

Optimizing Antibiotic Stewardship in Long-Term Care: Latest Updates from the CDC

Post-Acute Care ECHO University of Utah Health

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November 15, 2023



The speaker has 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

- 1. Identify opportunities for improvement in implementation of antibiotic stewardship in long-term care facilities.
- 2. Discuss the importance of **Tracking and Reporting** antibiotic use in long-term care facilities.
- 3. Review methods to calculate and compare different **antimicrobial use measures** and understand how they can be used to focus stewardship interventions.

Antibiotics are frequently prescribed inappropriately in nursing homes.

 Approximately 50-70% of nursing home residents will be prescribed an antibiotic in a year.^{1,2}

• 40-75% of these antibiotic prescriptions are inappropriate.^{1,2}



UP TO **70%** OF NURSING HOME RESIDENTS RECEIVED **ONE OF MORE** COURSES OF SYSTEMIC ANTIBIOTICS IN A YEAR



TRUE or FALSE

Nursing homes are required to track their antibiotic use.

CMS Nursing Home 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 Requirements are based on the Core Elements of Antibiotic Stewardship.

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





NHSN Long-Term Care Facility Annual Surveys 2016-2022: Number and percent of LTCFs meeting all 7 *Core Elements*



Meeting all 7 Not meeting all 7

Gouin et al, Infect Control Hosp Epidemiol. 2021 May 10;1-5 https://pubmed.ncbi.nlm.nih.gov/34036926/ https://pubmed.ncbi.nlm.nih.gov/34036926/

https://arpsp.cdc.gov/profile/ltc/united-states-United%20States

Antibiotic Stewardship Citations: Qualitative Analysis

Objective: Identify opportunities for improvement in nursing home antibiotic stewardship programs

Approach: Conduct qualitative review of a randomly selected subset (318/635) of citations and categorize into themes based on the CDC Core Elements of Antibiotic Stewardship

- 1. Leadership & Accountability: Antibiotic Stewardship roles and policy
- 2. Action: Antibiotic prescribing protocols and review
- 3. Tracking & Reporting: Antibiotic and infection logs and report-out
- 4. Education: Staff training





- Public database contains CMS deficiency citations issued by state surveyors during nursing home facility inspections.
- Assessing stewardship citations
- Citation text structure:



Facility information

Regulatory language explaining citation

Summary including resident examples and/or chronologic order of what transpired

Interviews with residents, staff, and administrators

Action and Tracking were the most common deficiencies cited in nursing homes among the 318 citations reviewed.



Note: These categories are not mutually exclusive; citations could be classified into one or more categories.



Action Related to Antibiotic Prescribing (67%)

		-	-
Prescribing Protocols	Criteria for initiation	Reassessment	Review upon admission
 Missing or not implemented Antibiotic initiation, reassessment, communication tools 	 No documented indication Did not meet based on symptoms, diagnostics, and lab results 	 Appropriate drug, dose, and duration Diagnostic test results 	 No review of antibiotics prescribed during hospitalization or emergency department visit

Tracking & Reporting (40%)



Antibiotic/Infection Surveillance Log

Missing or incomplete

Report-out

 Not reviewed with prescribers or at quality improvement meetings

Tracking & Reporting (40%)



Antibiotic/Infection Surveillance Log

Missing or incomplete

"Logs did not include enough information to allow analysis of whether infections met criteria for treatment with ABXs prior to being treated or information about the **length of treatment**..."

Tracking & Reporting (40%)



"No documentation comparing month to month data or any facility actions related to findings, or communications to medical director, provider or nursing staff was found documented."

Report-out

 Not reviewed with prescribers or at quality improvement meetings

"Measurement is the first step that leads to control and eventually to improvement.

If you can't measure something, you can't understand it.

If you can't understand it, you can't control it.

If you can't control it, you can't improve it."

-H. James Harrington

 Monitoring antibiotic use can help identify opportunities for improvement and guide practice changes

Zoom Poll Question #2

How can antibiotic prescribing data be used?

