



Antibiotic Stewardship in Long-Term Care Facilities

NHSN LTC Training 2024

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July 23, 2024

Speaker Disclosures

- The speakers have no financial relationship(s) or disclosures.
- The conclusions in this talk are the speakers' and do not necessarily represent the Centers for Disease Control and Prevention.

Learning Objectives

- **By the end of the session, participants will be able to:**
 1. Identify antibiotic stewardship priorities in long-term care settings.
 2. Discuss ways to track the Core Elements of antibiotic stewardship implementation using the annual survey.
 3. Review CDC's [Antibiotic Use & Stewardship | A.R. & Patient Safety Portal \(cdc.gov\)](#) to find data on Core Elements uptake across long-term care facilities.

Antibiotics are frequently prescribed in LTC, often inappropriately.

- An estimated **50-70%** of LTC residents will be prescribed one or more courses of systemic antibiotics in a year.^{1,2}
- In nursing homes, small studies have shown an estimated **40-75%** of antibiotic prescribing is inappropriate.^{2,3}



UP TO **70%** OF NURSING HOME RESIDENTS
RECEIVED **one or more** COURSES
OF SYSTEMIC ANTIBIOTICS IN A YEAR

1. Kabbani et al. Antimicrob Steward Healthc Epidemiol. 2021 Dec 7;1(1):e58.
2. Lim et al. Clin Interv Aging. 2014 Jan 13;9:165-77.
3. Nicolle et al. Infect Control Hosp Epidemiol. 2000 Aug;21(8):537-45.

Antibiotic use (both necessary and unnecessary) can cause harm.

- Antibiotic use can lead to adverse events and allergic reactions.¹⁻⁴

Common side effects of antibiotics include:



Rash



Dizziness



Nausea

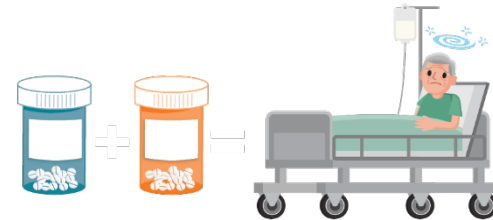


Yeast Infection



Diarrhea

- **Polypharmacy** is associated with an increased risk of adverse drug events in older adults.^{1,2}
 - Antibiotics contribute to clinically significant drug interactions.^{3,4}
 - In a cohort study at two nursing homes, **13%** of adverse drug events were secondary to antibiotic use.¹



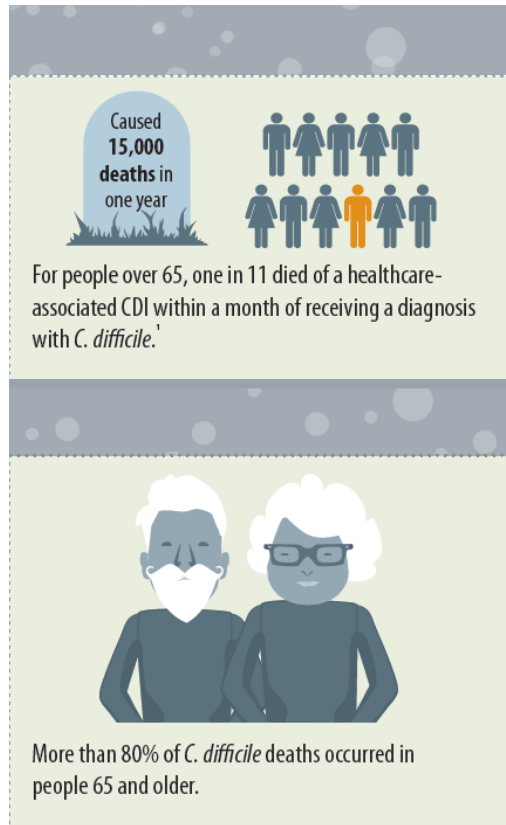
1. Gurwitz et al. Am J Med. 2005 Mar;118(3):251-8.

2. Tamura et al, Clin Geriatr Med. 2012 May;28(2):217-36.

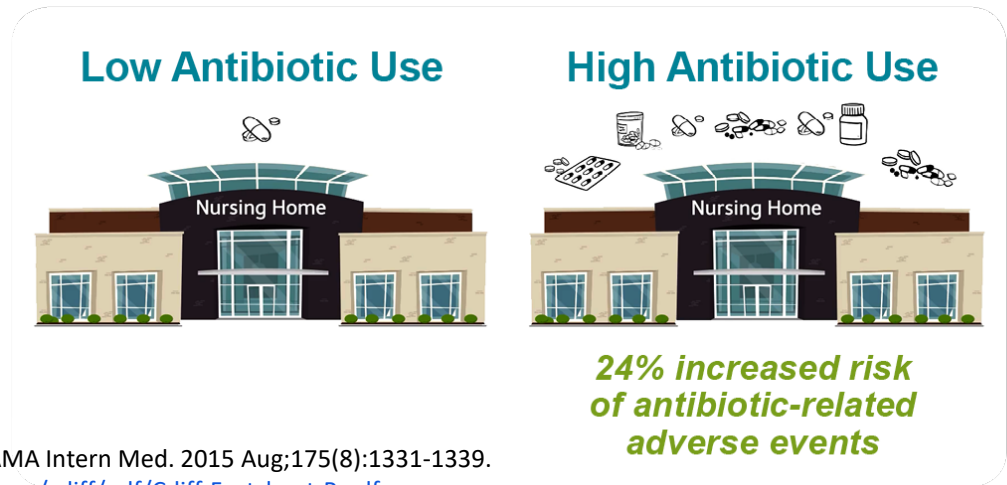
3. Field et al, Arch Intern Med. 2001 Jul 9;161(13):1629-34.

4. Corsonello et al, Clin Microbiol Infect. 2015 Jan;21(1):20-6.

Risk of *Clostridioides difficile*-related morbidity and mortality is highest in older adults.



