

Be Antibiotic Aware: Tracking Illness and Antimicrobial Use

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Participants will be able to ...

- Describe the critical role long-term care plays in the fight against antimicrobial resistance.
- Explain how to implement use of a computer-based tool to track resident infection and antimicrobial use.
- Demonstrate how data are entered into monthly tracking sheets.
- Describe a process for reviewing and utilizing auto-populated data in tables and bar graphs to drive stewardship interventions.

Long-term Care is Critical in the Fight

- Increased Vulnerability
- Frequent Antibiotic Use
- Close Proximity and Shared Spaces
- Chronic Illness Management
- Transitions of Care
- Antibiotic Stewardship

Addressing antimicrobial resistance in LTC settings requires a multifaceted approach, including infection prevention, antibiotic stewardship, and collaboration across sectors.

- Set of commitments and actions designed to optimize the treatment of infections while reducing the adverse events associated with antibiotic use
 - CDC recommends all nursing homes take steps to improve antibiotic prescribing practices and reduce inappropriate use
 - CDC recommends all acute care hospitals implement an antibiotic stewardship program
- According to the CDC, 40-75% of antibiotic prescribed in nursing homes may be unnecessary or inappropriate



Antibiotic Use in LTC Facilities

- Antibiotics can cause harm to residents
 - High risk of side effects and adverse events
 - Major risk factor for Clostridium difficile infection
 - Driver of antibiotic resistance

¹ AHCA Quality Report 2013. ²Lim CJ, Kong DGM, Stuart RL Reducing inappropriate antibiotic prescribing in the residential care setting: current perspectives. Clin Interven Aging. 2014; 8: 155-177. ³Nicolie LE, Bentley D, Garibaidi R, et al. Antimicrobial use in long-term care facilities. Infect Control Hosp Epidemiol 2000; 21:537–45.

"incorrectly = prescribing the wrong drug, dose, duration or reason



7 CORE ELEMENTS for antibiotic stewardship in nursing homes Leadership Commitment Accountability Drug Expertise Action Tracking

CDC: Antibiotic Stewardship in Nursing Homes (www.cdc.gov/antibiotic-use/coreelements/pdfs/Infographic-Antibiotic-Stewardship-Nursing-Homes-508.pdf)

Americans are admitted to or reside in nursing homes during a year¹

70%

of nursing home residents received antibiotics during a year²³

UP TO 75% of antibiotics are

prescribed incorrectly*

CDC recommends

Reporting

Education

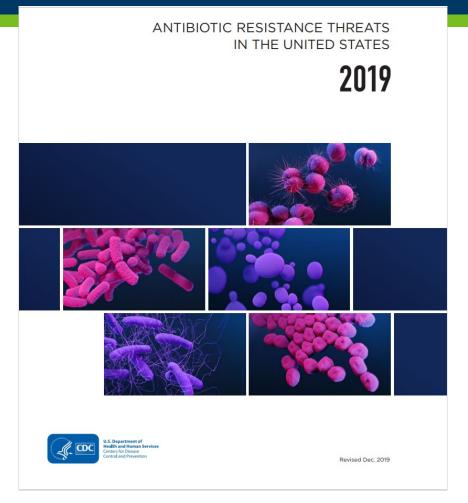
CDC's Core Elements of Antibiotic Stewardship for Nursing Homes



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

<u>CDC: Core Elements of Antibiotic Stewardship for Nursing Homes</u> (www.cdc.gov/antibiotic-use/core-elements/nursing-homes.html)

Fighting Back Against Antibiotic Resistance



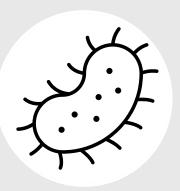
- Infection prevention and control
- Tracking and data
- Antibiotic use and access
- Vaccines, therapeutics, and diagnostics
- Environment and sanitation

<u>CDC: Antibiotic Resistance Threats in the United States, 2019</u> (www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf)