A: Tracking antibiotic use in a facility over time

B: Evaluating the frequency of fluoroquinolone prescribing

C: Assessing duration of therapy

D: All of the Above

- Antibiotic use can be tracked using:
 - Long-term Care (LTC) Pharmacies dispensing data
 - Dispense and deliver medications, provide drug regimen review and medication management, can generate reports on antibiotic days dispensed



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 - Dispense and deliver medications, provide drug regimen review and medication management, can generate reports on antibiotic days dispensed
 - Electronic Health Record Systems (EHR) order data:
 - Medication orders can used to generate antibiotic use reports



- Antibiotic use can be tracked using:
 - Long-term Care (LTC) Pharmacies dispensing data
 - Dispense and deliver medications, provide drug regimen review and medication management, can generate reports on antibiotic days dispensed
 - Electronic Health Record Systems (EHR) order data:
 - Medication orders can used to generate antibiotic use reports
 - Manual Chart Review:
 - May be only the possible way to collect antibiotic use data in some facilities, can be added to infection tracking log



Key Variables for Tracking Antibiotic Use

- Resident characteristics: Resident identifier, age, gender, admission date

Key Variables for Tracking Antibiotic Use

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 Resident characteristics: Resident identifier, age, gender, admission date



Antibiotic characteristic: Antibiotic class and agent, route of administration, # of prescriptions, start and end dates, days of therapy, course duration, indication or infection type, prescriber

Key Variables for Tracking Antibiotic Use

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 Resident characteristics: Resident identifier, age, gender, admission date



Antibiotic characteristic: Antibiotic class and agent, route of administration, # of prescriptions, start and end dates, days of therapy, course duration, indication, prescriber



- Type of Facility Stay:
 - Short-Stay: ≤ 100 day stay in nursing home
 - Long-Stay: > 100 day stay in a nursing home

Facility-level Census Data to Calculate Rates

- In order to calculate antibiotic use rates, denominator data are needed:
 - Total number of resident-days
 - Stratify by type of stay

- Number of unique residents
 - Stratify by type of stay



 These denominators can be captured monthly, quarterly, yearly for antibiotic use reporting purposes.

Antibiotic Use Rates - Proportion of Residents on an Antibiotic

- Percent of residents that received an antibiotic:
 - Simple metric to quickly assess facility-level antibiotic usage
 - Compare facility prescribing over time

Stratify by resident characteristic (Type of stay)

 $\underline{Calculate \%} = \frac{Number of residents with antibiotic}{Testerbase}$

Total number of residents



Percent of residents that received an antibiotic

Defining an Antibiotic Course

- Antibiotic course:
 - Same Antibiotic ordered for the same resident within 3 days
 - Determined by the Order Start and End dates
 - Course duration is reported
- Used as alternative to Antibiotic Starts
- Within electronic data (EHR and LTC-pharmacy data), multiple antibiotic orders or dispenses can be found for a single antibiotic course and should be collapsed
- Antibiotic course duration (Order End Date Order Start Date) + 1
 - E.g., Ceftriaxone (11/9 11/3) + 1 = 7 days
- Rate expressed as Courses per 1000 resident-days



Antibiotic Use Rates - Course Rate

Courses per 1000 resident-days:

- Used to assess the number of antibiotic courses prescribed at facility, can be used to determine high prescribing of specific agents
- Can be tracked by specific indication, and reflect the effort to decrease prescribing

 $Calculate Rate = \frac{Number of antibiotic courses}{Total number of resident-days} \times 1000$

- Reported monthly, quarterly, yearly
- Stratify by antibiotic and resident characteristic (type of facility stay)

Defining Antibiotic Days of Therapy

- Antibiotic days of therapy (DOT):
 - Number of days of antibiotics
 - Sum of all course durations
 - Aggregated overall, by route of administration, class, agent, and resident characteristics
- Calculate DOTs = Course 1 + Course 2 + Course 3 + ... =
- Ceftriaxone DOTs: 7 days + 14 days + 1 day = 22 DOTs
- Rate expressed as DOTs per 1000 resident-days

Antibiotic Use Rates – Days of Therapy (DOT) Rate

Antibiotic DOTs per 1000 resident-days:

