

STEWARDSHIP: LONG TERM CARE EDITION

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1

Disclosures

Scientific Advisory Board: HealthTrackRx



2

What is Stewardship?

Antimicrobial stewardship is the effort to measure and improve how antibiotics are prescribed by clinicians and used by patients.

US Centers for Disease Control and Prevention. <https://www.cdc.gov/antibiotic-use/core-elements/index.html#print> 3

3

Why Stewardship?



1.27 million deaths annually attributable to antimicrobial resistance (AMR), and nearly 5 million associated with resistant infections

Top 10 Global Health Threat

World Health Organization (WHO)

Source: <https://www.cdc.gov/antibiotic-use/images/AR-Burden-Numbers-2019.png>
Lancet 2022;399:629-55.
EClinicalMedicine 2021;41:101221

4

4

AMR Impacts More Than Human Health...

A ONE HEALTH CHALLENGE

The Interconnected Threat of Antibiotic Resistance



Antibiotic Resistance Affects Humans, Animals & The Environment

People

Animals

Environment



CDC's 2019 AR Threats Report, https://www.cdc.gov/antimicrobial-resistance/data-research/threats/?CDC_AAref_Val=https://www.cdc.gov/drugresistance/biggest-threats.html

5

5

Stewardship - Part of a Larger Plan...

2015 WHO Action Plan

- To improve awareness and understanding of AR through effective communication, education and training
- To strengthen the knowledge and evidence base through surveillance and research
- To reduce the incidence of infection through sanitation, hygiene and infection prevention measures
- To optimize the use of antimicrobial medicines in human and animal health
- To develop the economic case for sustainable investment that takes account of the needs of all countries and to increase investment in new medicines, diagnostic tools, vaccines and other interventions



<https://www.who.int/publications/i/item/9789241509763>

6

6

U.S. National Efforts – 5 Goals

- Goal 1. Slow the emergence of resistant bacteria and prevent the spread of resistant infections
- Goal 2. Strengthen national One Health surveillance efforts to combat resistance
- Goal 3. Advance development and use of rapid and innovative diagnostic tests for identification and characterization of resistant bacteria
- Goal 4. Accelerate basic and applied research and development for new antibiotics, other therapeutics and vaccines
- Goal 5. Improve international collaboration and capacities for antibiotic-resistance prevention, surveillance, control and antibiotic research and development



https://aspe.hhs.gov/sites/default/files/migrated_legacy_files/196436/CARB-National-Action-Plan-2020-2025.pdf

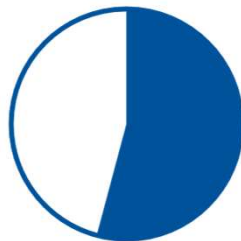
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Antibiotic Overuse is Common In Nursing Homes



75% of nursing home residents receive an antibiotic if stay > 6 months



> 50% of antibiotic prescriptions in nursing homes are unnecessary



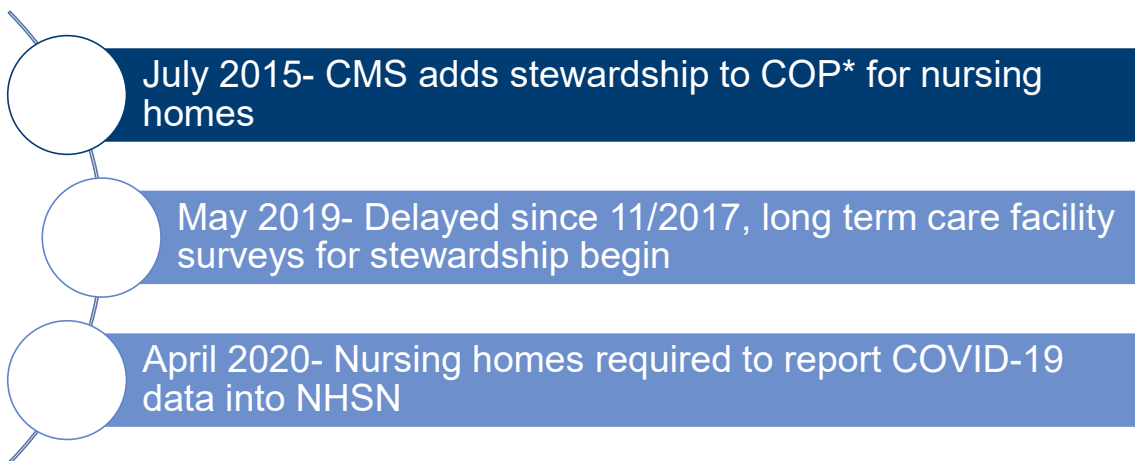
If needed, the antibiotic prescribed is often too broad in spectrum and/or the course is longer than needed

J Am Med Dir Assoc 2012;13:568 e1-13.
Infect Dis Clin N Am 2017;31:619-38.

8

8

U.S. Nursing Home Stewardship Regulatory Timeline



* COP= condition of participation


9

9

Conditions of Participation

What exactly is required?

- have an ASP that includes antibiotic use protocols and a system to monitor antibiotic use
- Needs to be included in the Infection Control program



This document is scheduled to be published in the Federal Register on 10/04/2016 and available online at <https://federalregister.gov/d/2016-23503>, and on [FDsys.gov](https://www.FDsys.gov)

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Medicare & Medicaid Services

42 CFR Parts 405, 431, 447, 482, 483, 485, 488, and 489

[CMS-3260-F]

RIN 0938-AR61

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities

AGENCY: Centers for Medicare & Medicaid Services (CMS), HHS.