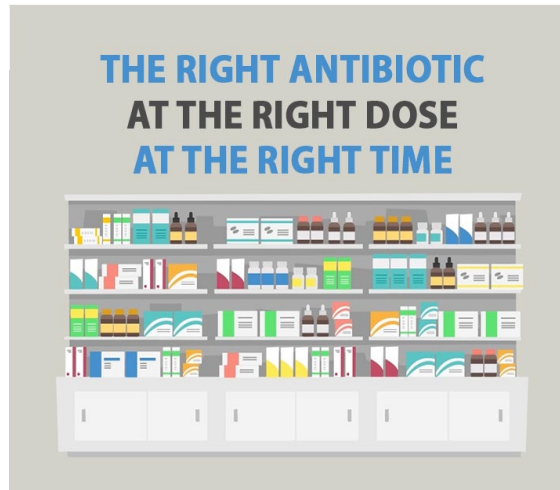
- A cohort study of nursing homes in Canada showed that diarrhea, gastroenteritis and *C. difficile* infection were the most common antibiotic-related adverse events.



Daneman et al. JAMA Intern Med. 2015 Aug;175(8):1331-1339.
<https://www.cdc.gov/cdiff/pdf/Cdiff-Factsheet-P.pdf>

What is Antibiotic Stewardship?

- Antibiotic stewardship is a set of commitments and actions designed to **optimize** the treatment of infections while **reducing** the adverse events associated with antibiotic use.
- Antibiotic stewardship is fundamentally about resident **safety** and **high-quality** healthcare.



CMS Requirements for Antibiotic Stewardship

- CMS issued a final rule requiring nursing homes to have antibiotic stewardship integrated within infection prevention and control programs.
 - **Develop and implement protocols** to optimize the treatment of infections by ensuring that residents who require an antibiotic are prescribed the appropriate antibiotic
 - **Develop, promote, and implement** a facility-wide system to monitor the use of antibiotics

The Core Elements of Antibiotic Stewardship for Nursing Homes

The CMS Antibiotic Stewardship Interpretive Guidance includes the CDC's Core Elements of Antibiotic Stewardship.

- Leadership Commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education



NHSN LTCF Component Annual Facility Survey

Antibiotic Stewardship Survey Questions

The image displays three overlapping screenshots of the NHSN Long Term Care Facility Component Annual Facility Survey form. The top-most screenshot shows the 'Facility Characteristics' section, including questions about ownership (for-profit, not-for-profit, government, or Veterans Affairs), accreditation (Dual Medicare/Medicaid, Medicare only, Medicaid only, or State only), and affiliation (Independent, free-standing, or independent, continuing care retirement community). It also includes questions about the facility's primary service types and the number of residents. The middle screenshot shows the 'Medication' section, asking about the number of short-stay and long-stay residents, their average lengths of stay, and the total number of new admissions. It also includes a table for 'Primary Service Type' with columns for 'Service provided?' and 'Number of residents'. The bottom-most screenshot shows the 'Infection Prevention' section, asking about the facility's infection prevention program, whether it has an infection preventionist, and whether it has an antibiotic stewardship program. It also includes questions about the facility's antibiotic stewardship program and whether it has an antibiotic stewardship committee.

Leadership Commitment: Demonstrate support and commitment to safe and appropriate antibiotic use.

*17. Does your facility have a written statement of support from leadership that supports efforts to improve antimicrobial use? Yes No

*18. Are antimicrobial use and resistance data reviewed by leadership in quality assurance/performance improvement committee meetings? Yes No



Core Elements for Antibiotic Stewardship in Nursing Homes

Creating a Culture to Improve Antibiotic Use in Nursing Homes



Our Commitment to Antibiotic Stewardship

Antibiotics save lives, but are frequently prescribed unnecessarily. Harms from antibiotic overuse can be significant, especially for frail older adults. Potential harms include adverse drug events, drug interactions, and antibiotic-resistant and *Clostridioides difficile* infections.

As part of our continuing commitment to provide the best quality care to our residents, we are dedicated to improving antibiotic use through antibiotic stewardship implementation. Antibiotic stewardship refers to a set of commitments and activities designed to "optimize the treatment of infections while reducing the adverse events associated with antibiotic use."

We are committed to improving antibiotic prescribing practices. We will provide staff and resources to support antibiotic stewardship implementation. We are confident that with the support of front-line staff, prescribing clinicians, and residents and families, we will continue to provide residents with the best quality care by improving antibiotic use, and protecting them from the unintended harms of inappropriate antibiotic use.

Sincerely,

To learn more about appropriate antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use



1. <https://www.cdc.gov/antibiotic-use/core-elements/pdfs/Stewardship-Leadership-Commitment-Letter-508.pdf>
2. <https://www.cdc.gov/antibiotic-use/core-elements/pdfs/Stewardship-Commitment-Poster-508.pdf>

Accountability: Identifying Individuals Who Will Lead Antibiotic Stewardship Implementation.

- It is critical to identify a local “champion” who will lead the implementation of antibiotic stewardship actions.¹

*10. Are there one or more individuals responsible for the impact of activities to improve use of antimicrobials at your facility? Yes No

If Yes, what is the position of the individual(s)? (select all that apply)

<input type="checkbox"/> Medical director	<input type="checkbox"/> Director of Nursing	<input type="checkbox"/> Infection Preventionist
<input type="checkbox"/> Consultant Pharmacist	<input type="checkbox"/> Other (please specify): _____	

- IPC coordinators have key expertise and data to improve antibiotic use. Training, dedicated time, and resources can help IPC program coordinators support stewardship activities.

Drug Expertise: Support for Antibiotic Stewardship Implementation.

- Establishing access to individuals with antibiotic expertise

*19. Does your facility have access to individual(s) with antimicrobial stewardship expertise (e.g., consultant pharmacist trained in antimicrobial stewardship, stewardship team at referral hospital, external infectious disease/stewardship consultant)?