- Compare facility prescribing rates over time
- Compare prescribing rates across different facilities
- Reflects total burden of use, better reflects efforts to decrease duration
- Skewed by prophylaxis
- May be difficult to interpret to assess overall antibiotic use
- Calculate Rate = Sum of all course durations
 - Reported monthly, quarterly, yearly
 - Stratify by antibiotic and resident characteristic (type of facility stay)

Example 1: Calculating Antimicrobial Use Rates

Facility A

Antibiotic Use Metric	Total in Year	Facility-Leve
Antibiotic Courses	324	Resident-Day
Antibiotics DOTs	3,300	Residents
Residents with Antibiotic	147	

Facility-Level Denominator	Total in Year
Resident-Days	38,000
Residents	326

Antibiotic Use Rate	Calculation	Result
Courses per 100 resident- days	<u>324 antibiotic courses</u> x 1000 38,000 resident–days	8.5 courses/ 1000 resident-days
Antibiotics DOTs per 1,000 resident-days	3,300 antibiotic DOTs 38,000 resident–days x 1000	87 DOTs/ 1,000 resident-days
Percent of Residents with Antibiotic	147 residents with antibiotic 326 residents x 100	45%

Study of Antibiotic Use Rates in LTCFs



- Analysis of antibiotic orders in **electronic health records** in ~1,700 nursing homes 2016¹
 - 54% residents receive at least one antibiotic order ____
 - Prescribing rate was 88 days of therapy/1,000 resident days
 - Significant variability in antibiotic use rates by facility

• Facilities with more short-stay residents have higher antibiotic use rates

Antimicrobial Stewardship & Healthcare Epidemiology (2021), 1, e58, 1-7 doi:10.1017/ash.2021.207 Original Article Description of antibiotic use variability among US nursing homes	Facility-level rates	Overall	Facilities with ≥75% Short- Stay Residents	Facilities with <75% Short- Stay Residents
using electronic health record data Sarah Kabbani MD, MSc ¹ , Stanley W, Wang MA, MS ² , Laura L, Ditz RN ² , Katryna A, Gouin MPH ¹ , Danielle Palms ME	Antibiotic DOT	81		
Theresa A. Rowe DO, MS ^{1,3} , David Y. Hyun MD ⁴ , Nancy W. Chi MHA ² , Nimalie D. Stone MD, MS ¹ and Lauri A. Hicks I ¹ Centers for Disease Control and Prevention, Atlanta, Georgia, United States, ² PointClickCare, Mississauga, Ontario, Canada, ³ Northwestern University Feinbe School of Medicine, Chicago, Illinois, United States and ⁴ The Pew Charitable Trusts, Washington, DC, United States	Days, Median (IQR)	(43-140)	90	38
Kabbani S. et al. Antimicrob Steward Healthc Epidemiol. 2021:1(1):e58.		-		

Resources for AU Tracking in LTCFs

TECHNICAL ADVANCE

Use of electronic pharmacy transaction data and website development to assess antibiotic use in nursing homes

Sunah Song^{1,2,3}, Brigid M. Wilson^{4,5}, Joseph Marek⁶ and Robin L. P. Jump^{3,4,5*}

- Demonstrated use of long-term care pharmacy data to assess antibiotic use metrics:
 - days of therapy, length of antibiotic therapy, rate of antibiotic starts
- Developed dashboard to summarize withinfacility data and compare data across facilities
- Publicly available template can be accessed at <u>https://sunahsong.shinyapps.io/USNursingHomes/</u>



Drug Class

Song S, Wilson BM, Marek J, Jump RLP. Use of electronic pharmacy transaction data and website development to assess antibiotic use in nursing homes. *BMC Med Inform Decis Mak*. 2021;21(1):148. Published 2021 May 5. doi:10.1186/s12911-021-01509-7 https://pubmed.ncbi.nlm.nih.gov/33952239/