ACTION: Final rule.

SUMMARY: This final rule will revise the requirements that Long-Term Care facilities must meet to participate in the Medicare and Medicaid programs. These changes are necessary to

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10

There are Many Resources Available

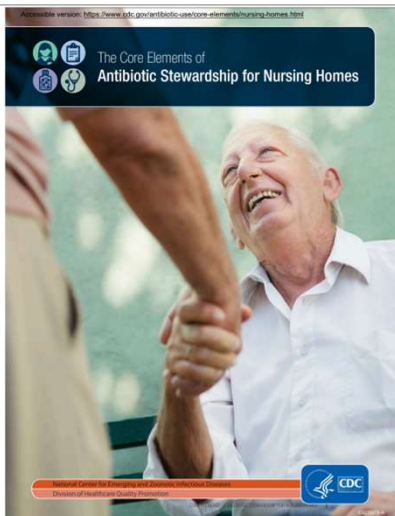


<https://www.cdc.gov/antibiotic-use/core-elements/index.html>

11

11

CDC Core Elements- Nursing Homes



- Leadership commitment**
Demonstrate support and commitment to safe and appropriate antibiotic use in your facility
- Accountability**
Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility
- Drug expertise**
Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility
- Action**
Implement **at least one** policy or practice to improve antibiotic use
- 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
- Education**
Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use

<https://www.cdc.gov/antibiotic-use/core-elements/index.html>

12

12



Leadership Commitment

Demonstrate support and commitment to safe and appropriate antibiotic use in your facility.

Priority examples (select):

Write statements of support

Include stewardship-related duties in job descriptions

Communicate the priority with nursing and prescribers

Create a culture through messaging, education and celebrating improvement

<https://www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-H.pdf>

13

13

Additional Resources

Nursing Home Antimicrobial Stewardship Guide



Agency for Healthcare
Research and Quality



Overview of the Guide

The Nursing Home Antimicrobial Stewardship Guide provides toolkits to help nursing homes optimize their use of antibiotics.

Browse Antimicrobial Stewardship Toolkits

Toolkits on four topic areas are available.

Implement, Monitor, and Sustain a Program

Two toolkits help nursing homes start and maintain antimicrobial stewardship programs.

[Back to Top](#)

<https://www.ahrq.gov/nhguide/index.html>

14

14



Leadership Commitment Resources

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, including adverse drug events, drug interactions, and antibiotic-resistant infections.

As part of our continuing commitment to provide the best care, we are dedicated to improving antibiotic use through antibiotic stewardship. Antibiotic stewardship refers to a set of commitments and actions for the treatment of infections while reducing the adverse effects of use.

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

Sincerely,

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

Nursing Home Antibiotic Stewardship Guide
Implement, Monitor, & Sustain a Program

Sample Letters of support

<https://www.cdc.gov/antibiotic-use/week-of-antibiotic-stewardship/leadership-commitment-letter-6-5x11.pdf>

<https://www.afsp.org/sites/default/files/Implement-Monitor-Sustain-ProgramModel1-start-program.pdf>

15

15

Assessing Nursing Home Stewardship



Checklist for Core Elements of Antibiotic Stewardship in Nursing Homes

The following checklist is a companion to the Core Elements of Antibiotic Stewardship in Nursing Homes. The CDC recommends that all nursing homes take steps to implement antibiotic stewardship activities. Before getting started, use this checklist as a baseline assessment of policies and practices which are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually). Over time, implement activities for each element in a step-wise fashion.

LEADERSHIP SUPPORT	ESTABLISHED AT FACILITY
1. Can your facility demonstrate leadership support for antibiotic stewardship through one or more of the following actions? If yes, indicate which of the following are in place (select all that apply) <input type="checkbox"/> Written statement of leadership support to improve antibiotic use <input type="checkbox"/> Antibiotic stewardship duties included in medical director position description <input type="checkbox"/> Antibiotic stewardship duties included in director of nursing position description <input type="checkbox"/> Leadership monitors whether antibiotic stewardship policies are followed <input type="checkbox"/> Antibiotic use and resistance data is reviewed in quality assurance meetings	<input type="checkbox"/> Yes <input type="checkbox"/> No
ACCOUNTABILITY	
2. Has your facility identified a lead(s) for antibiotic stewardship activities? If yes, indicate who is accountable for stewardship activities (select all that apply) <input type="checkbox"/> Medical director <input type="checkbox"/> Director or assistant director of nursing services <input type="checkbox"/> Consultant pharmacist <input type="checkbox"/> Other: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
DRUG EXPERTISE	

<https://www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-checklist-508.pdf>

16

16



Accountability

Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility

Key points:

- Empower the medical director
- Empower the director of nursing
- Engage the consultant pharmacist
- Partner with infection prevention program coordinator, referral lab, department of health

<https://www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-H.pdf>

17

17



Accountability Resources



Toolkit 1. Start an Antimicrobial Stewardship Program

Tool 2. Roles and Responsibilities for Antimicrobial Stewardship

This table provides an example role and responsibility. Each nursing home should create what the team needs to accomplish and how best to assign roles and responsibilities.