Yes No

- Engage consultant pharmacists

- Review AU data and can support tracking of AU, ensure documentation of prescribing elements, limit antibiotic duration, improve prescribing practices (protocol development/review, education, ASB treatment, prophylaxis, fluoroquinolones)

5 WAYS CONSULTANT PHARMACISTS CAN BE ANTIBIOTICS AWARE

- 1. Ensure Documentation of the Indication for Every Antibiotic Order**
 - Documentation of the indication for every antibiotic order can inform antibiotic selection and help with assessing the appropriate duration during an antibiotic course process.
 - Meet the provider if the indication for an antibiotic order is not documented.
- 2. Use the Shortest Effective Antibiotic Duration**
 - Guidelines for treatment duration are available for common infectious diseases both as outpatients, which include (UTI), and even for oral disease therapy.
 - Contact the provider if the length of antibiotic therapy exceeds the recommended duration.
- 3. Improve Fluoroquinolone Prescribing Practices**
 - There is a high level of concern about the use of fluoroquinolones (FQs) for the treatment of urinary tract infections (UTIs) because of their potential for serious side effects, such as tendonitis and tendon rupture.
 - When possible, discuss alternatives to fluoroquinolones with providers.
- 4. Avoid Treatment of Asymptomatic Bacteriuria**
 - "Asymptomatic bacteriuria" is defined as the presence of bacteria in the urine without any signs or symptoms.
 - Advise on the use of prophylaxis that helps providers evaluate UTI signs and symptoms before starting for UTI and starting antibiotics.
- 5. Limit the Use of Prolonged Antibiotic Prophylaxis for UTI**
 - There is a high level of concern regarding prolonged antibiotic use for prevention of recurrent UTIs.
 - Consider the use of prophylaxis only when absolutely necessary and for the shortest duration possible.
 - Advise on the use of prophylaxis that helps providers evaluate UTI signs and symptoms before starting for UTI and starting antibiotics.

BE AN ANTIBIOTICS AWARE PHARMACIST

ABC

www.abcpharmacists.org

1. Ashraf et al, J Am Med Dir Assoc. 2021 Jan;22(1):6-8. <https://pubmed.ncbi.nlm.nih.gov/33271122/>

Action: Implement at least one policy or practice to improve antibiotic use.

*11. Does your facility have a policy that requires prescribers to document an indication for all antimicrobials in the medical record or during order entry? Yes No

*12. Does your facility provide treatment recommendations for common infections based on national guidelines to assist with antimicrobial decision making ? Yes No

*13. Is there a formal procedure for performing a follow-up assessment 2-3 days after a new antimicrobial start to determine whether the antimicrobial is still indicated and appropriate (e.g. antibiotic time out)? Yes No

*14. Is there a formal procedure for reviewing courses of antimicrobial therapy and communicating with prescribers on antimicrobial selection, dosing, or duration of therapy (i.e., audit and feedback) at your facility? Yes No

Action: Implementing Antibiotic Prescribing Policies to Improve Antibiotic Use.

- Antibiotic prescribing and use policies:

*11. Does your facility have a policy that requires prescribers to document an indication for all antimicrobials in the medical record or during order entry?

Yes No

If Yes, has adherence to the policy to document an indication been monitored?

Yes No





Journal of the American Medical Directors
Association
Volume 18, Issue 11, 1 November 2017, Pages 913-920

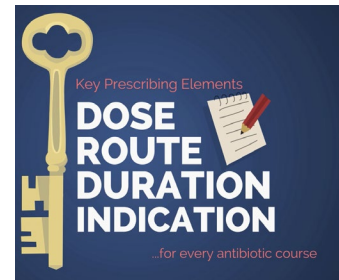


Special Article

Template for an Antibiotic Stewardship Policy for Post-Acute and Long-Term Care Settings

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Infection Advisory Committee for AMDA—The Society of Post-Acute and Long-Term Care
Medicine



Action: Implementing Antibiotic Prescribing Policies to Improve Antibiotic Use.

- Antibiotic prescribing and use policies:

*12. Does your facility provide treatment recommendations for common infections based on national guidelines to assist with antimicrobial decision making? Yes No

If Yes, has adherence to facility-specific treatment recommendations been monitored? Yes No



1. Rowe et al. Infect Control Hosp Epidemiol. 2022 Apr;43(4):417-426.
2. Learn Best Practices: <https://www.ahrq.gov/antibiotic-use/long-term-care/best-practices/index.html>
3. Guidelines for Treatment of Common Infections: <https://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes>
4. Loeb et al. Infection Control & Hospital Epidemiology , Volume 22 , Issue 2 , February 2001 , pp. 120 - 124

Action: Implementing Antibiotic Prescribing Policies to Improve Antibiotic Use.

- Antibiotic prescribing and use policies:

*14. Is there a formal procedure for reviewing courses of antimicrobial therapy and communicating with prescribers on antimicrobial selection, dosing, or duration of therapy (i.e., audit and feedback) at your facility? Yes No



Tracking and Reporting of process and measures of antibiotic use

- *15. Does your facility have a system for tracking antimicrobial use?
If yes, what is the source of the antimicrobial use report provided? Yes No
- Pharmacy services Electronic Health Records
 Manual reporting (i.e., facility infection control log) Other (please specify): _____
- *11. Does your facility have a policy that requires prescribers to document an indication for all antimicrobials in the medical record or during order entry? Yes No
- If Yes, has adherence to the policy to document an indication been monitored? Yes No
- *12. Does your facility provide treatment recommendations for common infections based on national guidelines to assist with antimicrobial decision making ? Yes No
- If Yes, has adherence to facility-specific treatment recommendations been monitored? Yes No
- *14. Is there a formal procedure for reviewing courses of antimicrobial therapy and communicating with prescribers on antimicrobial selection, dosing, or duration of therapy (i.e., audit and feedback) at your facility? Yes No

Tracking Antibiotic Use of process and measures of antibiotic use

- Antibiotic use can be tracked using:

*15. Does your facility have a system for tracking antimicrobial use?