Open Access

Resources for AU Tracking in LTCFs



Department of Public Health & Environment





Antibiotic Class

January - March April - June July - September October - December Total Year

https://docs.google.com/spreadsheets/d/1vkGZm8rCfeheuC3VSSv-Mn0PBoeedUOCrAsRbqBPpbk/edit#gid=1030354479

Resources for AU Tracking in LTCFs



Rochester Nursing Home Collaborative

- Policy Templates
- Tracking Antibiotic Use Excel Workbooks
- Education to Improve AU, Residents and Families, Nursing Staff

https://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes

Infection Tracking Log

2019	Avg.	Daily Cen	sus			Resid	lent Day	/s per M	lonth														
	_			Cli	nical Info	ormatio	า					Treatment				Prescriber Therapy							
Site of Infection	Meets McGeer' s Criteria	Lab Identifie d C. difficile Infectio n (CDI)	MRSA Infecti on	Admitt ed with Infecti on	Health care Acquir ed - Nosoc omial Infecti on	Temp	X-Ray Taken	Cultur e Taken	Foley	Trach	Causative Organism (list or "none found")	Class	Medication	Treatment	Follow-up De- escalation	Diagnosi s	Was this antibioti c prescribe d at the facility?	Who prescribe d this antibiotic ?	Start Date	Stop Date	Length of Therapy (days)	Reportable infections reported	Control Technique s Utilized
UTI	No	N/A	No	No	Yes	Yes	No	Yes	Yes	N/A	xxx	Penicillins	Ampicillin-	250 mg	Continue	UTI	No	David	3/2/2019	3/10/2019	9	No	Hosp did
Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	Multi-Rx	yeast	Macrolides	Doxycycline	100mg QD	Narrow	UTI	No	Dr6	3/2/2019	3/11/2019	10	No	
UTI	Yes	Skin	Skin	No	Yes	Yes	No	Yes	Yes	N/A	pseudomon	Urinary_anti	Fosfomycin	2gm Bid	Discontinue	UTI	Yes	Dr4	3/9/2019	3/16/2019	8	No	Repeat due
UTI	Yes	N/A	No	No	Yes	Yes	No	Yes	N/A	No	influenza A	Anti_infective	Aztreonam	75mg Bid	Discontinue	influenza	Yes	Dr2	3/3/2019	3/7/2019	5	No	droplet
UTI	Yes	N/A	No	No	Yes	No	No	Yes	No	N/A	enterococcu	Penicillins	Amoxicillin	100mg Bid	Change	UTI	Yes	Dr4	3/9/2019	3/19/2019	11	No	
UTI	Yes	N/A	No	No	Yes	No	No	No	N/A	N/A	No culture	Fluoroquinol	Gatifloxacin	800-160mg	Discontinue	cellulitis	Yes	Dr1	3/9/2019	3/19/2019	11	No	
Skin	No	N/A	no		Yes							Penicillins	Amoxicillin	1gm IV	Continue	cellulitis	Yes	Dr2	3/22/2019	3/24/2019	3	No	
Resp	Yes	N/A	No	Yes	Yes	No	Yes	No	N/A	No	No culture	Cephalospor	Cefuroxime	500mg QOD	Continue	bronchiti	No	Dr5	3/24/2019	3/28/2019	5	No	
UTI	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	MRSA	Fluoroquinol	Gatifloxacin	1.25-	Continue	Infected	No	Dr3	3/12/2019	4/13/2019	33	No	
UTI	No	N/A	No	No	Yes	No	No	Yes	No	N/A	e-coli	Macrolides	Clarithromycin	250mg Bid	Continue	UTI	Yes	Dr1	3/22/2019	3/27/2019	6	No	
GI	Yes	N/A	No	No	Yes	No	No	Yes	No	N/A	proteus micabilio	Anti_infective	Aztreonam	300mg Bid	Continue	UTI	Yes	Dr5	3/29/2019	4/5/2019	8	No	

Track Antibiotic Use to Optimize Antibiotic Use

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

Fluoroquinolones and cephalosporins were the most prescribed antibiotics classes.