Name	Title	Roles, Responsibilities, and Tasks	Phone & Email
Example	Assistant Director of Nursing	Co-champion and infection control lead. Co-develop agendas. Lead trainings. Monitor the new intervention. Draft policies and procedures; obtain necessary review and approval for new policies and procedures. Help develop staff training. Review whether materials are used. Develop findings related to monitoring the new intervention.	000-000-0000. name@organization.net

3. **Appoint two champions to promote the importance of an antimicrobial stewardship program in the nursing home.** These individuals should lead the effort and be responsible for program outcomes. Two champions are recommended to increase the chance that the antimicrobial stewardship program always has a leader through periods of staff change. These champions should have the following qualities:

- A basic knowledge of antibiotics
- An interest in playing a leadership role in the nursing home
- The respect of his or her peers
- An understanding of how to be a good team player
- An understanding of the importance of improving antibiotic use in nursing homes

<https://www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-H.pdf>

18

18



Drug Expertise

Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility.

Priority areas:

- Work with consultant pharmacists
- Partner with local antibiotic stewardship program leads
- Develop relationships with infectious diseases consultants

<https://www.cdc.gov/antibiotic-use/core-elements/pdfs/core-elements-antibiotic-stewardship-H.pdf>

19

19



Action

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

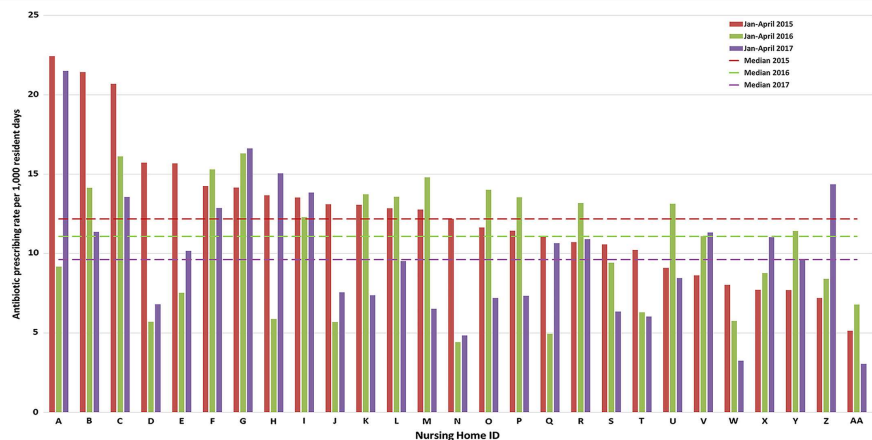
Priority examples (select):

- Policies that support optimal antibiotic use
- Broad interventions to improve antibiotic use
- Pharmacy-based interventions to improve antibiotic use
- Infection and syndrome specific interventions to improve antibiotic use

20

20

Action in Action

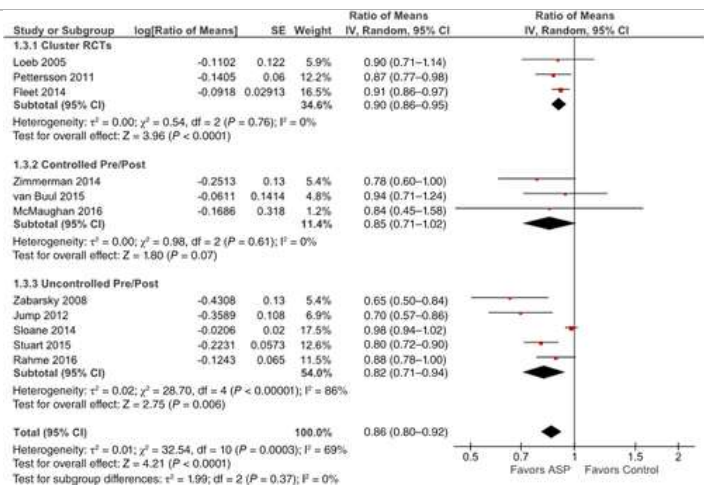


Sloane PD et al. JAGS 2020;68:46-54.

21

21

Action in Action



Wu JH et al J Am Geriatr Soc 2019;67:392-99

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22



Action Resources



Toolkit 1. Start an Antimicrobial Stewardship Program

Tool 5. Draft Policies and Procedures for the Antimicrobial Stewardship Program

This tool includes a draft policy and a draft set of procedures. As needed, the antimicrobial

Determine Whether It Is Necessary To Treat a Potential Infection With Antibiotics

- [Minimum Criteria for Antibiotics Tool](#)
- [Toolkit 1. Suspected UTI SBAR Toolkit](#)
- [Toolkit 2. Common Suspected Infections: Communication](#)
- [Toolkit 3. Minimum Criteria for Three Infections Toolkit](#)

CHOOSE POTENTIAL INFECTION (CHOOSE ONE):

☐ Urinary Tract Infection ☐ Skin and Soft Tissue Infection ☐ Lower Respiratory Tract Infection

Does the resident have:

☐ No indwelling catheter ☐ Indwelling catheter

Notes:

1. Urine cultures should not be performed on a scheduled basis (e.g., monthly).
2. Urine cultures should not be used to identify UTIs in the absence of symptoms.
3. Smelly or cloudy urine is not a symptom of a UTI.
4. Residents with an intermittent catheter or a condom catheter should be evaluated as if they are not catheterized.
5. Urine cultures should be used to identify the most appropriate antibiotic. For residents with acute dysuria, it may be appropriate to initiate empirical antibiotic therapy; but for all other symptoms, wait for a urine culture.
6. For residents who regularly run a lower temperature, use a temperature of 2°F (1°C) above the baseline as a definition of a fever.

