

WELCOME!

Consultant Pharmacist Training in Antimicrobial Stewardship in Long-Term Care

**Session I: Introduction to the
Core Elements of Antibiotic
Stewardship in Nursing Homes**



Nebraska Antimicrobial Stewardship
Assessment and Promotion Program

August 18, 2023

Today's Agenda



- Introductions/Housekeeping
- **Presentation: Introduction to the Core Elements of Antibiotic Stewardship in Nursing Homes**
- Questions and Answers
- Case Scenario
- Closing

Housekeeping

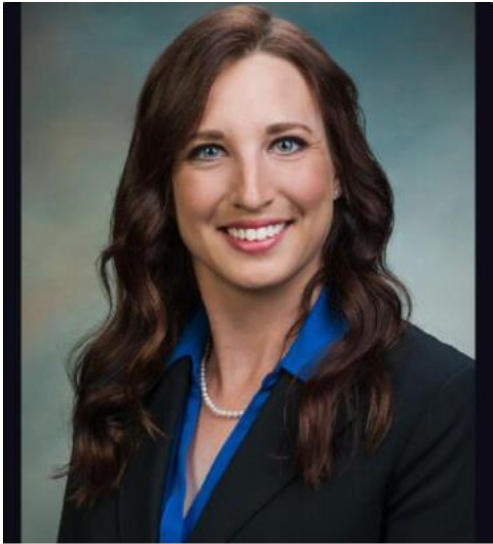
This presentation will be recorded, and a recording link will be emailed to all registered attendees.

Copies of the slides presented today will be emailed to attendees following the webinar.

Please complete the attendance survey in the chat.



Meet Our Team



Jenna Preusker

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Muhammad Salman Ashraf

MBBS
Nebraska DHHS HAI/AR Program Director;
Associate Professor, Division of Infectious
Diseases



Trevor Van Schooneveld

MD, FSHEA, FACP
Infectious Disease Physician; Medical Director of
ASAP Program; Associate Medical Director of
ICAP Program

[Our Team - ASAP \(nebraskamed.com\)](http://nebraskamed.com)



Continuing Pharmacy Education Credit

Program evaluations (including a learning assessment) for Continuing Pharmacy Education must be completed within 30 days of the live event (by **September 18, 2023**). The Nebraska Pharmacists Association designates this knowledge-based activity for 1.0 ACPE contact hour.

An evaluation link will be emailed to attendees following the webinar.

Provider Statement



The Nebraska Pharmacists Association is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. CPE Credit will be issued upon successful completion of each session evaluation (including learning assessment questions), with each session providing 0.1 CEU. Participants have 30 days following the session to complete the session evaluation.



UNMC ID Project ECHO

This program consists of a year-long educational series through UNMC ID Project ECHO.

Project ECHO (Extension for Community Healthcare Outcomes) is an innovative program designed to create virtual communities of learners by bringing together healthcare professionals and subject matter experts using videoconference technology, brief lecture presentations, and case-based or situation-based learning.



This antibiotic stewardship focused educational series will use the ECHO model for training consultant pharmacists in long-term care.

Program Agenda



Didactic Sessions (6)

Session I: Introduction to the Core Elements of Antibiotic Stewardship in Nursing Homes
Date/Time: Friday, August 18, 2023, 12:00 – 13:00 CST

Session II: Appropriateness of Antibiotics for Infections in Long-Term Care
Date/Time: Friday, September 22, 2023, 12:00 – 13:00 CST

Session III: Antimicrobial Stewardship Program Implementation and Practical Implementation Toolkit, Date/Time: Monday, October 16, 2023, 12:30 – 13:30 CST

Session IV: Using Data to Drive an Antimicrobial Stewardship Program
Date/Time: Friday, November 17, 2023, 12:00 – 13:00 CST

Session V: Microbiology 101 for the Consultant Pharmacist
Date/Time: Friday, December 15, 2023, 12:00 – 13:00 CST

Session VI: Optimizing Antibiotic Therapy: Managing Adverse Events, Drug Interactions, and Renal Adjustments, Date/Time: Friday, January 26, 2024, 12:00 – 13:00 CST



Office Hours Sessions (4)

Session I: Becoming an Effective Antimicrobial Stewardship Educator, Date TBD: March 2024

Session II: Communication Strategies for Antimicrobial Stewards, Date TBD: April 2024

Session III: Putting Antimicrobial Stewardship Data into Action, Date TBD: May 2024

Session IV: Navigating barriers in Antimicrobial Stewardship, Date TBD: June 2024

Participants who successfully complete all 6 didactic sessions and attend at least 2 of 4 live office hours sessions will receive a certificate of course completion from Nebraska ASAP.



Today's Presenter

Trevor Van Schooneveld, MD, FSHEA, FACP

- Professor, UNMC Division of Infectious Diseases
- Program Director, UNMC Infectious Diseases Fellowship
- Medical Director, Nebraska Medicine Antimicrobial Stewardship Program
- Medical Director of Nebraska ASAP
- Associate Medical Director of ICAP Program

Dr. Van Schooneveld has been a part of the ASAP and ICAP grant team since 2017.

Education:

- MD: University of Nebraska Medical Center
- Residency Internal Medicine: UNMC
- Infectious Diseases Fellowship: Creighton University

Certifications:

- Board Certified in Internal Medicine
- Board Certified in Infectious Diseases

Clinical Interests/ Expertise:

- Antimicrobial Stewardship
- C. difficile infections
- Infection Control
- Antimicrobial resistance



Introduction to the Core Elements of Antibiotic Stewardship in Nursing Homes

Trevor Van Schooneveld MD
ASAP Medical Director



Nebraska Antimicrobial Stewardship
Assessment and Promotion Program

Objectives

- Discuss the driving forces behind the need for antimicrobial stewardship.
- Identify the CDC Core Elements of antimicrobial stewardship in long-term care facilities.
- Describe antimicrobial stewardship strategies.

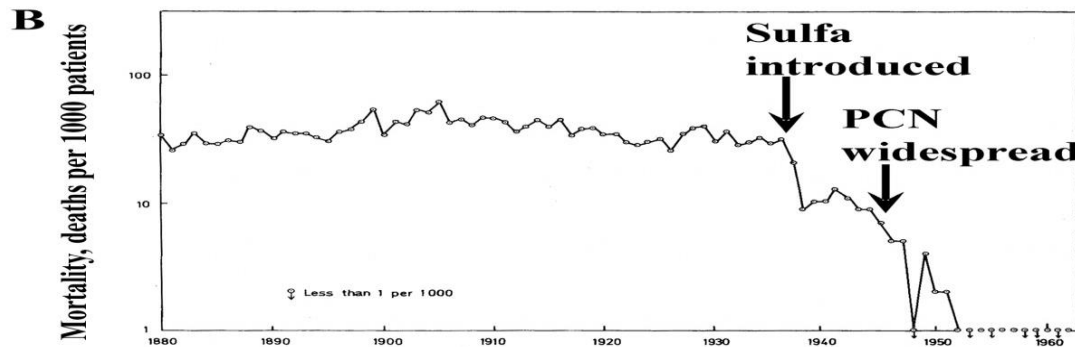
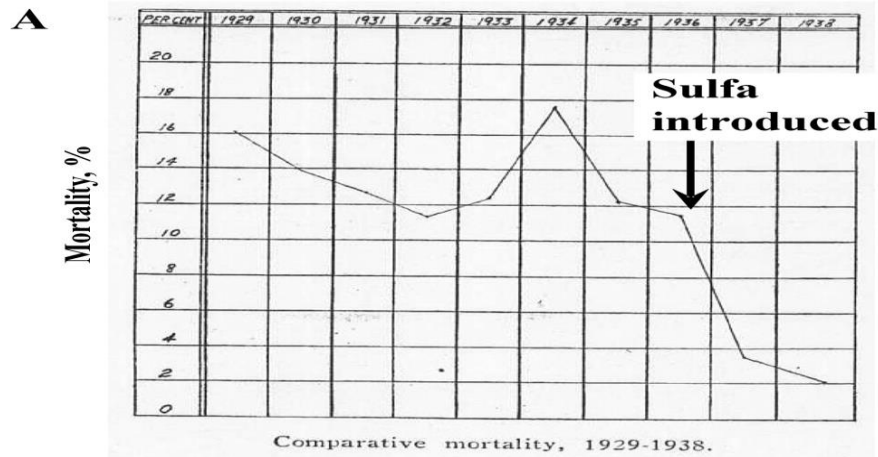
Future Topics