Opportunities for improvement in prophylactic courses

Percent of Total Antibiotic Courses





Opportunities for improvement in prolonged course durations

Percent of Total Antibiotic Courses

····· Cumulative Percent of Total Antibiotic Days of Therapy



Evaluating Antibiotic Course Durations

- Assess prescribing practices in the facility
- Identify courses that are ≤ 1 and > 42 days to determine proportion of antibiotic courses used for prophylaxis
- Reporting the proportion of antimicrobial courses > 7 days for assessing the effectiveness of an intervention that targets the duration of antibiotic courses (e.g., "antibiotic time-out")

Shorter Antibiotic Courses

- Evidence shows that shorter durations of antibiotic use are better^{1,2}
- LTC Consultant Pharmacists can support stewardship implementation
- Additional Consultant Pharmacist posters are available on the CDC website



For more information, see Reducing Duration of Antibiotic Treatment for Common Infections in Long-Term Care or visit publichealthontario.ca/ASPinLTC.

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CONSULTANT PHARMACISTS: **BE ANTIBIOTICS AWARE** Use the Shortest **Effective Antibiotic** Duration

SCENARIO

When reviewing antibiotic orders during the monthly medication review, you find that the average duration for an antibiotic course is 10 days.

One way to improve antibiotic use is to focus on shortening antibiotic therapy durations that are longer than necessary. In residents who have a timely clinical response, guidelines suggest the following durations for uncomplicated infections:

 Community-acquired pneumonia: 5 days¹ Hospital-acquired pneumonia: 7 days² · Non-purulent cellulitis: 5 days3

Duration of therapy for urinary tract infections (UTI) can vary based on the drug used, and whether the resident has a catheter or a complicated UTI.

Consultant pharmacists can help optimize antibiotic duration by:

1. Determining and documenting the prescribed length of therapy for every antibiotic order.

2. Discussing shortening the duration with the healthcare professional to be consistent with guidelines if the resident had an uncomplicated clinical course and responded appropriately to treatment

The scenarios and recommendations are applicable to most nursing home residents. Prior to making recommendations, always assess the individual resident, review the documentation in the medical record, discuss with facility staff, and use your clinical judgment. Follow your facility's protocols and treatment guidelines when applicable

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Mandell LA, et al. Clin Infect Dis. 2007 Mar:44(Supplement, 2):527-72. Kalli AC, et al. Clin Infect Dis. 2016 Sep;63(5):e61-11.
 Stevens DL, et al. Clin Infect Dis. 2014 Jul59(2):e10-52





1. Spellberg, Brad, and Louis B Rice. Annals of internal medicine vol. 171,3 (2019): 210-211. 2. Lee RA, Centor RM, Humphrey LL, et al. Ann Intern Med. 2021;174(6):822-827.

In a study of antibiotic use in 1700 LTCFs, Urinary Infections were the most common indication.





Ciprofloxacin **TMP-SMX**

(days)

Azithromycin Amoxicillin-Clavulanate Doxycycline **TMP-SMX**

Vancomycin (oral) Metronidazole Rifaximin

Increased prescribing of antibiotics used for respiratory infections



Gouin KA, et al., Clin Infect Dis.

Data to Characterize Antibiotic Prescribing for LTC Residents with COVID-19



Antibiotic Orders and COVID-19 Diagnosis captured in PointClickCare 2,086 Nursing Homes

118,180 Residents with a COVID-19 Diagnosis (April 2020-November 2021)

One-quarter of residents with COVID-19 diagnosis had an associated antibiotic

- From April 2020-November 2021, a total of 118,180 residents with a SARS-CoV-2 infection were identified
- 24% of residents with COVID-19 diagnosis had an associated antibiotic prescription (N=27,972)
- The most commonly prescribed antibiotics were azithromycin, doxycycline and ceftriaxone

Antibiotic agents associated with COVID-19 diagnosis among nursing home residents



COVID-19 Vaccination is Associated with Reduced Outpatient Antibiotic Prescribing in Older Adults with Confirmed SARS-CoV-2: A Population Wide Cohort Study

POPULATION



METHODOLOGY



RESULTS



Outpatients 66 years and older with confirmed SARS-CoV-2 infection, from nursing homes (13,529) and the community and 1-week after SARS-CoV-2 diagnosis. (50,885), between Jan 1st 2020 to Dec 31st 2021.