<https://www.ahrq.gov/nhgide/toolkits/implement-monitor-sustain-program/toolkit1-start-program.html>

23

23



Action Resources



HOME ABOUT FACILITY TYPE COURSES BROWSE ALL RESOURCES



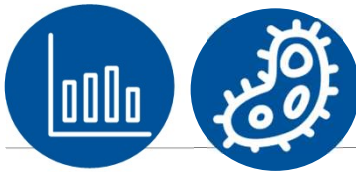
NC CLASP: ANTIBIOTIC STEWARDSHIP RESOURCES FOR NURSING HOME

Minnesota Antimicrobial Stewardship Program Resources for Long-term Care Facilities

<https://www.rochesterpatientsafety.com/index.cfm?Page=For%20Nursing%20Homes>
https://spice.unc.edu/all-resources/?fwp_resource_topics_dropdown=clasp
<https://www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ttc/index.html>

24

24



Tracking & Reporting

Monitor at least one process measure of antibiotic use and at least one outcome from antibiotic use at your facility.

Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant clinical staff.

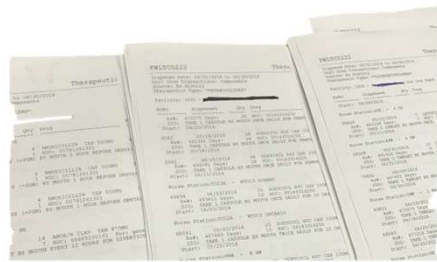
Priority examples (select):

- Process measures: How and why antibiotics are prescribed
- Antibiotic use measures: How often and how antibiotics are prescribed
- Antibiotic use outcome measures: Tracking the adverse outcomes and costs from antibiotics

25

25

Measuring Antimicrobial Use



DRUG NAME	SIG	DATE WRITTEN	QTY	QTY DISP
DOXYCYCLINE 100 MG CAPSULE	TAKE ONE CAPSULE PO TWICE DAILY X 7 DAYS (BRONCHITIS/COPD)	27-Jan-16	14	14
CIPROFLOXACIN 500MG TABS(*)	ONE TABLET PO TWICE DAILY, (OSTEOMYELITIS) (DC 2/8/16)	4-Jan-16	70	55
VANCOMYCIN 1 GM ADD-VAN VIA	INFUSE 1GM I.V. EVERY 12 HOURS OVER 60-90 MINUTES (*Activate before use*)	12-Jan-16	60	8
VANCOMYCIN 1 GM ADD-VAN VIA	INFUSE 1GM I.V. EVERY 12 HOURS OVER 60-90 MINUTES (*Activate before use*)	25-Jan-16	28	8
SULFAMETHOXAZOLE/TMP DS TAB	TAKE 1 TABLET BY MOUTH TWICE DAILY X 14 DAYS. (PYELONEPHRITIS)	11-Jan-16	28	2
EPIDIOXIME 200 MG TABLET	TAKE ONE TABLET PO EVERY 12 HOURS FOR 10 DAYS (PYELONEPHRITIS)	12-Jan-16	20	7

26

Financial Data

Target audience: Administrators

- Most common measure of antibiotic use
- Must choose between purchases vs. billing data



Pros:

- Easily available data
- Often tied to institutional goals for stewardship programs
- Likely to be a “win” given historical effect of stewardship on this measure

Cons/Limitations:

- Must remember to consider changes in contract pricing
- Non-administrators less likely to be influenced by results

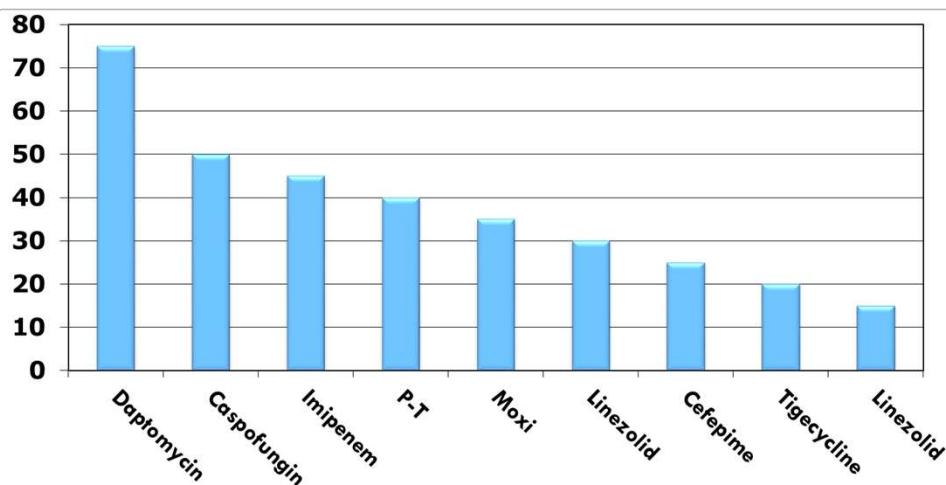


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27

Top 10 Antibiotics: By Cost



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28

Defined Daily Dose

Target Audience: Administrators and Epidemiologists

- Standardized definition of daily antibiotic dose
- Created by the World Health Organization
- Correction factor: $\frac{\text{Total Units (i.e. mg) Drug}}{\text{DDD Correction Factor}}$