If yes, what is the source of the antimicrobial use report provided?

Yes No

Pharmacy services

Electronic Health Records

Manual reporting (i.e., facility infection control log)

Other (please specify): _____

EHR Access in LTCFs – Results from NHSN Annual Survey

- In 2022, 98% of LTCFs reported having access to an electronic health record (EHR).
 - Majority had electronic medication orders or eMAR capabilities; only 28% reported using the EHR for AU tracking.
- In 2022, 99% of LTCFs (N=4,898) respondents indicated having a system for tracking antimicrobial use:
 - Manual AU tracking (48%)
 - EHR (31%)
 - Pharmacy services (25%)
- Increased EHR implementation can improve quality of care in LTCFs and serve as a useful tool for healthcare providers.

Tracking: Antibiotic Use Measures

- Describe baseline **prescribing rates** and track changes over time.
- Track the rate of total or specific **antimicrobial courses** to assess the impact of an intervention to prevent antibiotic initiation (e.g., avoiding testing and treatment of asymptomatic bacteriuria).
- Assess antibiotic **course durations** and determine proportion of antibiotic courses used for prophylaxis.
- Track **antibiotic classes** that may be a target for improvement (e.g., fluoroquinolones) or agents used for the treatment of specific infections (e.g., *Clostridioides difficile*).
- Identify the **site of initiation** to allow facilities to tailor their stewardship interventions by engaging prescribers or referring hospitals.

Long-term Care – Antimicrobial Use Module

- Electronic Data Reporting
 - Reduce time on data entry
 - **No manual reporting**
- Person level
- Orders/administrations

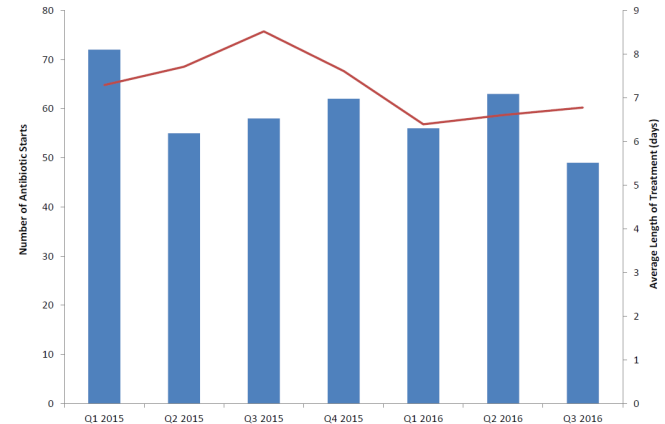


Long-term care Antimicrobial Use Module

- Data readily available to nursing homes
 - Quality Assurance and Performance Improvement (QAPI)
 - Evaluate antibiotic stewardship programs
- Potential Metrics
 - Antibiotic Courses and length of courses
 - Days of therapy

Long Term Care – Antimicrobial Use Module Timeline

- Anticipated development Spring 2025
- Pilot phase
- Development of dashboards



Reporting: Providing feedback on prescribing practices and compliance with facility antibiotic use protocols

- Reporting can motivate staff and sustain practice changes.
 - Provider-specific feedback and peer comparison may be an effective way to change prescribing behavior as demonstrated in the outpatient setting.
 - Audit and feedback was associated with a significantly greater decline in prolonged antibiotics in LTC settings (adjusted difference -2.65%)
 - Resulted in 335,912 **fewer days of treatment**,
 - No significant difference in antibiotic initiation

Summary: Jan 01, 2018 - Mar 31, 2018

What are my overall prescribing rates?

	My Rate (unadjusted)	How does my prescribing compare to my peers?
Antibiotic Prescribing	26.7%	My prescribing rate is similar to many of my peers (between the 25th & 60th percentile)
Antibiotic Prolonged Treatment (more than 7 days)	9.6%	My prescribing rate is lower than at least 75 percent of my peers
Antipsychotic Prescribing for dementia without psychosis	15.4%	My prescribing rate is similar to many of my peers (between the 25th & 60th percentile)
Benzodiazepine Prescribing	24.4%	My prescribing rate is higher than 60 percent of my peers

For indicator-specific inclusion and exclusion criteria, please see detailed indicator pages.

Who are my residents?

Total residents	Mean age (years)	Female	New residents
200	82	70%	16%

Education and Improving Communication with Residents and Families.

- Provide ongoing education to residents and families to set expectations and address concerns about antibiotic prescribing.

*16. Has your facility provided education to clinicians and other facility staff on improving antimicrobial use in the past 12 months?

Yes No

Why does taking antibiotics lead to antibiotic resistance?
 All drugs can have side effects, but can cause side effects and contribute to the development of antibiotic resistance. Antibiotic resistance is one of the most urgent threats to the world's health.

Always remember:

1. Antibiotic resistance does not mean the body is becoming resistant to antibiotics. It means bacteria are developing the ability to defeat the antibiotics designed to kill them.
2. When bacteria become resistant, antibiotics cannot fight them, and the bacteria multiply.
3. Some resistant bacteria can be harder to treat and can spread to other residents in the nursing home.

Up to 70% of residents in a nursing home receive one or more courses of antibiotics each year.

What if I have questions about antibiotics?
 Talk to your healthcare professional if you have any questions about your antibiotics, such as:

- What infection does the antibiotic treat and do you know I have that infection?
- How long do I need to take the antibiotic?
- What are the potential side effects from the antibiotic?
- Could any of my other medications interact with the antibiotic?
- How will you know that the antibiotic is working for my infection?

Improving the way healthcare professionals prescribe antibiotics, and the way we take antibiotics, helps keep us healthy now, helps fight antibiotic resistance, and ensures that these life-saving drugs will be available for future generations.

40%-75% of antibiotics prescribed in nursing homes may be unnecessary or inappropriate.

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use or call 800-CDC-INFO.