- Appropriateness of Antibiotics for Infections in Long-Term Care
- Antimicrobial Stewardship Program Implementation and Practical Implementation Toolkit
- Using Data to Drive an Antimicrobial Stewardship Program
- Microbiology 101 for the Consultant Pharmacist
- Optimizing Antibiotic Therapy: Managing Adverse Events, Drug Interactions, and Renal Adjustments
- Variety of Roundtable discussions (education, communication, data into action, overcoming barriers)

Impact of Antimicrobials

(A) Mortality rates for erysipelas at Cook County Hospital 1929-1938

(B) Mortality of erysipelas from Norwegian national registry



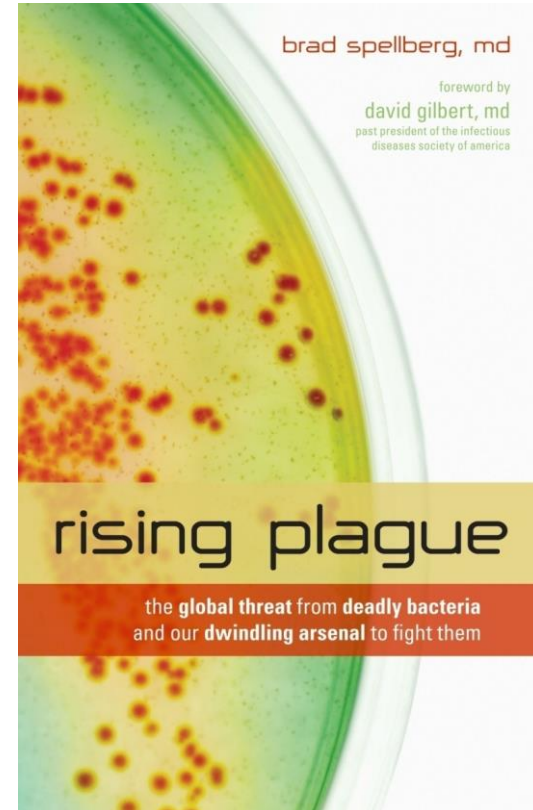
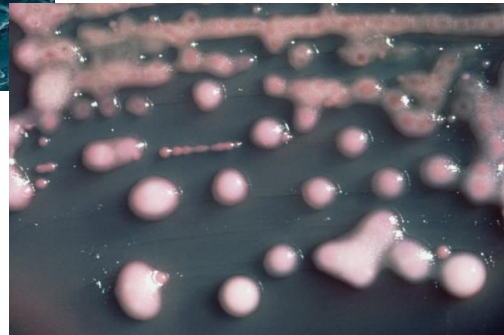
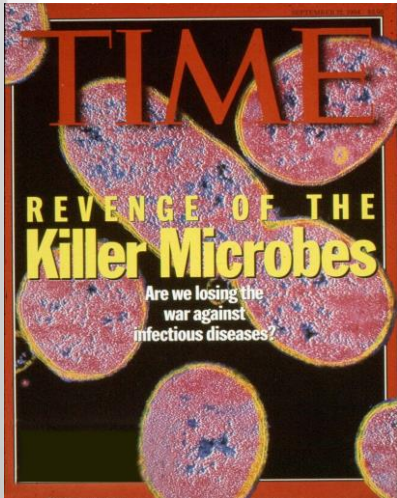
Drug-Defying Germs From India Speed Post-Antibiotic Era

By Jason Gale and Adi Narayan - May 7, 2012
Bloomberg Markets Magazine

guardian.co.uk

Antibiotics' efficiency wanes due to global spread of drug-resistant bacteria

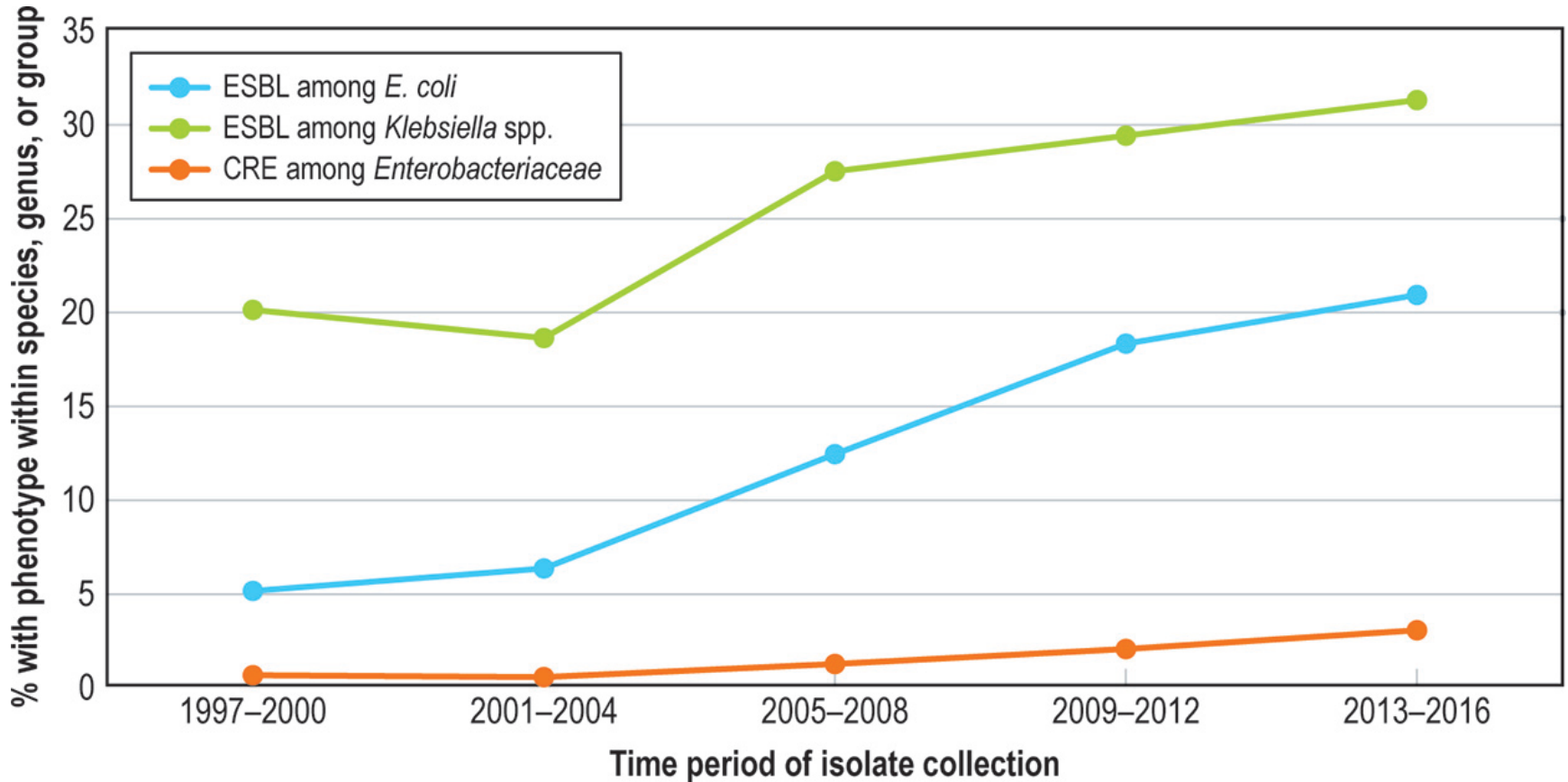
Gene giving high levels of resistance to drugs found in increasingly prevalent intestinal bacteria



