collaborated with:

77,737

Healthcare Professionals

(e.g., doctors, pharmacists, advanced practice providers, and nurses)

11,320

Healthcare Facilities

(e.g., hospitals, nursing homes, and outpatient facilities)

1,240

Partners

(e.g., healthcare systems, academic institutions, and professional organizations)

Antibiotic Stewardship in Action

Health Departments Advancing Antibiotic Stewardship

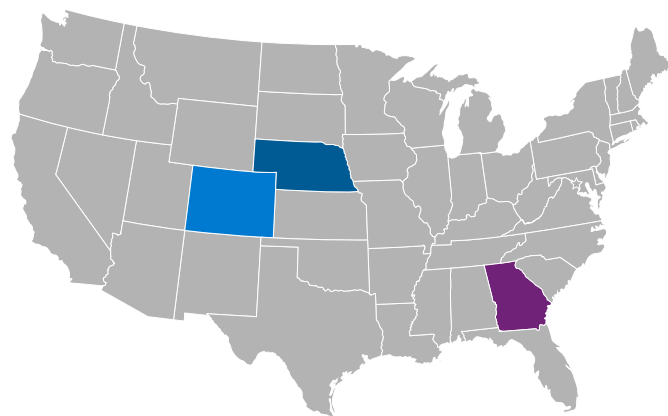
Public health antibiotic stewardship experts improve antibiotic use, protect patients, and combat antimicrobial resistance. These are examples of state health departments improving antibiotic prescribing for patients in their communities.

Improving Antibiotic Use in Nebraska

The **Nebraska Department of Health and Human Services** antibiotic stewardship experts and the Nebraska Hospital Association increased the number of hospitals reporting to the National Healthcare Safety Network (NHSN) Antimicrobial Use and Resistance (AUR) Module.⁵ Reporting to the NHSN AUR Module helps hospitals monitor and improve their antibiotic use. Experts facilitated educational webinars and provided 48 hospitals with technical assistance to support reporting. This led to an increase in the percentage of facilities in Nebraska tracking antibiotic use as part of a national effort using the NHSN AUR module from 24% in 2022 to 51% in 2024. Statewide public health collaboration in Nebraska helped to strengthen hospital antibiotic stewardship programs.

Improving Antibiotic Use in Colorado

In 2021, the **Colorado Department of Public Health and Environment** partnered with Children's Hospital Colorado to launch the Colorado Antimicrobial Stewardship Endeavor (CASE). CASE brings together physicians, pharmacists, and epidemiologists to support Colorado hospitals in implementing evidence-based actions, tracking antibiotic use, and meeting state and national standards. CASE increased its outreach from 17 hospitals in 2021 to 42 hospitals in 2024. From 2018 to 2022, CASE also supported optimal antibiotic use by increasing the uptake of the Core Elements of Antibiotic Stewardship from 88% to 100% among acute care hospitals and from 69% to 83% among critical access hospitals.



Improving Antibiotic Use in Georgia

The **Georgia Department of Public Health**, in partnership with a Federally Qualified Health Center (FQHC) network, improved antibiotic use in rural areas where there are few infectious disease experts to lead stewardship efforts. Public health stewardship experts provided treatment guidelines for pharyngitis (infections that cause sore throat, such as strep throat), educational webinars, and feedback data for individual clinicians. The FQHC network implemented an alert in the electronic medical record system to remind clinicians that bronchitis (chest colds) should not be treated with antibiotics. This resulted in fewer unnecessary antibiotic prescriptions for pharyngitis and bronchitis and increased prescribing of the right antibiotics for strep throat across the network. The health department is expanding the initiative to dental clinics and planning more collaborations.

Additional Resources:

1. Antibiotic Resistance Threats in the United States, 2019: bit.ly/45mOzu1
2. Core Elements of Antibiotic Stewardship: bit.ly/3GNnuXL
3. Data on antibiotic stewardship and antibiotic use in the United States: bit.ly/4mjd3tX
4. Antibiotic prescribing in the United States: bit.ly/41i08QP
5. National Healthcare Safety Network Antimicrobial Use and Resistance Module: bit.ly/3H6ZYVB



Learn more about the Core Elements of Antibiotic Stewardship for Health Departments: bit.ly/45JUCJp



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