CDC's Core Elements For Antibiotic Stewardship in Nursing Homes



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

	m	DEPARTMENT OF HEALTH		R
		Resident Days Present	1	
	Month	Resident Days Present per Month		This is former at an annual bar an annual bar and
	January			This information must be manually entered
	February			auto-calculations and/or charts can be gene
	March			
	April			
	May			Days present is defined as the number of pat
	June		-	
	July		-	present for any portion of each day of a caler
	August September		-	any patient care location.
			-	any patient care location.
17	November		-	
18			-	For example, take the number of residents a
19			4	• •
20	i			many days each were present at the facility f
21				
22	1			
23	1			- Resident 1: 30 days
24				- Resident 2: 8 days
25	1			
21 22 23 24 25 26 27 28 29	1			- Resident 3: 22 days
27	1			· · · · · · · · · · · · · · · · · · ·
28				- Total resident days = 30 + 8 + 22 = 60 reside
29	4			

d before any erated by Excel.

atients who were endar month in

and total how for the month:

dent days

Infection and Antibiotic Tracking Tool

Infection and Antibiotic Tracking Tool

Resident Days Present

- Resident days per month must be manually entered before any auto-calculations can be generated by Excel.
- Summary
 - All data on this sheet automatically populates as data is entered on each monthly tracking sheet.

Monthly Tracking Sheets (January – December)

- Resident information
- Classification
- History
- Diagnostics (Microbiology, Other labs, Radiology)
- Antimicrobial starts
- Other information





Important Data Elements

Infection and Antibiotic Tracking Tool



Antibiotic Use Measures for Tracking Antibiotic Use



Reporting Antibiotic Use and Outcomes

✓ Resident name

- ✓ Prescription or administration date
- ✓Antibiotic name and class
- ✓ Days of therapy (DOT)
- ✓ Route
- ✓ Resident-days

DEPARTMENT OF HEALTH



Resident Days Present							
Month Resident Days Present per Month							
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							

✓ Resident name

- ✓ Prescription or administration date
- ✓Antibiotic name and class
- ✓ Days of therapy (DOT)
- ✓ Route
- ✓ Resident-days

Resident Information								
Unit Name 🔹	Resident Name 🛛 💌	Room #	Admit Date 💌					

✓ Resident name

- ✓ Prescription or administration date
- ✓Antibiotic name and class
- ✓ Days of therapy (DOT)
- ✓ Route
- ✓ Resident-days

		AD	AE	AF	A
		Antibiotic	Antibiotic	Total Days of	Meets Criteri
in	-	Start Date д	End Date 🖃	Therapy 🚽	Y/N
		Antibiotic Start Date ح 4/18/2024	4/22/2024	5	

✓ Resident name

✓ Prescription or administration date

- ✓Antibiotic name and class
- ✓ Days of therapy (DOT)

✓ Route

✓ Resident-days

		VV	Х
:	-	Antibiotic Name 🗔	
		Amantadine	M2 ion channel inhibitors
		Azithromycin	Macrolides
		Azithromycin Ceftizoxime	Macrolides Cephalosporins
		-	
		Ceftizoxime	Cephalosporins
		Ceftizoxime	Cephalosporins
		Ceftizoxime	Cephalosporins 2 ion channel inhibitors
		Ceftizoxime Amantadine	Cephalosporins 2 ion channel inhibitors





Important Data Elements Infection and Antibiotic Tracking Tool

Antibiotic Use Measures for Tracking Antibiotic Use



Reporting Antibiotic Use and Outcomes

Important Data Elements

✓ Indication

- ✓ Duration of the antibiotic course
- ✓ Nursing home unit
- ✓Admission date
- ✓ Prescriber

	F	G	
	Classific	ation	
ction			Surve
IS		Body System of	defini
es/No 🖃	Infection type 🕞	Infection 👻	Yes/N
	COVID-19 (SARS-C	Respiratory Tract	
	Norovirus	Gastrointestinal	
	Prophylaxis	Other	