Drug-resistant superbugs reach 3 states The Seattle Times

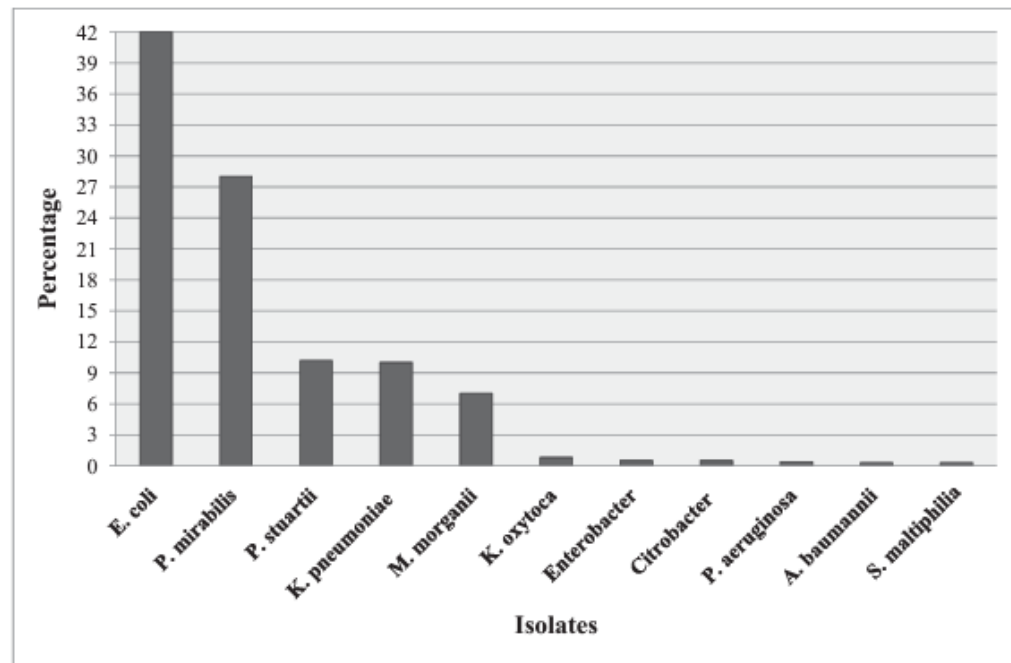


20 Year Trend in ESBL and CRE *Enterobacteriaceae* (1997-2016)



Antimicrobial Resistance in LTCF

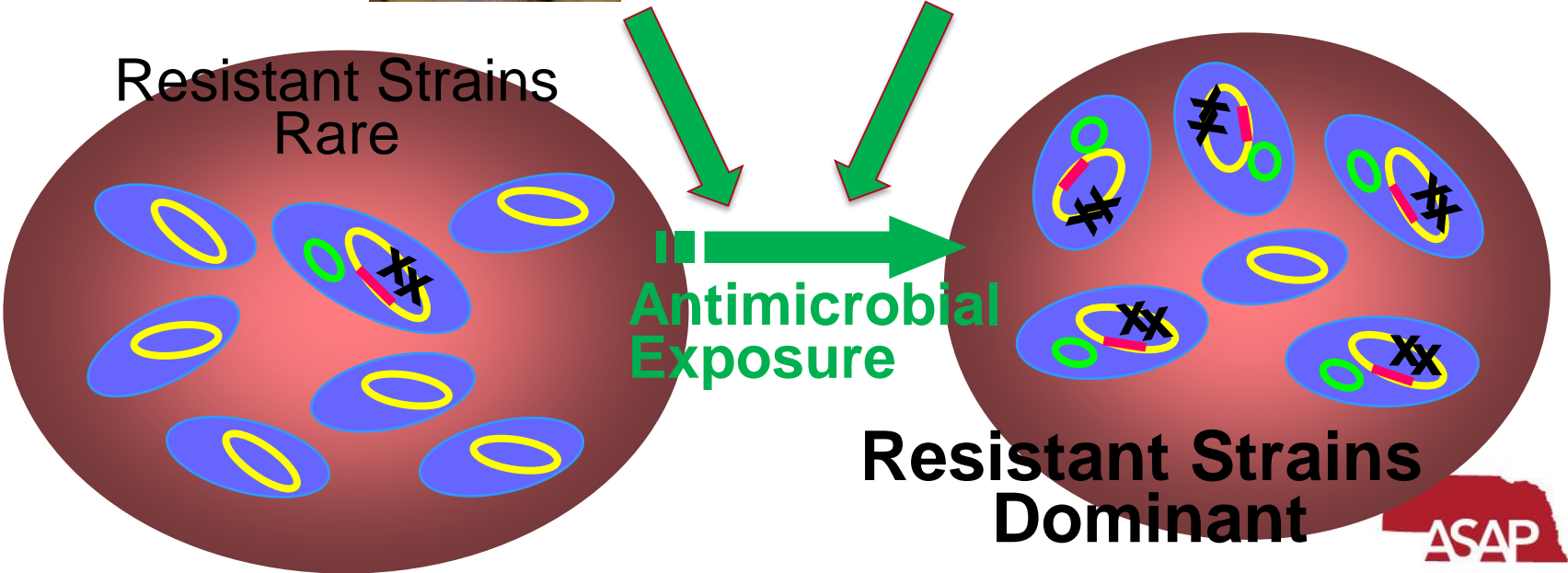
Estimated 27% of LTCF residents colonized by resistant Gram negative rod



Where Does Resistance Come From?