Pros:

- Attempts to convert raw purchasing data into utilization data
- Allows comparisons with other institutions
- Easy to calculate

Cons:

- Not everyone agrees with the DDD correction factors
- Many use institution-specific correction factors (prescribed daily dose)
- Not patient level information



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29

Address http://www.whocc.no/atc_ddd_index/?code=J01CR05

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WHO Collaborating Centre for Drug Statistics Methodology

News

ATC/DDD Index

Updates included in the ATC/DDD Index

ATC/DDD methodology

ATC

DDD

ATC/DDD alterations, cumulative lists

ATC/DDD publications

Use of ATC/DDD

Courses

Meetings/open session

Deadlines

Links

New search Show text from Guidelines

J **ANTIINFECTIVES FOR SYSTEMIC USE**

J01 **ANTIBACTERIALS FOR SYSTEMIC USE**

J01C **BETA-LACTAM ANTIBACTERIALS, PENICILLINS**

J01CR **Combinations of penicillins, incl. beta-lactamase inhibitors**

ATC code	Name	DDD	U	Adm.R	Note
J01CR05	piperacillin and enzyme inhibitor	14	g	P	Refers to piperacillin

List of abbreviations

Last updated: 2009-10-27

http://www.whocc.no/atc_ddd_index/



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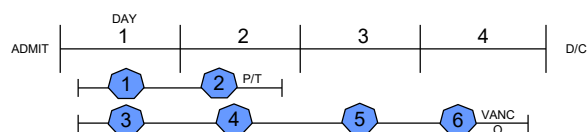


30

Are Additional Metrics Available?

Number of antibiotic days

- Note: this is not the same as Days of Therapy



- DOT:
 - Piperacillin/tazobactam = 2
 - Vancomycin = 4
- Antibiotic days:
 - Overall = 4

Polk et al. CID 2011;53(11):1100-10

Data Example

DRUG NAME	SIG			QTY	QTY
	TAKE ONE CAPSULE PO			DATE WRITTEN AUTH	DISP
DOXYCYCLINE 100 MG CAPSULE	TWICE	DAILY X 7 DAYS	(BRONCHITIS/COPD)	27-Jan-16	14 14
CIPROFLOXACIN 500MG TABS(*)	ONE TABLET PO TWICE	DAILY. (OSTEOMYELITIS)	(DC 2/8/16)	4-Jan-16	70 55
VANCOMYCIN 1 GM ADD-VAN VIA	INFUSE 1GM I.V. EVERY 12	HOURS OVER 60-90 MINUTES	(*Activate before use*)	12-Jan-16	60 8
VANCOMYCIN 1 GM ADD-VAN VIA	INFUSE 1GM I.V. EVERY 12	HOURS OVER 60-90 MINUTES	(*Activate before use*)	25-Jan-16	28 8
SULFAMETHOXAZOLE/TMP DS	TAB	TAKE 1 TABLET BY MOUTH	(PYELONEPHRITIS)	11-Jan-16	28 2
CEFPodoxime 200 MG TABLET	TAKE ONE TABLET PO EVERY	12 HOURS FOR 10 DAYS	(PYELONEPHRITIS)	12-Jan-16	20 5

Calculations:

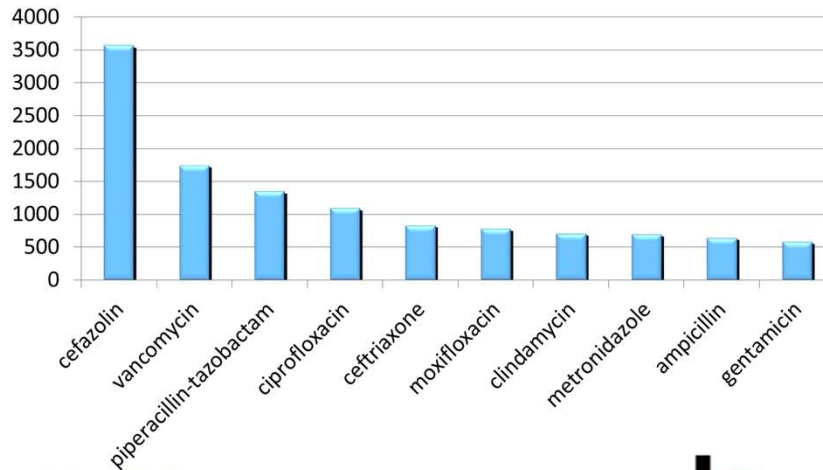
Doxycycline: 7 DOT

Ciprofloxacin: 55/2= 27.5- 28 DOT

Vancomycin: 8/2= 4 DOT

DRUG NAME	SIG			QTY	QTY	
	TAKE ONE CAPSULE PO			DATE WRITTEN AUTH	DISP	DOT
DOXYCYCLINE 100 MG CAPSULE	TWICE	DAILY X 7 DAYS	(BRONCHITIS/COPD)	27-Jan-16	14	14 7
CIPROFLOXACIN 500MG TABS(*)	ONE TABLET PO TWICE	DAILY. (OSTEOMYELITIS)	(DC 2/8/16)	4-Jan-16	70	55 28
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CEFPodoxime 200 MG TABLET	TAKE ONE TABLET PO EVERY	12 HOURS FOR 10 DAYS	(PYELONEPHRITIS)	12-Jan-16	20	5 3