BE ANTIBIOTICS AWARE
 PREVENT RESISTANCE

NURSING HOME HEALTHCARE PROFESSIONALS: BE ANTIBIOTICS AWARE

Effective Communication with Residents and Families

50-70% of nursing home residents are prescribed an antibiotic each year.¹

25-75% of antibiotic prescriptions in nursing homes are unnecessary.²

Effective communication with residents and their families helps to address treatment expectations and protect the resident at the center of care. Nursing home healthcare professionals can help reduce inappropriate antibiotic use by offering the 4-part communication strategy (shown below). Communication skills training has been shown to significantly reduce unnecessary antibiotic prescriptions in residential settings.³

Two barriers to using the communication strategy to decrease unnecessary prescribing for asymptomatic bacteremia and respiratory infections are described on the pages that follow.

Healthcare professionals can use the 4-part Communication Strategy¹ to discuss appropriate antibiotic use when there is a change in the resident's condition.

1. **Review findings:**
 Review relevant information such as symptoms or physical examination findings that support the decision about appropriate testing and antibiotic use.
2. **Offer a clear diagnosis:**
 Deliver a clear diagnosis that explains the change in the resident's condition.
3. **Provide a FIRST negative, THEN positive treatment recommendation:**
 Offer an antibiotic, if not contraindicated, FIRST, provide a negative treatment recommendation, THEN "take out" the need for antibiotics. THEN provide a positive recommendation for further evaluation, management, and medication.
4. **Discuss a contingency plan:**
 Outline a contingency plan that details what actions will be taken if the resident does not improve, or if their condition worsens.

The strategies are available at www.cdc.gov/antibiotic-use and also in the communication strategy development guide and an EASIL poster to guide the resident and healthcare professional in the facility. Access the original version of the communication strategy development guide and poster on the Health Promotion website: www.cdc.gov/antibiotic-use

Urinary Tract Infections

Download the EASIL informational Trifold Pamphlet or watch the video case example for active monitoring and communication with residents and their families.



[Resident and family educational pamphlet about active monitoring before starting UTI antibiotics](#)

[Nurse-Resident Interction training video for active monitoring before starting UTI antibiotics](#)

[Antibiotic use: Nursing home \(cdc.gov\)](https://www.cdc.gov/antibiotic-use/NursingHome-Toolkit-508.pdf)

<https://www.cdc.gov/antibiotic-use/pdfs/NursingHome-Toolkit-508.pdf>

<https://med.emory.edu/departments/medicine/divisions/infectious-diseases/studies-programs/easil/education.html>

All Healthcare Professionals can *Be Antibiotics Aware*



**BE
ANTIBIOTICS
AWARE**

SMART USE, BEST CARE

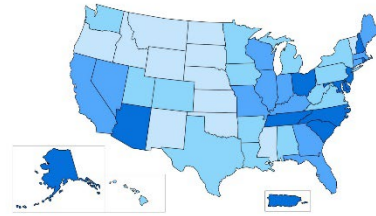


For more information, visit www.cdc.gov/antibiotic-use.



CS335343-A

Antibiotic Resistance & Patient Safety Portal



Explore and Visualize Data on
Antibiotic Use and Stewardship

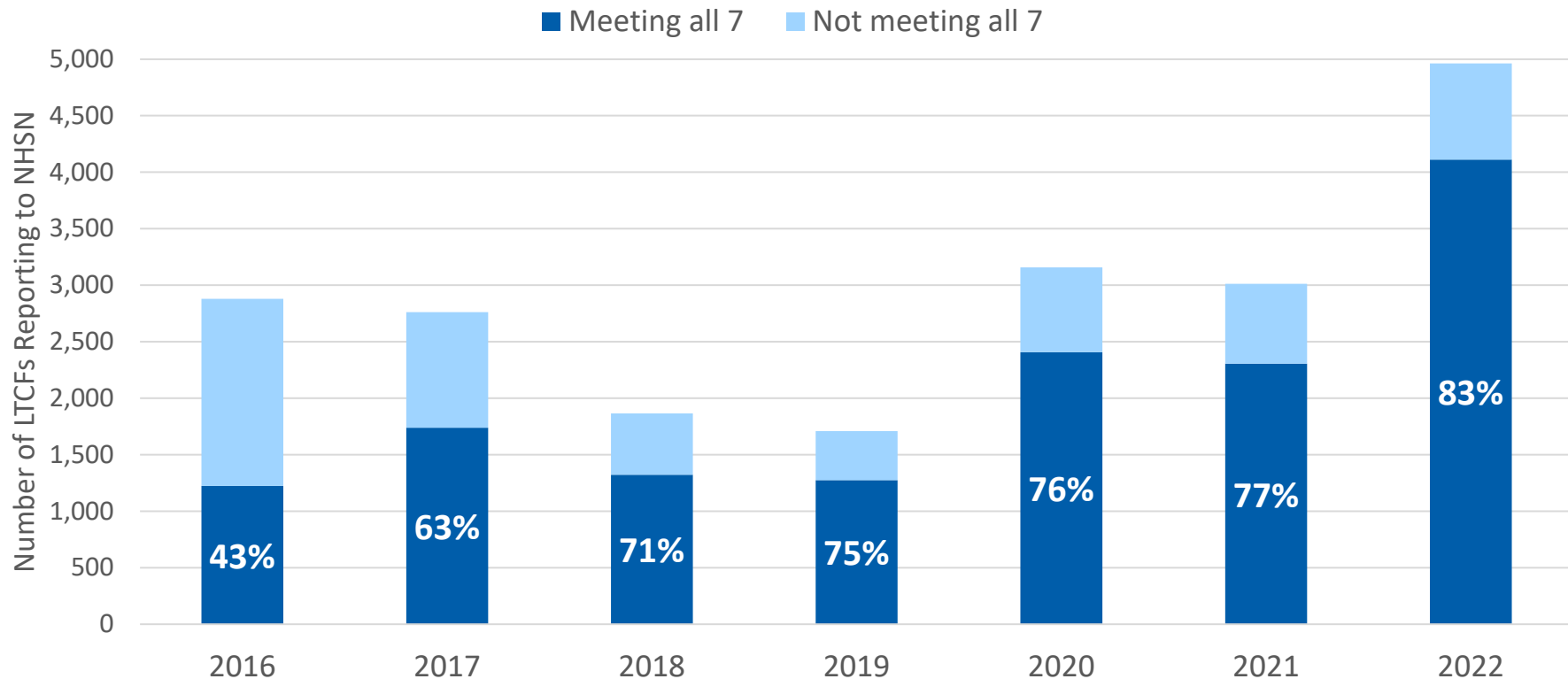
For more information, visit www.cdc.gov/antibiotic-use or call 1-800-CDC-INFO.