Antimicrobial Exposure



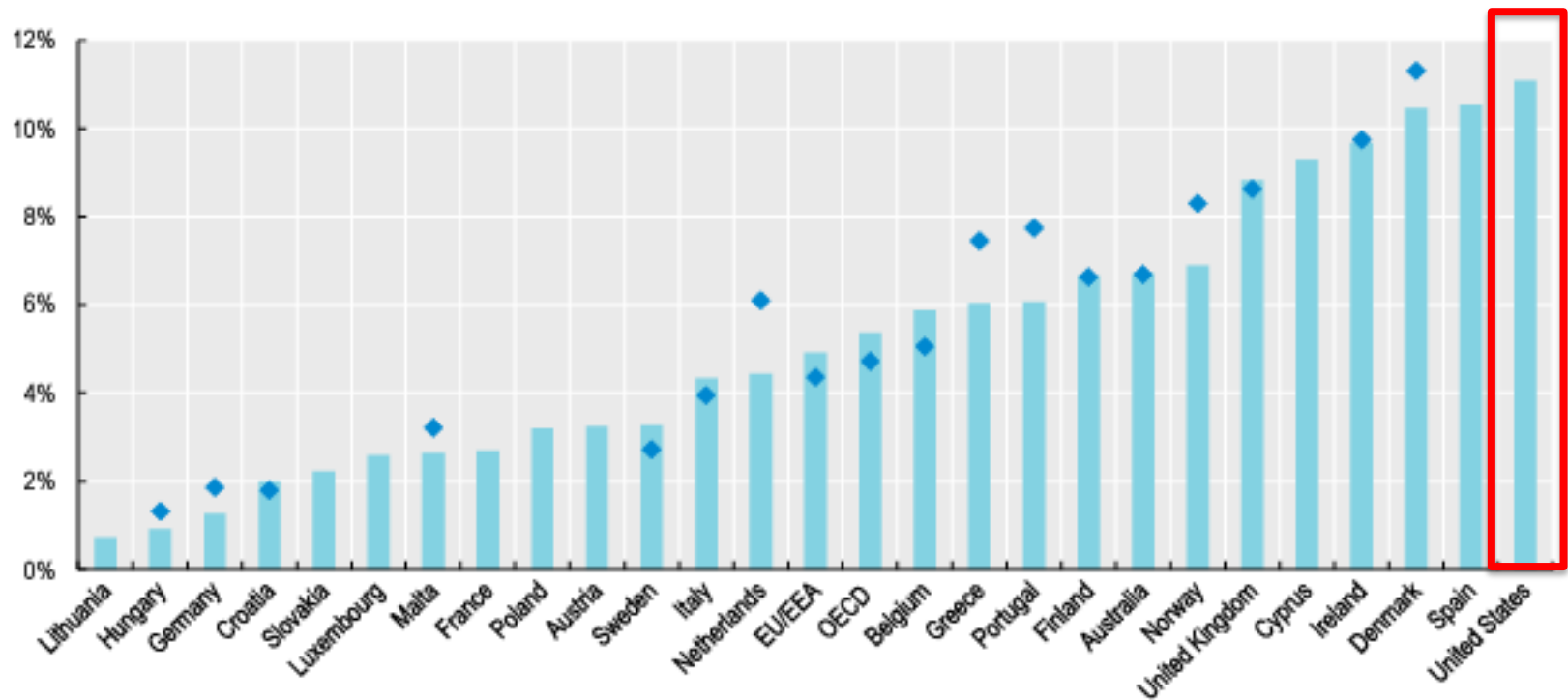
Antibiotics Are Unique

- They are the only drugs that lose efficacy over time and must be continually replaced
- They are the only drugs that need to be used sparingly to prolong their efficacy
- They are the only drugs that we actively discourage new agent use for non-financial reasons
- They are the only drugs where how I use them affects your patients
- **Antimicrobials are a shared natural resource which must be preserved for future generations**



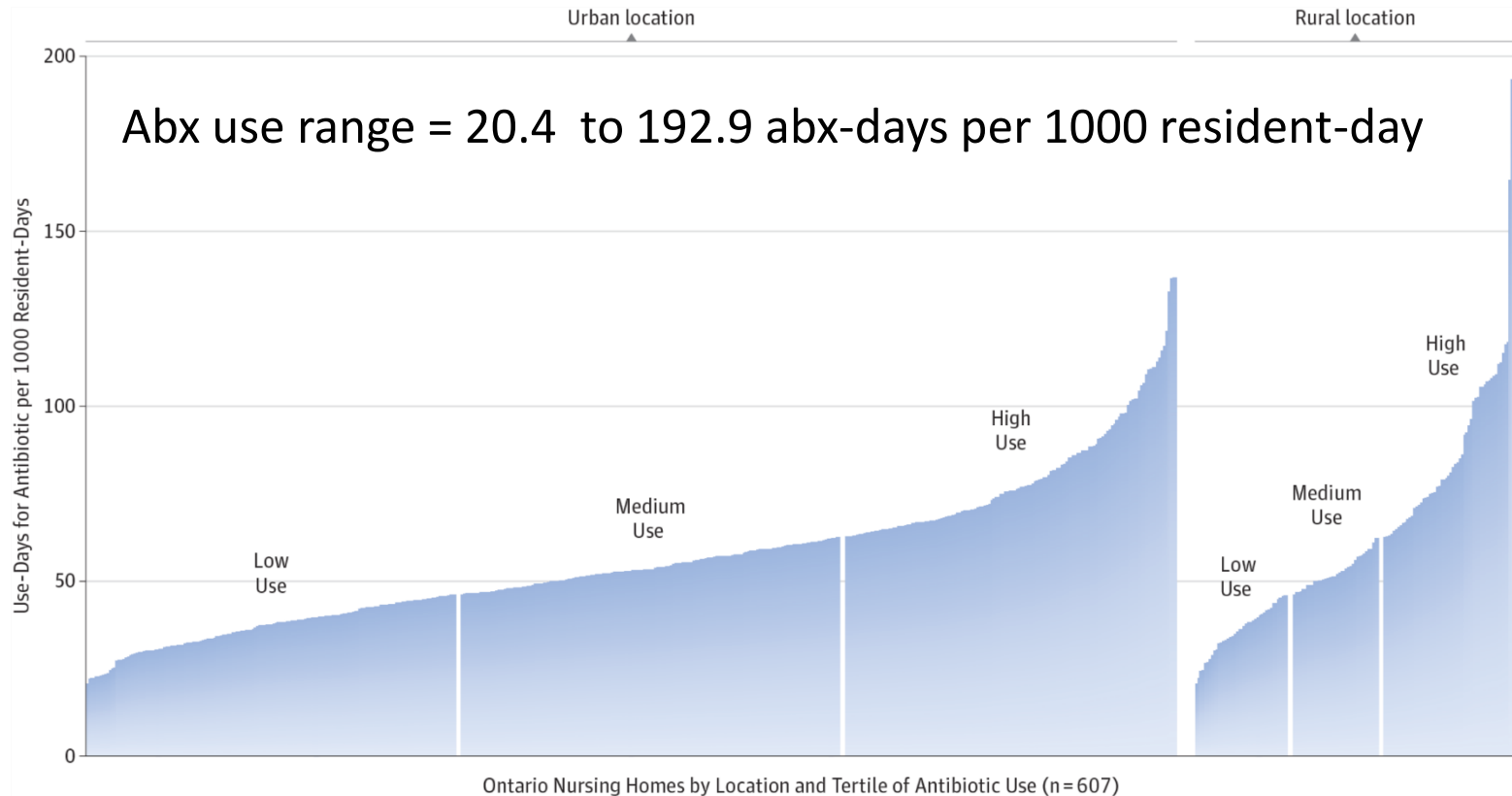
Percentage of LTCF Residents with at Least One Antimicrobial Prescription

Percentage of LTCF residents with at least one systemic antimicrobial prescription on survey dates (see note)