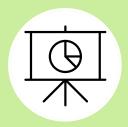


Important Data Elements

Infection and Antibiotic Tracking Tool



Antibiotic Use Measures for Tracking Antibiotic Use



Reporting Antibiotic Use and Outcomes

Summary Data

✓ Total Days of Therapy

- ✓ Days of Therapy (DOT) per 1,000 Resident Days
- ✓ Total Infection Rates per 1,000 Resident Days
- ✓ Infection Rates per 1,000 Resident Days
- ✓ Prescription (Rx) Origin
- ✓ Percent (%) Meeting Criteria
- ✓Antimicrobial Class Utilization







Important Data Elements

Infection and Antibiotic Tracking Tool



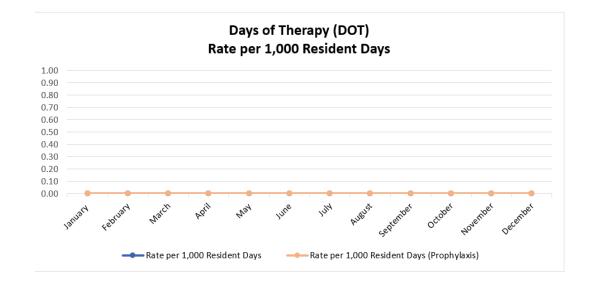
Antibiotic Use Measures for Tracking Antibiotic Use



Reporting Antibiotic Use and Outcomes

Days of Therapy

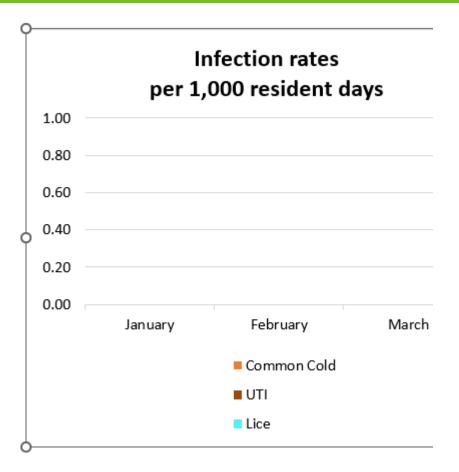
Total Days of Therapy									
Month	Total Days of Therapy per Month	Rate per 1,000 Resident Days	Total Days of Therapy per Month (Prophylaxis)	Rate per 1,000 Resident Days (Prophylaxis)					
January	0	0.00	0.00	0.00					
February	0	0.00	0.00	0.00					
March	0	0.00	0.00	0.00					
April	0	0.00	0.00	0.00					
May	0	0.00	0.00	0.00					
June	0	0.00	0.00	0.00					
July	0	0.00	0.00	0.00					
August	0	0.00	0.00	0.00					
September	0	0.00	0.00	0.00					
October	0	0.00	0.00	0.00					
November	0	0.00	0.00	0.00					
December	0	0.00	0.00	0.00					



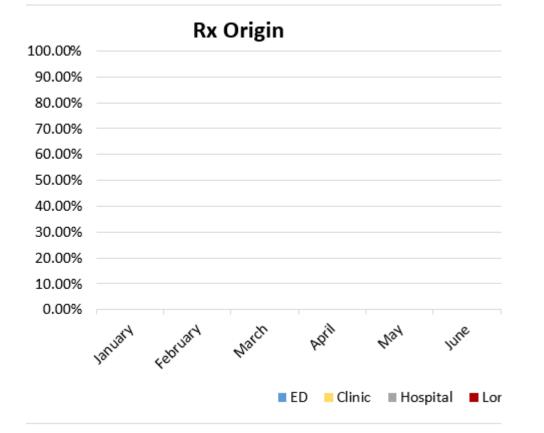
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Infection Rates

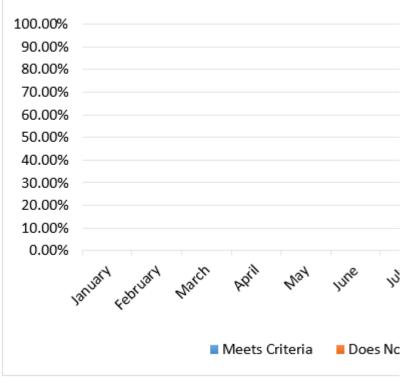
Total Infection Rates per 1,000 Resident Days								
Month	Total		Common Cold	Pharyngitis				
January		0.00	0.00	0.00				
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								