CS335177-A

Core Elements Uptake

Percent of U.S. LTCFs Reporting Implementation of All CDC Core Elements on Annual NHSN Survey, 2016-2022



Long-term Care Antibiotic Stewardship

LONG-TERM CARE FACILITIES REPORTING IMPLEMENTATION OF THE CORE ELEMENTS ①

4963 Facilities reporting implementation in 2022

LONG-TERM CARE IMPLEMENTATION OF ALL 7 CORE ELEMENTS OF ANTIBIOTIC STEWARDSHIP ①

83% National implementation in 2022

IMPLEMENTATION CHANGE FROM PREVIOUS SURVEY YEAR

↑ The percent of long-term care facilities reporting implementation of all 7 Core Elements increased by 6% from 2021 to 2022.

LONG-TERM CARE STEWARDSHIP

Long-term Care Antibiotic Stewardship

Antibiotic stewardship is critical to improving the treatment of infections, protecting long-term care residents from unintended consequences of antibiotic use, and helping combat antimicrobial resistance. The data presented on this page reflect the implementation of the Core Elements of Antibiotic Stewardship for Nursing Homes (<https://www.cdc.gov/antibiotic-use/core-elements/nursing-homes.html>).

The implementation of antibiotic stewardship in long-term care facilities is assessed through the National Healthcare Safety Network's (<https://www.cdc.gov/nhsn/index.html>) (NHSN) Long-term Care Facility Component Annual Facility Survey (https://www.cdc.gov/nhsn/forms/57.137_ltcfsurv_blank.pdf). Annual surveys are completed by staff in the long-term care facilities, including certified skilled nursing facilities/nursing homes. Survey questions relating to antibiotic stewardship gauge a facility's uptake of CDC's Core Elements of antibiotic stewardship. Facility responses are mapped to the seven Core Elements of antibiotic stewardship: leadership commitment, accountability, drug expertise, action, tracking, reporting, and education.

DATA SOURCE

NATIONAL HEALTHCARE SAFETY NETWORK (NHSN) (<https://www.cdc.gov/nhsn/index.html>)

YEARS INCLUDED

2016 - 2022

Core Element Implementation in 2022

LEADERSHIP: 99%

% Long-term care facilities implementing the leadership commitment Core Element in 2022
Demonstrating support and commitment to safe and appropriate antibiotic use

ACCOUNTABILITY: 98%

% Long-term care facilities implementing the accountability Core Element in 2022
Identifying physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities

DRUG EXPERTISE: 97%

% Long-term care facilities implementing the drug expertise Core Element in 2022
Establishing access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship

ACTION: 99%

% Long-term care facilities implementing the action Core Element in 2022
Implementing at least one policy or practice to improve antibiotic use

TRACKING: 100%

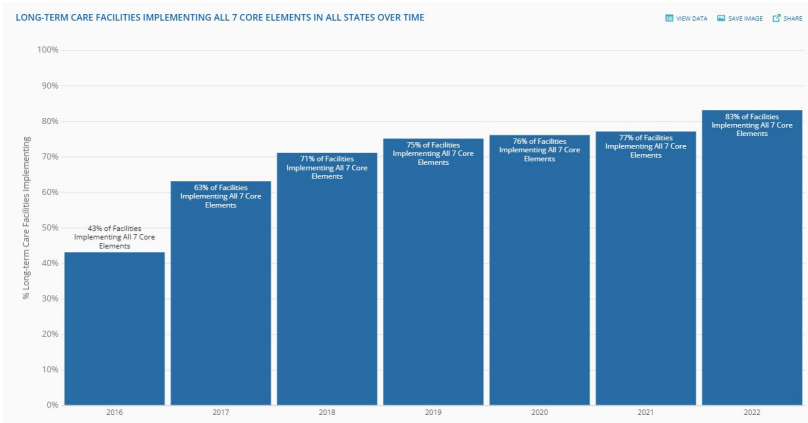
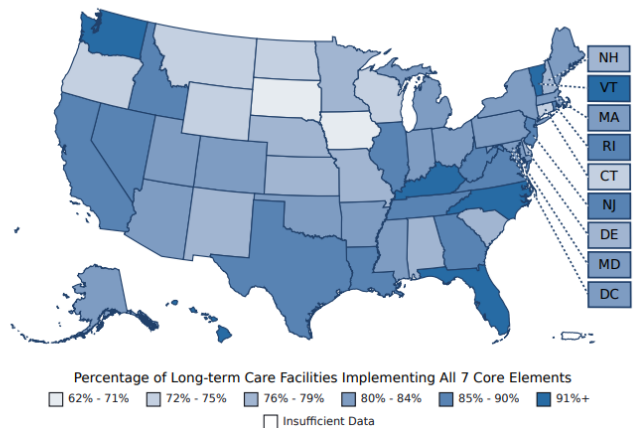
% Long-term care facilities implementing the tracking Core Element in 2022
Monitoring antibiotic prescribing and resistance patterns