Antibiotic Use is Highly Variable

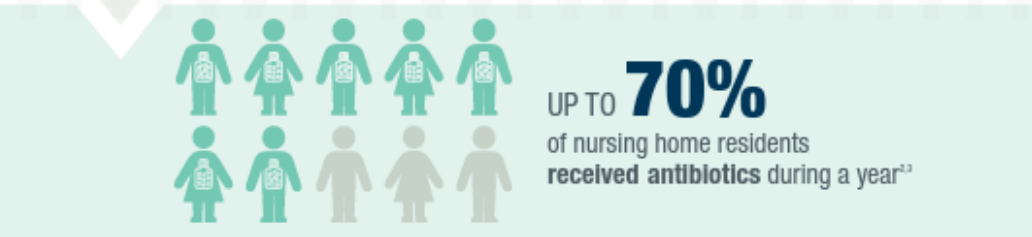
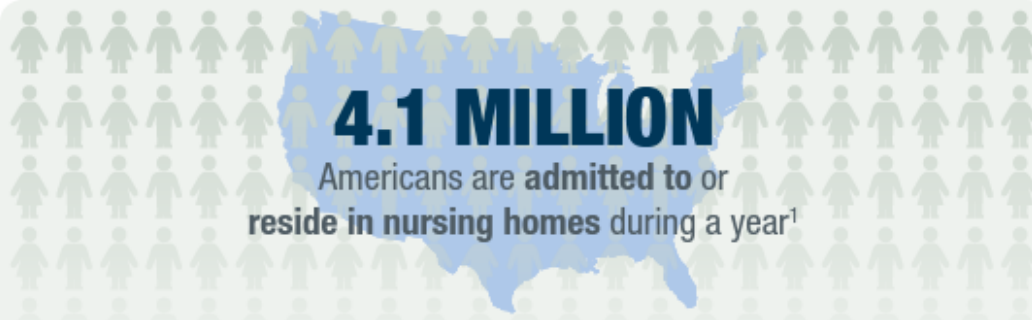
Antibiotic use measured in 607 LTCF in Ontario from 1/2010 to 12/2011



Increased antibiotic prescribing associated with increased antibiotic-related adverse event (*C. difficile*, diarrhea, resistant infection, etc.)



Antibiotic Stewardship in Nursing Homes



CDC recommends

7 CORE ELEMENTS
for antibiotic stewardship in nursing homes

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

What is Antimicrobial Stewardship?

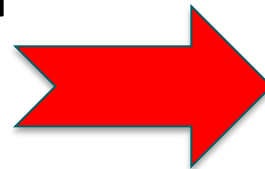
Antimicrobial Stewardship refers to processes designed to optimize the use of antimicrobials

– Includes interventions to guide clinicians in:

- Determining **when** antibiotics are needed
- **What** agent(s) to use
- **How to** dose, what route and what duration

– Focus is on **patient and public health** with goals:

- Cure or prevent infection
- Minimize toxicity
- Minimize resistance



Reduce treatment costs

What are the Core Elements?

- Structural and procedural components that are associated with successful stewardship programs
- Intended to be an adaptable framework that institutions can use to guide efforts to improve antibiotic prescribing
- Form the foundation of accreditation standards





Regulatory Requirements

- In 2017, the Conditions of Participation (CoP) for Centers for Medicare and Medicaid Services (CMS) published final rule requiring LTCFs to develop an Infection Prevention and Control Program that includes an Antimicrobial Stewardship Program
 - 42 CFR 483.80(a)(3)–pertaining to antibiotic stewardship program

At a minimum, includes antibiotic use protocols and a system to monitor antibiotic use to improve resident outcomes and reduce resistance



The Core Elements of Antibiotic Stewardship for Nursing Homes



National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion



CORE ELEMENTS OF ANTIBIOTIC STEWARDSHIP FOR NURSING HOMES | 1
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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





CE #1: Leadership Commitment

Facility leadership commitment to safe and appropriate antibiotic use

“Leadership support” is the most reported barrier to patient safety improvement projects

- A senior executive has the ability:
 - To impact structure of an antimicrobial stewardship program
 - To push consistency across the system
 - To provide material resources and finances



Identifying a Facility Leader

Can be an...administrator or executive director, CEO, VP, medical director

- Does not have to have clinical knowledge, but a desire to improve patient safety!
- Collaboration can...
 - Develop strategies for the entire organization
 - Realize fiscal benefits for the facility
 - Quantify and report reductions in adverse events (e.g. *Clostridioides difficile* rates)





Examples of Commitment

Priorities

- **Write statements** in support of **improving antibiotic use** to be shared with staff, residents, families
- **Include stewardship tasks in position descriptions** for the medical director, clinical RN leads, and consultant pharmacists
- **Communicate** with RN staff and prescribers the facilities **expectations** about use of antibiotics and the monitoring and enforcement of policies
- **Create a culture of safety** through messaging and education

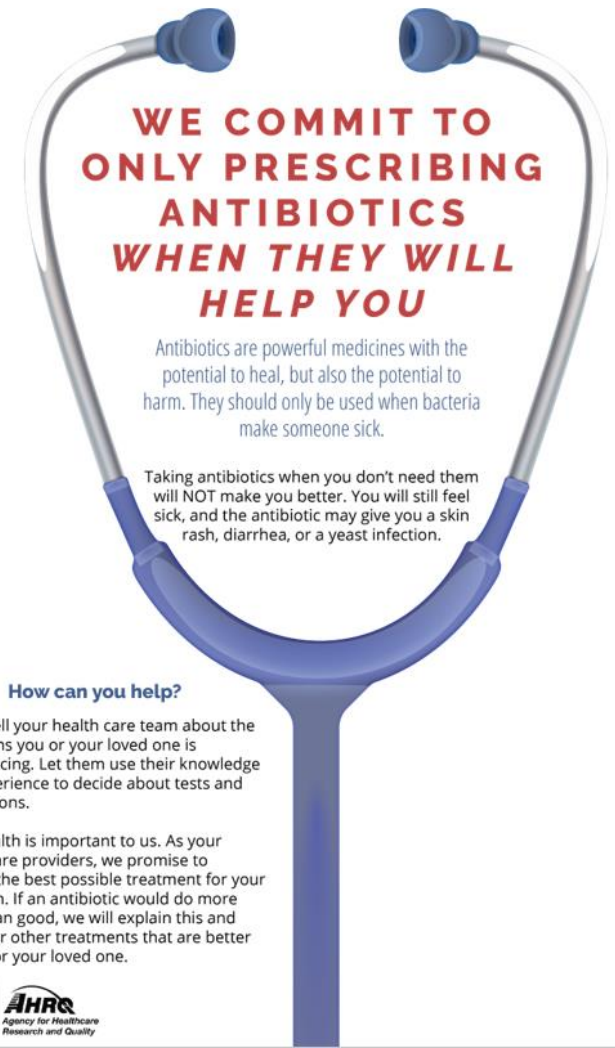


Infection Advisory Committee of AMDA has recommended Infection Preventionists should get 10 hours/week dedicated towards ASP activities

Posters

Commitment posters

- Accountability when faced with pressure
 - Subtle cognitive “nudge”
 - 20% reduction in inappropriate abx!
- The CDC and AHRQ have templates ready to go!
 - <https://www.cdc.gov/antibiotic-use/core-elements/nursing-homes/implementation.html>
 - <https://www.ahrq.gov/antibiotic-use/long-term-care/safety/index.html>



Policies



Sample Policy Letter

TO: [Relevant staff]
FROM: [Antimicrobial stewardship program team]
RE: [Name of antimicrobial stewardship program intervention]
DATE: [Date]

Antibiotics are among the most commonly prescribed pharmaceuticals in long-term care settings, yet reports indicate that a high proportion of antibiotic prescriptions are unnecessary. The adverse consequences of unnecessary antibiotic use include adverse drug reactions or interactions, the development of *Clostridium difficile* infections, the emergence of multi-drug resistant organisms, antibiotic failure, increased mortality, and greatly increased costs. The Centers for Disease Control and Prevention characterizes antibiotic resistance as “one of the world’s most pressing public health threats.” Unnecessary prescribing practices by clinicians and overuse of newer, broad-spectrum antibiotics when either no antibiotic or an older narrow-spectrum drug would suffice are believed to be the primary contributors to this problem. As a result of the above complexities, nursing homes are increasingly recognized as reservoirs of antibiotic-resistant bacteria.