Top 10 Antibiotics: By Number of Patients Treated



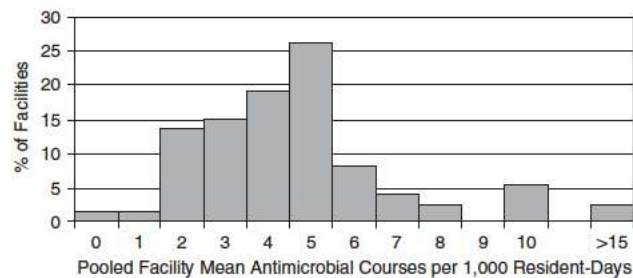
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33

New Starts

Courses/starts per 1,000 resident days



- Advantages: easier to measure
- Disadvantages: does not tell the whole picture- what about durations and overall exposure
 - Remember- a single course of chronic UTI prophylaxis is only started once!!!

Benoit SR et al. JAGS 2008;56:2039-44.

dason DUKE ANTIMICROBIAL STEWARDSHIP OUTREACH NETWORK

34

Proportion of Residents Receiving Antibiotics

Number (or percentage) of patients receiving antimicrobials

Advantages:

This number can help target education.

Disadvantages:

This can still underestimate key prescribing practices.

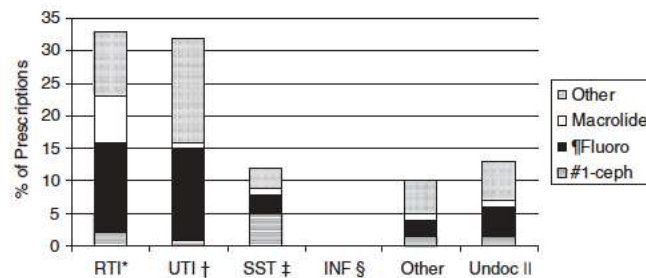
Table 2. Comparison of antibiotic use and cost indicators by physician, February 1999-September 2001*

Physician code	Incidence	AUR	Cost/RCD	Cost/Ab-day
A	3.7 ± 1.3	3.7 ± 1.6	\$0.18 ± 0.11	\$5.49 ± 2.50
B	4.9 ± 1.4	4.7 ± 1.3	\$0.25 ± 0.12	\$5.35 ± 1.83
C	4.6 ± 2.7	4.2 ± 2.2	\$0.30 ± 0.20	\$7.43 ± 4.52
D	6.5 ± 2.4	6.5 ± 2.5	\$0.39 ± 0.19	\$5.87 ± 1.72
E	5.5 ± 1.4	4.7 ± 1.3	\$0.25 ± 0.12	\$5.31 ± 1.74
F1	4.1 ± 2.1	3.3 ± 1.9	\$0.19 ± 0.12	\$6.01 ± 3.37
F2	6.1 ± 1.9	5.5 ± 2.1	\$0.27 ± 0.17	\$5.00 ± 1.93
P value	<.001	<.001	<.001	.08

RCD, Resident care-days; Ab, antibiotic; AUR, antimicrobial utilization ratio; Cost/RCD = Total cost for antibiotics per month/total resident care-days per month; cost per A Day = Total cost for antibiotics per month/total antibiotic-days per month; incidence = Number of antibiotic courses started per 1000 resident care-days per month; AUR = Number of antibiotic days per month/number of resident care-days per month multiplied by 100 (%).
*Values are mean ± standard deviation per month for 22-month study period.
Mylotte JM and Neil M. AJG 2003;18-25.

35

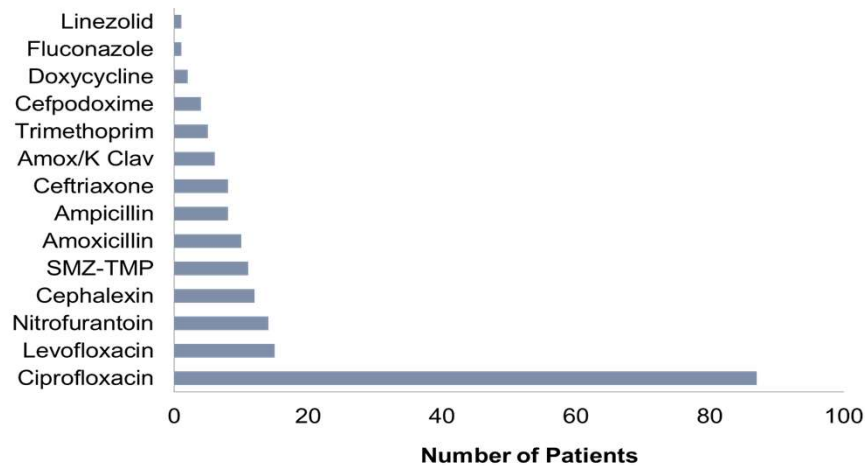
Understanding Why Antibiotics are Used



Benoit SR et al. JAGS 2008;56:2039-44.