REPORTING: 90%

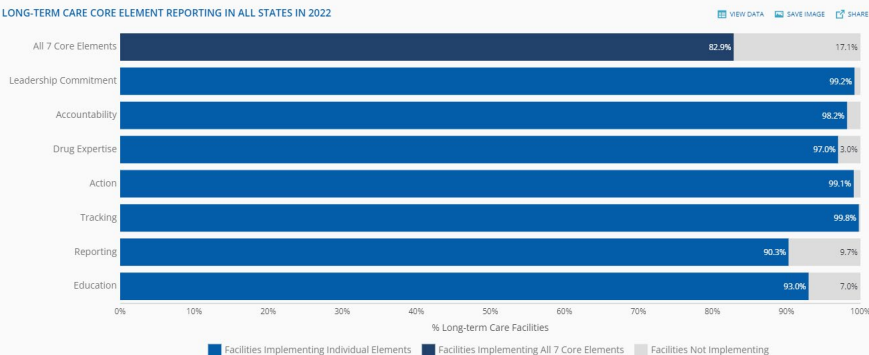
% Long-term care facilities implementing the reporting Core Element in 2022
Provide regular feedback on antibiotic use and resistance to prescribing clinicians and nursing staff

Antibiotic Resistance & Patient Safety Portal: LTC Core Element Implementation Data by State, Year, and Core Element

LONG-TERM CARE FACILITIES IMPLEMENTING ALL 7 CORE ELEMENTS IN 2022



LONG-TERM CARE CORE ELEMENT REPORTING IN ALL STATES IN 2022



LTC Core Element Implementation Data Added to State Profile Pages

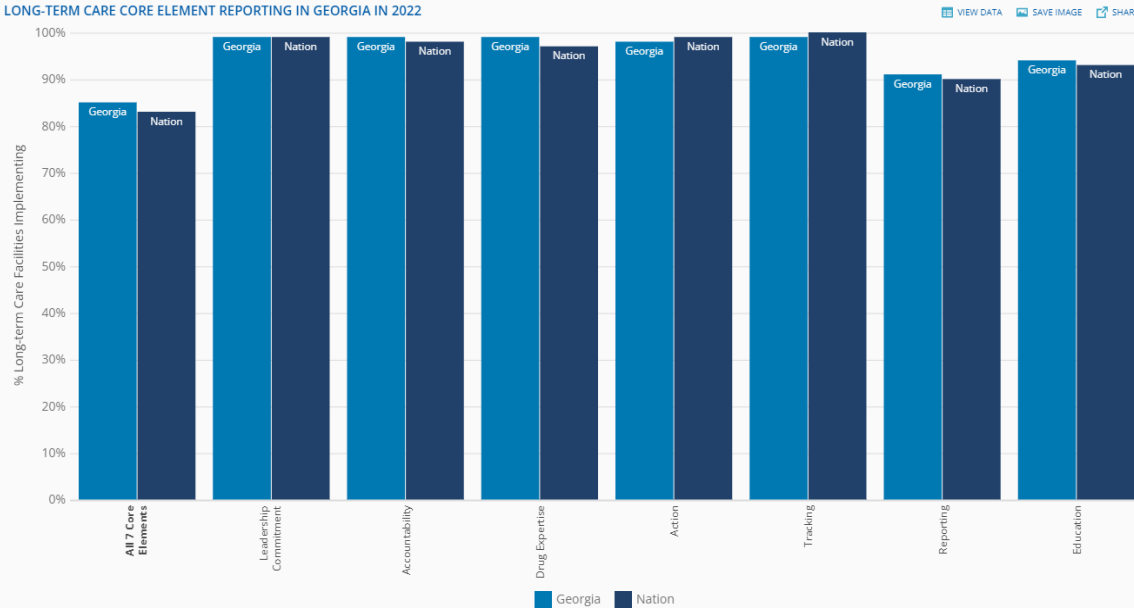
LONG-TERM CARE ANTIBIOTIC STEWARDSHIP (AS) IMPLEMENTATION BY CORE ELEMENT

YEAR

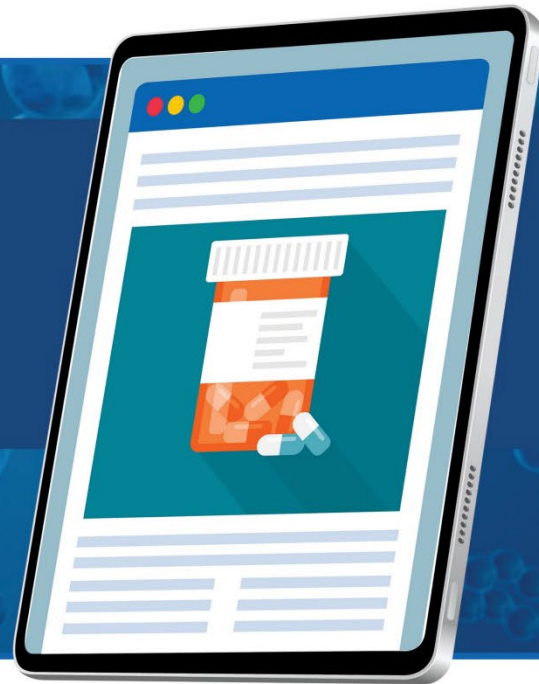
2022

This graphic shows the percent of long-term care facilities that report the implementation of each core element of antibiotic stewardship in 2022. Hover over a bar in the graphic to see the percentage of long-term care facilities reporting the implementation of each core element.

LONG-TERM CARE CORE ELEMENT REPORTING IN GEORGIA IN 2022



UPDATED CDC Training on Antibiotic Stewardship



CS336932-A

To access the training and free continuing education credits, visit
www.train.org/cdctrain/training_plan/3697.