To address these issues, [Name of nursing home] has developed an antimicrobial stewardship program that will [briefly describe goal of selected intervention]. Antimicrobial stewardship is the act of using antibiotics appropriately—that is, using them only when truly needed and using the right antibiotic for each infection. This program includes tools, policies, and procedures that aim to guide nursing home staff toward more responsible and effective use of antibiotics. To achieve our goal, [Name of nursing home] will be [briefly describe specific activities the home will undertake].

This effort, to be implemented beginning [DATE], is crucial to improving outcomes for our residents and the nursing home as a whole. Your participation will be essential.

[NAME AND TITLE OF AUTHORIZING OFFICER] [DATE]

Sample Procedure Letter

TO: [Relevant staff]
FROM: [antimicrobial stewardship program team]
RE: [Name of antimicrobial stewardship program intervention]
DATE: [Date]

Purpose and Scope

This procedure covers the use of [name of form or tool] at [nursing home name]. Antibiotics are among the most commonly prescribed drugs in long-term care settings, yet reports indicate that a high proportion of antibiotic prescriptions are unnecessary. The use of this procedure can help reduce unnecessary prescribing and lead to fewer antibiotic failures and/or adverse events. The procedures that will be put into place are described below. Questions can be directed to the antimicrobial stewardship program team at [provide contact information].

Responsibility for Implementing the Procedure

[Identify who will implement the procedure]

Procedures

[Add details specific to nursing home]

Documentation

[List and attach any documents that will be used, including clinical guidelines, tools, training materials, and monitoring/tracking documents.]

Records

[List any records that will be kept in conjunction with the program (for example, the infection control log).]

[NAME AND TITLE OF AUTHORIZING OFFICER] [DATE]



Checklist

LEADERSHIP SUPPORT

ESTABLISHED
AT FACILITY

1. Can your facility demonstrate leadership support for antibiotic stewardship through one or more of the following actions?

Yes

No

If yes, indicate which of the following are in place (select all that apply)

- Written statement of leadership support to improve antibiotic use
- Antibiotic stewardship duties included in medical director position description
- Antibiotic stewardship duties included in director of nursing position description
- Leadership monitors whether antibiotic stewardship policies are followed
- Antibiotic use and resistance data is reviewed in quality assurance meetings



CE #2: Accountability

Appropriate facility staff accountable for promoting and overseeing antibiotic stewardship

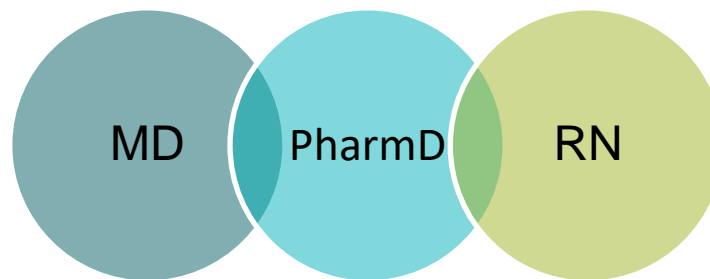
Facility leadership and ASP together are responsible for ensuring AS implementation

- At a minimum, an ASP team should include:
 - Infection Preventionist/RN
 - Medical Director
 - Pharmacy Leader



Delineating Roles

- Medical director sets **standards for antibiotic prescribing**
- Consulting pharmacist can help **provide oversight** through QI activities, reviewing medications, monitoring for adverse events, reporting use data
- Infection preventionist has **knowledge and expertise** to obtain outcomes and perform QI projects





Members

- Effective ASP teams includes a multidisciplinary group with clinical, pharmaceutical, diagnostic, and technical expertise
- Core members should include:
 - **RN Leader** (set standards for assessing, monitoring, communicating changes)
 - Consulting Lab
 - Consider a patient representative

CDC Priorities

- Designate a leader or co-leaders
- Ensure leader(s) has stewardship training



State HAI Program can provide educational support and resources!





Oversight

- Regular meetings with discussion of progress are critical in achieving goals
- Shared responsibility
- Mission statement for a clear vision of the purpose of the program (examples):
 - To ensure that every resident who is prescribed antibiotics receives the right drug, dose, duration, and route of administration.
 - To use antibiotics only when necessary, thereby protecting residents from unnecessary antibiotic exposure and antibiotic-associated adverse events.
 - To educate the staff and the community about the importance of appropriate antibiotic use in long-term care and to guide them toward this practice.

Potential Barriers and Suggested Solutions



- Inability to find a qualified leader
 - Support training for an RN, pharmacist, or prescriber
 - Contract with offsite ID/ASP groups
- Lack of coordination of different disciplines
 - Establish multidisciplinary team
 - Include champions in high impact areas
- Shifting priorities and responsibilities
 - Protect time of leaders
- Fear of feedback to “rogue” providers
 - Ensure good communication skills
 - 1:1 mentoring
 - Inviting to be a part of problem-solving efforts
 - Establish policy that defines ASP recommendations



Checklist

ACCOUNTABILITY

2. Has your facility identified a lead(s) for antibiotic stewardship activities?

Yes

No

If yes, indicate who is accountable for stewardship activities (select all that apply)

- Medical director
- Director or assistant director of nursing services
- Consultant pharmacist
- Other: _____

Core Element #3: Drug Expertise



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

- Partner with local experts with ID training or develop ASP expertise within

The Antibiotic Stewardship Program in Relation to Pharmacy Services

The assessment, monitoring, and communication of antibiotic use shall occur by a licensed pharmacist in accordance with §483.45(c), F756, Drug Regimen Review. A pharmacist must perform a medication regimen review (MRR) at least monthly, including review of the medical record and identify any irregularities, including unnecessary drugs.

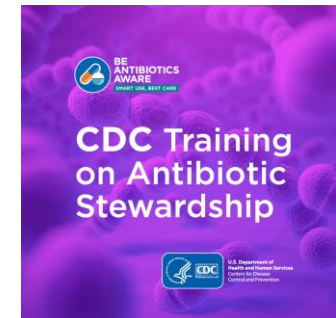
Continuing Education: PharmDs



- Certificate for pharmacists
- More rigorous curriculum
- \$750/pharmacist



- Basic and advanced programs
- Course cost of \$500/physician or pharmacist



- 10 hours of FREE CE- physician or pharmacist

<https://sidp.org/>
<https://mad-id.org/antimicrobial-stewardship-programs/>
<https://www.cdc.gov/antibiotic-use/training/index.html>

CDC Resources



Consultant Pharmacy Posters



[5 Ways Consultant Pharmacists Can Be Antibiotics Aware 11x17 \(Print Only\)](#)

[PDF - 1 page]



[Ensure Documentation of the Indication for Every Antibiotic Order 11x17 \(Print Only\)](#) [PDF - 1 page]



[Limit Prolonged Antibiotic Prophylaxis for Urinary Tract Infection 11x17 \(Print Only\)](#) [PDF - 1 page]



