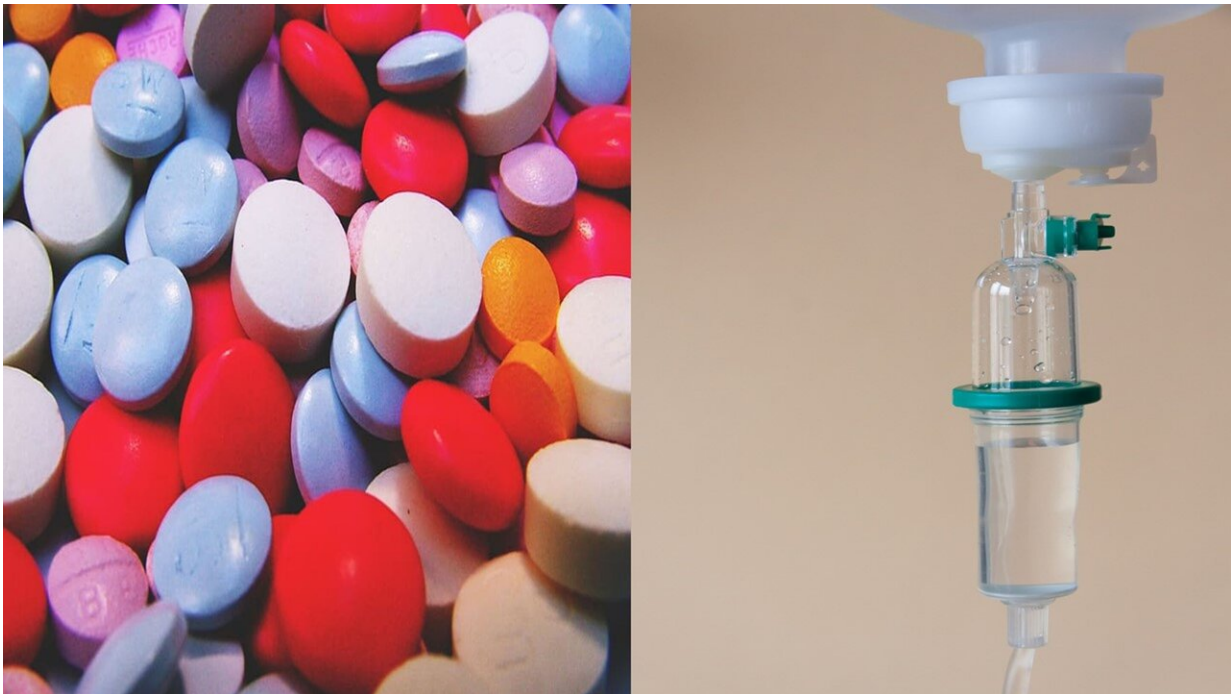


Patient safety program reduces unnecessary antibiotic use in long-term care facilities

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A new study by Johns Hopkins Medicine and NORC at the University of Chicago showed that long-term care facilities following antibiotic stewardship programs—ensuring that residents only get oral and intravenous antibiotics when absolutely required—help reduce outbreaks of bacterial infections and prevent the emergence of drug-resistant microbes. Credit: Public domain images

In early 2021, researchers at Johns Hopkins Medicine and NORC at the University of Chicago showed that the Agency for Healthcare Research

and Quality (AHRQ) Safety Program for Improving Antibiotic Use—a comprehensive system they developed to assist health care institutions with establishing and operating antibiotic stewardship programs (ASPs)—successfully helped more than 400 U.S. hospitals ensure that patients only received antibiotics when needed, and then, only in the correct amounts and for the prescribed dosage period.

The [program](#) enabled front-line clinicians in the hospitals to make informed and responsible decisions about prescribing [antibiotics](#), reducing both the emergence of drug-resistant bacterial strains and outbreaks of hospital-acquired infections—primarily *Clostridioides difficile*, a pathogen that causes severe diarrhea and colitis, and commonly attacks people taking antibiotics in whom the medication also has killed protective gut bacteria.

Now, the organizations have once again teamed to demonstrate the AHRQ safety program is effective in a different type of health care setting, one with a population especially susceptible to serious outcomes from unnecessary antibiotic use—the residents of long-term care (LTC) facilities, including nursing homes and assisted living facilities.

The findings from the research team's year-long evaluation of the program in 439 LTCs across the nation are published today in *JAMA Network Open*.

"It can be incredibly challenging to implement effective stewardship programs in the long-term care setting because of high staff turnover rates and [limited resources](#); however, it's very important for the older adults living there who can have severe side effects if given unnecessary antibiotics," says study lead author Morgan Katz, M.D., M.H.S., assistant professor of medicine at the Johns Hopkins University School of Medicine. "Reframing antibiotic use as a patient safety issue and incorporating direct care staff in the prescribing process can make these

programs more sustainable."

The AHRQ safety program used in the study consisted of 15 webinars—each repeated three times, as well as recorded for online viewing—over a 12-month time span (December 2018 to November 2019). The webinars focused on how to establish and maintain an antibiotic stewardship program at an LTC, methods for improving teamwork and communication, and best practices for diagnosing and managing infections without overusing antibiotics. Participants in the program received tools to incorporate stewardship principles into routine decision-making, underscoring the importance of communication about antibiotic prescribing.

The 439 LTCs that completed the full year of the AHRQ safety program—out of 523 that started it—saw significant decreases per 1,000 resident days for both the number of antibiotic treatment courses started and for the length of therapy using fluoroquinolones and other orally given antibiotics. The researchers also found that LTCs following the safety program significantly reduced the number of urine cultures performed per 1,000 resident days. This is an important point, Katz says, because routine urine tests—without clinical signs of disease to warrant them—may be positive for harmless or protective bacteria and lead to unnecessary antibiotic therapy.

"Particularly worth noting was our finding that improvements in antibiotic use were more pronounced in LTCs with greater engagement in the ASP, suggesting that for antibiotic stewardship, those who do the work, get the results," Katz says.

Katz adds that the researchers also found there was a greater reduction in orally administered antibiotics compared with those given intravenously. "This is important because oral antibiotics are used more frequently in the LTC setting, and these medications, particularly

fluoroquinolones—which saw the most significant reduction—were a target of the safety program," Katz says.

The researchers say more data are needed to evaluate the sustainability of these interventions and their long-term effect on antibiotic use, health outcomes for residents, and staff and resident satisfaction.

More information: Morgan J. Katz et al, Implementation of an Antibiotic Stewardship Program in Long-term Care Facilities Across the US, *JAMA Network Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.0181](https://doi.org/10.1001/jamanetworkopen.2022.0181)

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