36

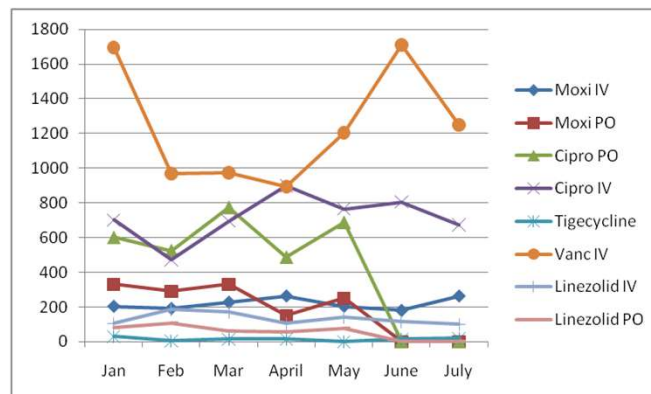
Most Common Agents Used for UTI



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37

Time Trends More Useful



University of Rochester Medical Center

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OUTREACH
NETWORK

38

Getting to the bottom of the problem....

Measures of antibiotic use are difficult to interpret and compared when examined alone

DDD
DOT
Cost

Numerator Values



A denominator is needed to standardize measurement of antibiotic use!

Available Denominators for Measuring Antibiotic Use

Admissions:

- CDC Definition: The aggregate number of patients admitted to the facility starting on the first day of each month through the end of the calendar month

Patient Days:

- CDC Definition: A daily count of the number of patients in the patient care location during a time period. To calculate patient days, for each day of the month, at the same time each day, record the number of patients.

Days Present:

- CDC Definition: number of patients present in a given location for any portion of any day

Sources for Antibiotic Data in Nursing Homes

Purchasing data

- -Can be difficult for dispensing from a central pharmacy location to many facilities

Dispensing data

- Can be difficult with a lot of floor stock

Electronic MAR

Paper and pencil 😊

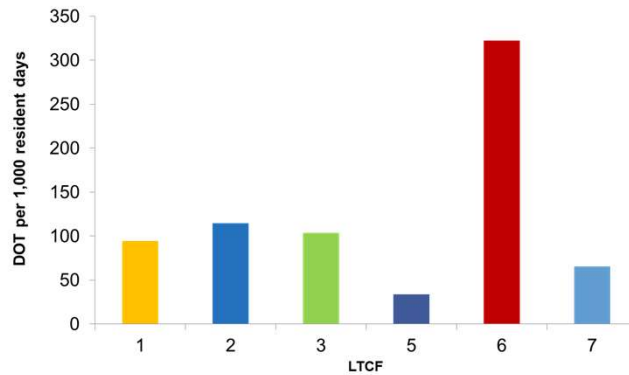
- Point prevalence survey

There is no substitute for chart review (in some cases)...

Measures of antibiotic use

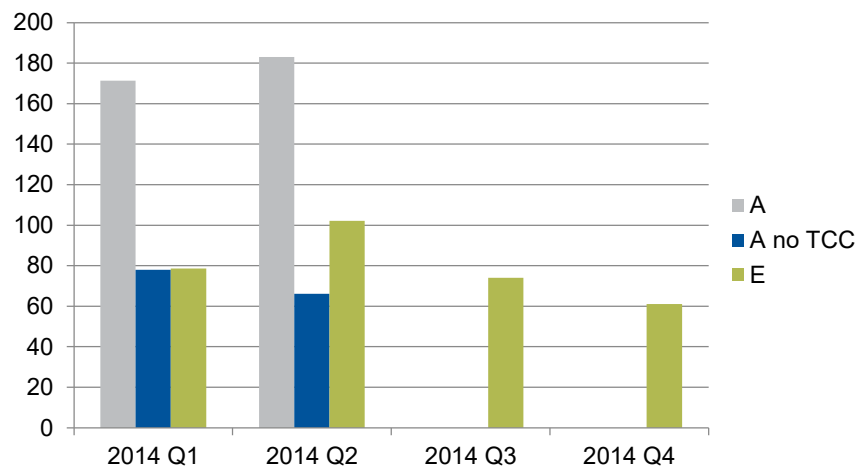
Point prevalence of antibiotic use. Point prevalence surveys of antibiotic use track the proportion of residents receiving antibiotics during a given time period (i.e., a single-day, a week, or a month). Because the data collection is time-limited, point prevalence surveys are an easier way to capture antibiotic use data. In addition to providing a snap-shot of the burden of antibiotic use in a facility, point-prevalence surveys can capture specific information about the residents receiving antibiotics and indications for antibiotic therapy.¹ Unlike other antibiotic use measures which focus only on the prescriptions initiated in the nursing home, prevalence surveys could also include data on residents admitted to the facility already receiving an antibiotic to track the total burden of individuals at risk for complications from antibiotic use (e.g., *C. difficile* infection).