[Avoid Treatment of Asymptomatic Bacteriuria 11x17 \(Print Only\)](#) [PDF - 1 page]



[Use the Shortest Effective Antibiotic Duration 11x17 \(Print Only\)](#) [PDF - 1 page]



[Improve Fluoroquinolone Prescribing Practices 11x17 \(Print Only\)](#) [PDF - 1 page]





Remote Stewardship

- Some have found it helpful to seek off-site support
 - Enrolling in multi-hospital collaboratives
 - Placing ASP requirements into contractual responsibilities of external pharmacy services
 - Funding remote consultation with experts in ASP



Even when remote expertise is used, it is important to have a leader of the program who is on staff at the facility



Checklist

DRUG EXPERTISE

3. Does your facility have access to individual(s) with antibiotic stewardship expertise?

Yes

No

If yes, indicate who is accountable for stewardship activities (select all that apply)

- Consultant pharmacy has staff trained/is experienced in antibiotic stewardship
- Partnering with stewardship team at referral hospital
- External infectious disease/stewardship consultant
- Other: _____

CE #4: Take Action through Policy and Practice Change to Improve Antibiotic Use



Implement at least one policy or practice to improve antibiotic use

- Should be done in a step-wise fashion, so staff become familiar with and not overwhelmed with changes
- Prioritize interventions based off needs of your facility and share the outcomes
- Many ways to go about this!



Examples of Implementation

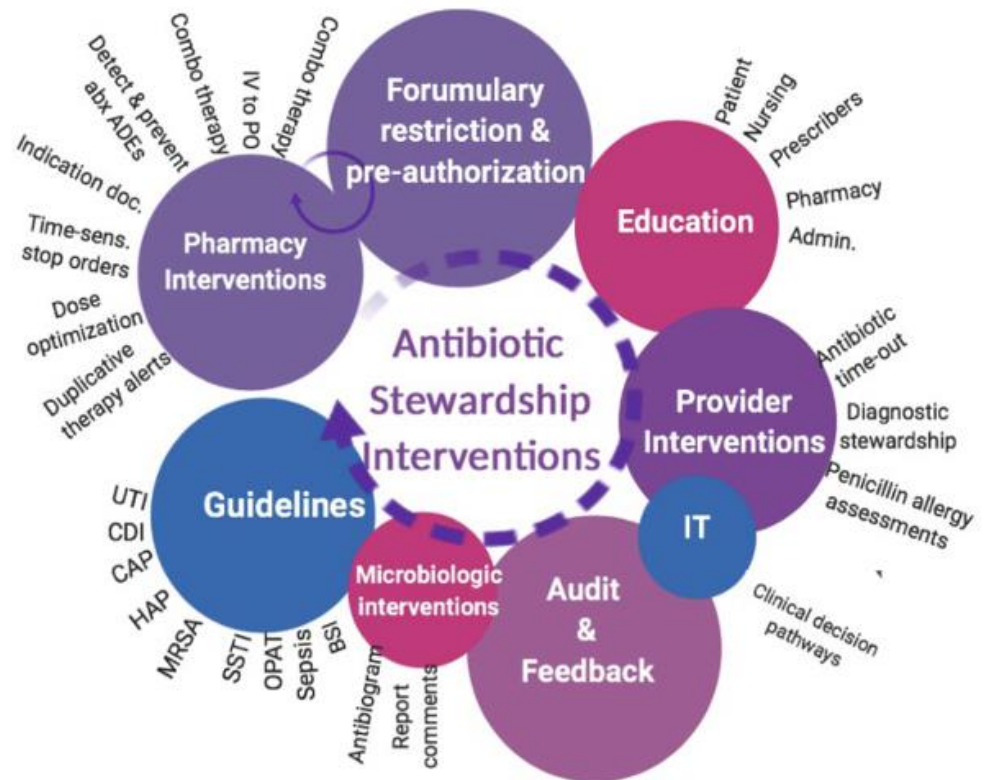
Broad interventions to improve antibiotic use:

- Documentation of dose, duration, indication
- Establish best practices for microbiology testing
- Facility specific treatment recommendations
- Implement algorithms for the assessment of residents (Loeb criteria)
- Utilize a communication tool for suspected infections (SBAR)
- Develop and disseminate facility specific antibiogram
- Perform antibiotic time outs
- Reduce prolonged courses for common infections

Choosing Interventions





- Facilities differ greatly in:
 - Types of prescribers
 - Culture
 - Patient populations
 - Resistance patterns
 - Resources



Overwhelmed?

The CDC and AHRQ have created wonderful toolkits with many pragmatic examples and implementation tools (e.g. how to use SBAR to communicate, appropriate collection of microbiological specimens)

Action

- [NEW AHRQ Toolkit to Improve Antibiotic Use in Long-Term Care](#) 
- [Appendix A: Policy and Practice Actions to Improve Antibiotic Use](#)  [PDF – 9 pages]

Examples of Way to Implement Actions



Step 1: Perform a needs assessment

- Identify most common infections and which antibiotics are prescribed (and potentially misused), you can target guideline, policy, and education efforts

Step 2: Brainstorm

- Summarize the problems, examine solutions, and describe capacity and resources to address
 - It may be helpful to rank these strategies as high, medium, low yield/priority

Step 3: Formalize plan, execute/implement initiative

- (e.g. develop UTI SBAR, provide education, create order set, track adherence to guideline/monitor effectiveness of interventions)

ASAP Tools

asap.nebraskamed.com/

- SBAR Tools
- Antibiotic Checklists
- Guidance documents



Checklist

ACTIONS TO IMPROVE USE

4. Does your facility have policies to improve antibiotic prescribing/use? Yes No

If yes, indicate which policies are in place (select all that apply)

- Requires prescribers to document a dose, duration, and indication for all antibiotic prescriptions
- Developed facility-specific algorithm for assessing residents
- Developed facility-specific algorithms for appropriate diagnostic testing (e.g., obtaining cultures) for specific infections
- Developed facility-specific treatment recommendations for infections
- Reviews antibiotic agents listed on the medication formulary
- Other: _____

CENTERS FOR DISEASE CONTROL AND PREVENTION | CORE ELEMENTS OF ANTIBIOTIC STEWARDSHIP FOR NURSING HOMES 2

5. Has your facility implemented practices to improve antibiotic use? Yes No

If yes, indicate which practices are in place (select all that apply)

- Utilizes a standard assessment and communication tool for residents suspected of having an infection
- Implemented process for communicating or receiving antibiotic use information when residents are transferred to/from other healthcare facilities
- Developed reports summarizing the antibiotic susceptibility patterns (e.g., facility antibiogram)
- Implemented an antibiotic review process/"antibiotic time out"
- Implemented an infection specific intervention to improve antibiotic use
Indicate for which condition(s): _____



Core Elements #5 and #6: Tracking and Reporting



Tracking: Track measures of antibiotic use in the facility

At least one process and one outcome measure

- E.g. evaluate if policies and guidelines are being followed as expected (processes) and if interventions have improved patient outcomes and antibiotic use (outcomes), such as *C. difficile* infection rates

Reporting: Provide regular feedback on antibiotic use and resistance to clinicians, nursing, and other staff

Share data collected as well as outcomes with all healthcare providers as well as leadership and any other stakeholders.