We determined the prevalence and rates of antibiotic prescribing within 1-week before We evaluated predictors of prescribing, including a primary COVID-19 vaccination series.

Antibiotic prescribing was common (13-22%). COVID-19 vaccination was associated with reduced prescribing with adjusted incidence rate ratios of 0.7 (95%CI 0.4-1) in nursing homes and 0.3 (95%CI 0.3-0.4) in the community.

Outpatient antibiotic use was common in patients with SARS-CoV-2. COVID-19 vaccination was associated with reduced antibiotic prescribing.

MicFedden et al. Clinical Inhictious Divesses 2003

Reporting

Reporting

- Reporting can motivate staff and sustain practice changes.
 - Providing feedback on prescribing practices and compliance with facility antibiotic use protocols
 - Provider-specific feedback and peer comparison may be an effective way to change prescribing behavior as demonstrated in the outpatient setting.¹

Clinical Infectious Diseases

MAJOR ARTICLE



Data for Action: Prescriber Feedback in Long-Term Care Facilities

Population-Wide Peer Comparison Audit and Feedback to Reduce Antibiotic Initiation and Duration in Long-Term Care Facilities with Embedded Randomized Controlled Trial

Nick Daneman,^{123,45} Samantha M. Lee,³ Heming Bai,⁶ Chaim M. Bell,^{34,5,7} Susan E. Bronskill,^{13,45,8} Michael A. Campitelli,³ Gail Dobell,⁶ Longdi Fu,³ Gary Garber,²⁹ Noah Ivers,^{35,8} Jonathan M.C. Lam,⁶ Bradley J. Langford,² Celia Laur,⁸ Andrew Morris,⁵² Cara Mulhall,⁶ Ruxandra Pinto,¹ Farah E. Saxena,³ Kevin L. Schwartz,²³ and Kevin A. Brown²³

- Randomized controlled trial in Ontario in 2019 among providers in long-term care facilities
 - 1,238 physicians caring for 96,185 residents included
 - 28% of physicians received audit and feedback
 - 72% of physicians received no feedback
- Audit and feedback was associated with a significantly greater decline in prolonged antibiotics (adjusted difference –2.65%)
 - Resulted in 335,912 fewer days of treatment
 - No significant difference in antibiotic initiation
- Peer comparison audit and feedback interventions can generate reductions in antibiotics for prolonged durations, resulting in large reductions in antibiotic days of treatment across populations.

Daneman N, Lee SM, Bai H, et al. Population-Wide Peer Comparison Audit and Feedback to Reduce Antibiotic Initiation and Duration in Long-Term Care Facilities with Embedded Randomized Controlled Trial. *Clin Infect Dis*. 2021;73(6):e1296-e1304. doi:10.1093/cid/ciab256 https://pubmed.ncbi.nlm.nih.gov/33754632/

Peer comparison stewardship interventions in LTCFs

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%

Daneman N, Lee SM, Bai H, et al. Population-Wide Peer Comparison Audit and Feedback to Reduce Antibiotic Initiation and Duration in Long-Term Care Facilities with Embedded Randomized Controlled Trial. *Clin Infect Dis*. 2021;73(6):e1296-e1304. doi:10.1093/cid/ciab256 https://pubmed.ncbi.nlm.nih.gov/33754632/

LTC Consultant Pharmacists can Support Antibiotic Stewardship Implementation

- Provide stewardship and drug expertise
- Support AU tracking and reporting
- Medication management and drug regimen review
 - Optimizing treatment duration



Ashraf MS, Bergman S. J Am Med Dir Assoc. 2021;22(1):6-8. doi:10.1016/j.jamda.2020.11.029 https://asap.nebraskamed.com/facilities/long-term-care/





ineraritis and recommendations are applicable to must number from evaplants. Prior to making mendation, always assess the indexted evaluation, nevers the decommitation in the resulted d. discours with theological and an accordinate patyment. Follow your facility's protection and were publicless where applicable.



www.edc.gov/antibiotic-usi



https://www.cdc.gov/antibiotic-use/training/materials.html#anchor_1626372118971

Key Takeaway

Tracking and reporting of antimicrobial use measures provides a pathway to identify the most effective stewardship interventions and track their impact on antimicrobial prescribing practices.