Antibiotic Stewardship Training Course: https://www.train.org/cdctrain/training_plan/3697

Nursing Home Infection Preventionist Training Course: https://www.train.org/cdctrain/training_plan/3814

Resources for AU Tracking in LTCFs

- **AHRQ Toolkit to Improve Antibiotic Use in Long-Term Care**
<https://www.ahrq.gov/antibiotic-use/long-term-care/index.html>
- **Colorado Department of Public Health and Environment**
<https://cdphe.colorado.gov/antimicrobial-stewardship-in-long-term-care-facilities>
- **Cleveland Institute for Computational Biology – Antibiotic Use in Nursing Homes Dashboard**
<https://sunahsong.shinyapps.io/USNursingHomes/>
- **Minnesota Department of Health Antimicrobial Stewardship Program Resources for Long-term Care Facilities**
<https://www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ltc/index.html#NaN>
- **Nebraska Medicine Tools and Templates for Long Term Care**
<https://asap.nebraskamed.com/facilities/long-term-care/tools-and-templates-for-long-term-care/>
- **Rochester Nursing Home Collaborative Antibiotic Tracking Sheet**
<https://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes>
- **Washington State Department of Health**
<https://doh.wa.gov/public-health-healthcare-providers/healthcare-professions-and-facilities/healthcare-associated-infections/antibiotic-stewardship/nursing-homes>
- **Quality Innovation Network-Quality Improvement Organizations (QIN-QIOs) Resources**
https://qioprogram.org/sites/default/files/2022-07/21.QIO_.12.131-Antibiotic%20Stewardship%20Toolkit.pdf

Takeaways

- Antibiotic stewardship is a set of commitments and actions designed to optimize the treatment of infections while reducing the adverse events associated with antibiotic use.
- The annual facility survey can help you identify opportunities to implement the core elements of antibiotic stewardship at your facility.

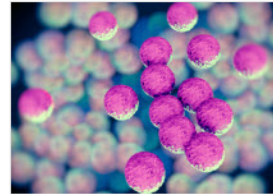
Active Monitoring of Health Outcomes.

- Monitor antibiotic use and **health outcomes** to guide practice changes

- Health outcomes:

- Rates of *C. difficile* infection
- Antibiotic susceptibility profiles

C. difficile & MRSA Infections



Surveillance for *C. difficile*, MRSA, and other Drug-resistant Infections

*4. Does your laboratory provide a report summarizing the percent of antibiotic resistance seen in common organisms identified in cultures sent from your facility (often called an antibiogram)?

Yes No

If Yes, how often is this summary report or antibiogram provided to your facility? (check one)

Once a year Every 2 years Other (specify): _____

Antibiogram		(Data Collected 7/1/2013 - 6/30/2014)																																				
		Percent of Non-Duplicate Patient Isolates Susceptible to Achievable Serum Levels																																				
ORGANISM	No. of Isolates	Aminoglycosides	Beta-lactams	Colistin	Fluoroquinolones	Glycopeptides	Macrolides	Mupirocin	Penicillins	Polymyxins	Tetracyclines	Trimethoprim-sulfamethoxazole	Vancomycin	Colistin	Linezolid	Meropenem	Plazomicin	Rifampin	Teicoplanin	Tigecycline	Vancomycin	Linezolid	Meropenem	Plazomicin	Rifampin	Teicoplanin	Tigecycline	Vancomycin	Linezolid	Meropenem	Plazomicin	Rifampin	Teicoplanin	Tigecycline	Vancomycin			
<i>E. coli</i>	141	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
<i>Staph aureus</i>	34	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
<i>Enterococcus</i>	75	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Integrating Quality Improvement Initiatives

- Implementing infection control practices, antibiotic stewardship and vaccination policies can prevent infections in nursing home residents.
- Education is key for infection prevention, antibiotic stewardship implementation and early sepsis detection.
 - Front line nursing staff are critical in building a team working to improve communication and implementing any quality improvement initiative.

GET AHEAD OF SEPSIS
KNOW THE RISKS. SPOT THE SIGNS. ACT FAST.

FOR HEALTHCARE PROFESSIONALS IN LONG-TERM CARE

BE VIGILANT. PROTECT YOUR RESIDENTS FROM SEPSIS.

More than **1.5 million** people get sepsis each year in the U.S.
At least **250,000** Americans die from sepsis each year.

Sepsis is a medical emergency. Protect your residents by acting fast. Your residents' risk of death increases with delayed recognition and treatment of sepsis.

SPOT THE SIGNS
Sepsis is the body's extreme response to an infection. It is life-threatening, and without prompt treatment, often rapidly leads to tissue damage, organ failure, and death. It happens when an infection your resident already has—like in their skin, lungs, or urinary tract—triggers a chain reaction throughout their body.

KNOW THE RISKS
Anyone can get an infection, and almost any infection can lead to sepsis. Adults 65 or older are at an increased risk of developing infections that can lead to sepsis. Sepsis also more commonly occurs in:
• People with chronic medical conditions, such as diabetes, lung disease, cancer, and kidney disease
• People with weakened immune systems
The most frequently identified pathogens that cause infections that can develop into sepsis include *Staphylococcus aureus* (staph), *Escherichia coli* (E. coli), and some types of *Streptococcus*.

PREVENT INFECTIONS AND ACT FAST
You play a critical role. Remember to:
• Act fast if you suspect sepsis, or if your residents' infections are not getting better or are getting worse. Signs of sepsis can include any one or a combination of the following:

- CONFUSED OR UNUSUAL BEHAVIOR
- SHORTNESS OF BREATH
- HEAVY HEAVY BEAT
- FEVER, CHILLS, OR FEELING VERY COLD
- EXTREME PAIN OR DISCOMFORT
- CLAMMY OR MOISTY SKIN

To learn more about sepsis and how to prevent infections, visit www.cdc.gov/sepsis.

Prevent infections by following infection control practices (e.g., hand hygiene, catheter removal) and ensuring residents receive recommended vaccines.
Ensure residents' cuts are kept clean and covered until healed.

CDC
Centers for Disease Control and Prevention
Public Health

1. <https://www.cdc.gov/sepsis/education/hcp-resources.html>
2. Reyes et al, J Am Med Dir Assoc. 2018 Jun;19(6):465-471.

Additional questions?

*Please contact nhsn@cdc.gov or submit questions through ServiceNOW
<https://servicedesk.cdc.gov/nhsncsp>*

AntibioticUse@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov



The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