Large Variation in Antibiotic Use by LTCF



43

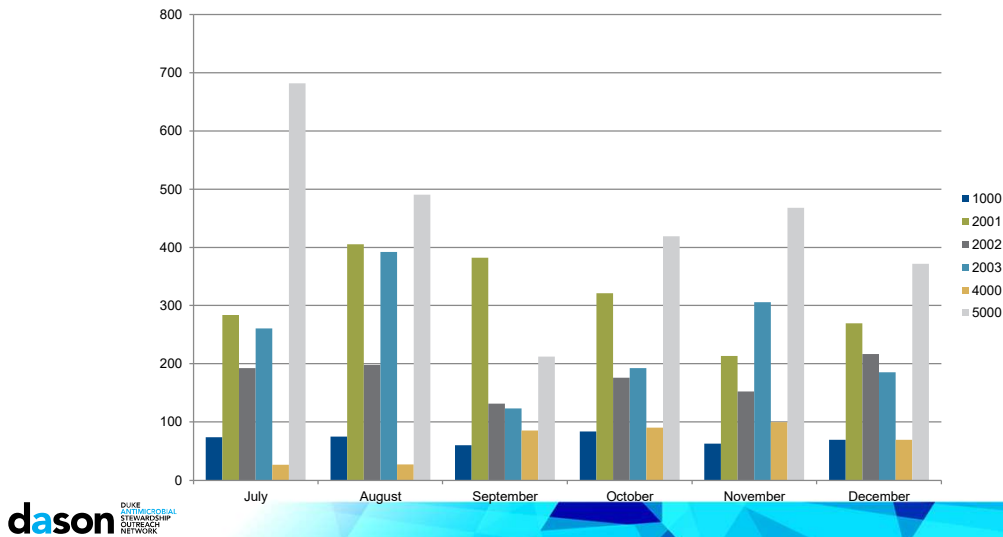
Location Specific Data are Important



Based on Dispensing Data

44

Time Trends Also Help



45

Do we know our target?

Less is better:

Table 3. Antibiotic-Related Adverse Outcomes Among Residents Living in Nursing Homes With Low, Medium, and High Antibiotic Use^a

Characteristic	Antibiotic Use, No. (%)		
	Low (n = 33 822)	Medium (n = 31 425)	High (n = 24 943)
<i>Clostridium difficile</i>	274 (0.8)	268 (0.9)	221 (0.9)
Diarrhea or gastroenteritis	3347 (9.9)	3388 (10.8)	2889 (11.6)
Infection with antibiotic-resistant organism	412 (1.2)	431 (1.4)	319 (1.3)
Antibiotic allergy	13 (0.0)	25 (0.1)	22 (0.1)
General adverse event from medication	96 (0.3)	124 (0.4)	88 (0.4)
Any antibiotic complication with or without potential for indirect harms to nonrecipients (primary composite outcome ^b)	3869 (11.4)	3890 (12.4)	3311 (13.3)
Only antibiotic complications with potential for indirect harms to nonrecipients (secondary composite outcome ^b)	3797 (11.2)	3801 (12.1)	3237 (13.0)

Daneman N et al. *JAMA Internal Medicine* 2015;175:1331-9.

46

Making the Data Actionable

Data alone will not answer all the questions, but it allows more refined reviews

- Who?- Who is writing for the antibiotics?
- What?- What is the most frequently used antibiotic?
- Where?- Are there units that tend to use the most antibiotics?
- When?- Are there times when antibiotics are most likely to be prescribed?
- Why? - What is the most common reason antibiotics are used?

From there

- Conversations become more productive
- Guidelines for use can be created with provider input
- Remember- always ask why- the reasons behind the use might not be what you had guessed!



47



Tracking & Reporting Resources

- **Tool options for monitoring**
 - **Antibiotic Use Tracking Sheet** (tool 2) ([PDF](#) | [Word](#) | [Excel](#))
 - **Sample Monthly Summary Reports** to review progress (tool 3) ([PDF](#) | [Word](#) | [Excel](#))
 - **Quarterly or Monthly Prescribing Profile** to report findings back to prescribing clinicians (tool 4) ([PDF](#) | [Word](#))



Agency for Healthcare
Research and Quality

<https://www.ahrq.gov/nhguide/toolkits/implement-monitor-sustain-program/toolkit2-monitor-sustain-program.html>

48

48



Tracking & Reporting Resources



TRACKING ANTIBIOTIC USE

EXCEL TRACKING WORKSHEETS AND INSTRUCTIONS:

Monthly Antibiotic Tracking Worksheet (NEW)

Summary Antibiotic Tracking Worksheet (NEW - Use with monthly tracking sheet)

Antibiotic Tracking Sheets Instructions (NEW)

NYSDOH UTI Tracking Worksheet

NYSDOH UTI Tracking Worksheet Instructions for Use



Antibiotic Statistical Trending Report				Facility Name:				Unit/Floor:														
Month/Year-->				Jan-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01
New ABR Starts for Month																						
New ABR Start Rate (New ABR Starts for Month/1000 Resident Days)																						
Days of Therapy Rate (Monthly Days of Therapy/1000 Resident Days)																						
Did NOT Meet Facility-Adapted Criteria																						
Not Re-Assessed within 48-72 hours of Facility Start																						

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

49

49



Education

Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use.

Priority examples (select):

- Education to prescribers
- Education to nursing
- Education to residents and families

50

50



Education Resources



Nursing Home Antimicrobial Stewardship Guide Educate & Engage Residents, Family

Toolkit To Educate and Engage Residents and Family Members



Learning Center

Tool 3. Resident Information Sheet: Antibiotic-Res

One of your tests showed that you have a type of bacteria that ca antibiotics you have been taking. [Optional: Insert specific info for the culture site, and which antibiotics are not effective.] It is imp this and learn how it may affect you.

This information sheet will answer questions and help you under your infection.

Are you looking for education on essential health care topics? The Learning Center offers free courses for health care settings. Our goal is to share education to help you improve the quality, efficiency and value of healthcare.



Anywhere



Break-Sized



Current

<https://learningforquality.org/login/?redirect=%2F>

<https://www.ahrq.gov/nhguide/toolkits/implement-monitor-sustain-program/index.html>

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



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51

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