UPDATED CDC Training on Antibiotic Stewardship





To access the training and free continuing education credits, visit <u>www.train.org/cdctrain/training plan/3697</u>.

CS336932-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.



The following checklist is a companion to the Core Blements of Antibiotic Stewardship in Narring Homes. The CDC recommends that all running homes take steps to implement antibiotic stewardship activities. Before gating statuta, use this checklist as a basilena assessment of policies and practices which are in place. Then use the checklist to review progress in expanding allwardship activities on a regular basis (e.g., anzulub). Over time, implement activities for each element in a step-wise fashion.

D Yes D No a following actions yes, indicate which of the f Written statement of leadership support to improve antibiotic us Antibiotic stewardship duties included in medical director position of Intibiotic stewardship duties included in director of nursing position description tors whether antibiotic stewardship policies are fo your facility identified a lead's) for antibiotic stewardship activities Van Van yes, indicate who is accountable for stewardship activities (select all that apply Medical director Director or assistant director of nursing services Consultant pharmacist **UG EXPERTISE** Does your facility have access to individual(s) with antibiotic stewardship expe Yes yes, indicate who is accountable for stewardship activities (select all that apply Consultant pharmacy has staff trained/is experienced in antibiotic stewardshi Partnering with stewardship team at referral hospital External infectious disease/stewardship consultant Other: TIONS TO IMPROVE USE Does your facility have policies to improve antibiotic prescribing/u U Yes indicate which policies are in place (select all that apply ires prescribers to document a dose, duration, and indication for all antibiot riptons loped facility-specific algorithm for assessing residents tures) for specific infections views antibiotic agents listed on the medication t



Feb 27, 2019



Special Article

TRAIN

Nursing Home Infection Preventionist Training

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

Robin L.P. Jump MD, PhD^{a,b,*}, Swati Gaur MD, MBA, CMD^c, Morgan J. Katz MD^d, Christopher J. Crnich MD, PhD^{e,f}, Ghinwa Dumyati MD^{*}, Muhammad S. Ashraf MBBS^h, Elizabeth Frentzel MPHⁱ, Steven J. Schweon RN, MPH, MSN, CIC, HEM^j, Philip Sloane MD, MPH^k, David Nace MD, MPH, CMD¹ on behalf of the Infection Advisory Committee for AMDA—The Society of Post-Acute and Long-Term Care Medicine

Resources

- Core Elements of Antibiotic Stewardship for Nursing Homes
 https://www.cdc.gov/antibiotic-use/core-elements/nursing-homes.html
- Checklist for Core Elements of Antibiotic Stewardship for Nursing Homes
 https://www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-checklist-508.pdf
- Implementation Resources for Nursing Homes
 https://www.cdc.gov/antibiotic-use/core-elements/nursing-homes/implementation.html
- CDC Nursing Home Infection Preventionist Training Course
 https://www.train.org/cdctrain/training_plan/3814
- AHRQ Toolkit to Improve Antibiotic Use in Long-Term Care
 https://www.ahrq.gov/antibiotic-use/long-term-care/index.html
- Rochester Nursing Home Collaborative Antibiotic Tracking Sheet
 https://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes
- Template for an Antibiotic Stewardship Policy for Post-Acute and Long-Term Care Settings
 <u>https://pubmed.ncbi.nlm.nih.gov/28935515/</u>
- Resources from Quality Innovation Network-Quality Improvement Organizations (QIN-QIOs)
 https://www.telligenqinqio.com/antibiotic-stewardship-long-term-care/

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U.S. ANTIBIOTIC AWARENESS WEEK November 18–24, 2023

www.cdc.gov/antibiotic-use

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 author official position of the Centers for Disease Control and Preventio





CS338246-A