Rx Origin and % Meeting Criteria



% Meeting Criteria



Antimicrobial Class Utilization

Antimicrobial Class Utilization

Tatus auku as	00/							
Tetracyclines	0%							
Streptogramins	0%							
Rifampin	0%							
Polymyxins	0%							
Phenicols	0%							
Penicillins	0%							
Oxazolidinones	0%							
Nitroimidazoles	0%							
Nitrofurans	0%							
Monobactams	0%							
Macrolides	0%							
Macrocyclic	0%							
M2 ion channel inhibitors	0%							
Lipopeptides	0%							
Lincosamides	0%							
Ketolides	0%							
Glycopeptides	0%							
Fosfomycins	0%							
Folate pathway inhibitors	0%							
Fluoroquinolones	0%							
Cephalosporins	0%							
Carbapenems	0%							
B-lactam/B-lactamase inhibitor combination	0%							
Aminoglycosides	0%							
						1		
0'	%	10%	20%	30%	40%	50%	60%	7(

Infection and Antibiotic Tracking Tool

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- Antimicrobial starts
- Other information

True or False



True/False: Long-term care resident will only ever be prescribed an antibiotic.

Think influenza....

True/False: Residents are always prescribed an antibiotic because of an infection.

Think of the letter 'P'

True/False: Antibiotic therapy is prescribed within the same month.

True/False: Infections stop at month end.

True/False: Residents are only prescribed one antibiotic at a time.

True/False: Residents only have one infection per month.

Not so unique situations

- Provide a section to include other antimicrobials (i.e., antiviral and antifungal drugs)
- Residents on prophylaxis are considered during analysis
- You may enter a resident more than once if there is more than one infection within a month
- You may enter more than one antibiotic per resident per month
- Existing infections are documented and accounted for during analysis

Where to find the tracking tool?

- <u>Minnesota Antimicrobial Stewardship Program Resources for Long-term Care Facilities</u> (www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ltc/index.html)
 - Scroll down to Communication, decision-making and surveillance tools
 - Within the featured tools box:
 - Infection and Antibiotic Use Tracking Tool Instructions (www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ltc/apxlinstructions.pdf)
 - Infection and Antibiotic Use Tracking Tool Workbook (www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ltc/apxl.xlsx)
 - Under the Infection surveillance header: <u>WebEx Recording: Infection and Antibiotic Use Tracking in Long-term Care</u> (https://minnesota.webex.com/minnesota/k2/e.php?RCID=a93b9b1728a985588085cead03cfb061) (1 hour)
- Technical assistance:
 - Reach out to: <u>Health.icar@state.mn.us</u>

Resources

<u>CDC: Core Elements of Antibiotic Stewardship for Nursing Homes</u>

(www.cdc.gov/antibiotic-use/core-elements/nursing-homes.html)

- <u>Appendix B: Measures of antibiotic prescribing, use and outcomes</u> (www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-appendix-b-508.pdf)
- <u>Appendix C: Data Sources, Elements, and Measures for Tracking Antibiotic Use in Nursing Homes</u> (www.cdc.gov/antibiotic-use/core-elements/pdfs/Nursing-Homes-Core-Elements-C-508.pdf)
- <u>CDC: Core Elements for Antibiotic Stewardship in Nursing Homes: What You Need to</u> <u>Know About Antibiotics in a Nursing Home</u>

(www.cdc.gov/antibiotic-use/core-elements/pdfs/factsheet-core-elements-what-you-need-to-know-508.pdf)

<u>AHRQ: About the Nursing Home Antimicrobial Stewardship Guide</u>

(www.ahrq.gov/nhguide/about/index.html)

Washington State Department of Health: Nursing Home Resources

(https://doh.wa.gov/public-health-healthcare-providers/healthcare-professions-and-facilities/healthcare-associated-infections/antibiotic-stewardship/nursing-homes)



Thank You!

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