Examples of Implementation



- Tracking how often and how many antibiotics are prescribed
 - Types of antibiotics prescribed
 - Days of therapy (DOT)/1000 days
 - Antibiotic Starts
- Adherence to facility specific treatment recommendations or guidelines (e.g. how many SBAR forms used)
- Tracking of *C. difficile* infection rates, MRSA, CRE
- Prepare regular reports on the measures being tracked related to antibiotic use
- Report to Quality and Infection Prevention
- Provide antibiotic use to prescribers (consider a Scorecard)
- Include ASP report as a standing report to key stakeholders within the facility (Safety/Quality, Infection Prevention)

Tool: Antibiotic Use Tracking Sheet

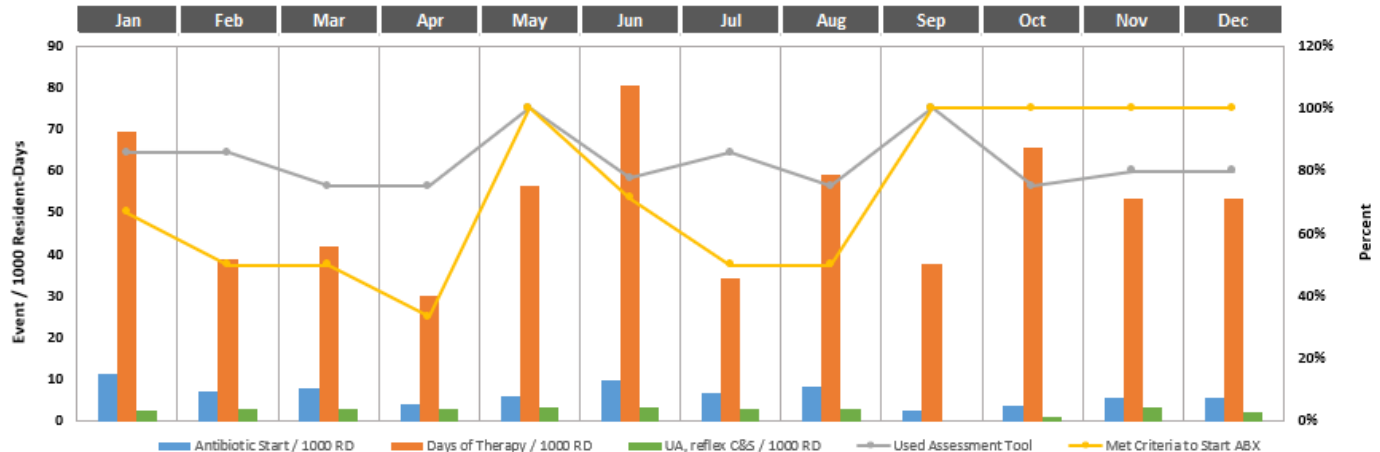
Numerous ASAP Created Tools for Tracking Antibiotics, Infections, Program Outcomes and Metrics



Infection and Antibiotic Start Log Template

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Trend
Antibiotic Start / 1000 RD	11.29	7.14	7.98	3.99	5.88	9.78	6.67	8.42	2.44	3.76	5.56	5.56	78.46	
Days of Therapy / 1000 RD	69.35	38.78	41.87	29.91	56.47	80.43	34.29	58.95	37.80	65.73	53.33	53.33	620.25	
Used Assessment Tool	86%	86%	75%	75%	100%	78%	86%	75%	100%	75%	80%	80%	83%	
Met Criteria to Start ABX	67%	50%	50%	33%	100%	71%	50%	50%	100%	100%	100%	100%	73%	
UA, reflex C&S / 1000 RD	2.42	3.06	2.99	2.99	3.53	3.26	2.86	3.16	0.00	0.94	3.33	2.22	30.76	

Antibiotic Use and Infection Assessment Trends



Summary

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec




Tools: AHRQ





Choosing an Intervention and Measuring Change

A decision on an intervention should be informed by input from frontline staff and the antibiotic stewardship team. The **Staff Safety Assessment Form** and the **Learning from Antibiotic-Associated Adverse Events Form** will help your team obtain that information. The **Intervention Worksheet** provides examples of potential interventions and ways to measure outcomes in your facility. The **Monthly Data Collection Form** can help track antibiotic use, urine cultures, and *Clostridioides difficile* infections at your institution.

The materials below are intended for health care practitioners and nursing staff.

 [Staff Safety Assessment Form](#) (DOCX, 330.3 KB)

 [Learning From Antibiotic-Associated Adverse Events Form](#) (DOCX, 226.7 KB)

 [Intervention Worksheet](#) (PDF, 157.4 KB)

 [Monthly Data Collection Form](#) (XLSX, 345.5 KB)

Potential Barriers/Solutions



- ASP does not have resources to conduct measurements
 - Standardize data collection in terms of information, recording practices, and timing/frequency
 - Consider choosing one measure of antibiotic use
 - Partner with Quality improvement/Infection control staff for data collection
- Lack of Consistent Reporting
 - Establish clear expectations for frequency of reporting
 - Tie reporting to syndrome-specific reports (e.g. provide CAP in winter)

Checklist



TRACKING: MONITORING ANTIBIOTIC PRESCRIBING, USE, AND RESISTANCE

7. Does your facility monitor one or more measures of antibiotic use? Yes No

If yes, indicate which of the following are being tracked (select all that apply)

- Adherence to clinical assessment documentation (signs/symptoms, vital signs, physical exam findings)
- Adherence to prescribing documentation (dose, duration, indication)
- Adherence to facility-specific treatment recommendations
- Performs point prevalence surveys of antibiotic use
- Monitors rates of new antibiotic starts/1,000 resident-days
- Monitors antibiotic days of therapy/1,000 resident-days
- Other: _____

8. Does your facility monitor one or more outcomes of antibiotic use? Yes No

If yes, indicate which of the following are being tracked (select all that apply)

- Monitors rates of *C. difficile* infection
- Monitors rates of antibiotic-resistant organisms
- Monitors rates of adverse drug events due to antibiotics
- Other: _____





Core Element #7: Education

Provide resources to clinicians, nursing staff, residents, and families about antibiotic resistance and opportunities to improve use

Any major antimicrobial stewardship intervention will require some education or informational communication to clinicians

- Ongoing training opportunities should be available to physicians, pharmacists, nurses, and assistants
- Should also engage patients and families



Education



Advantages

- Reinforces key principles
- Provide “face time” for antimicrobial stewardship leaders to establish roles/lead as content experts

Limitations

- Need ongoing active interventions, otherwise education alone does not reliably result in sustained change
- Negative feedback, lack of participation or acceptance

Implementation

- Newsletters
- Didactics (CME presentations)
- Point of care access (e.g. intranet, mobile applications, pocket cards, posters)
- Convenient locations and times
- Annual competency for staff

Track education provided

Viruses or Bacteria What's got you sick? Common infections in nursing homes

Antibiotics are often prescribed when they are not needed for respiratory infections. Antibiotics are only needed for treating certain infections caused by bacteria. Viral illnesses cannot be treated with antibiotics. When antibiotics aren't needed, they won't help you, and the side effects could still cause harm.

Common Respiratory Infections in Nursing Homes	Common Cause			Are Antibiotics Needed?
	Virus	Virus or Bacteria	Bacteria	
Common cold/runny nose	✓			No
Sore throat (except strep)	✓			No
COVID-19	✓			No
Flu	✓			No
Acute bronchitis/chest cold*		✓		No*
Sinus infection		✓		Maybe
Pneumonia		✓		Yes
Strep throat			✓	Yes

*Antibiotics are not needed for nursing home residents with acute bronchitis or a chest cold, unless they have chronic obstructive pulmonary disease (COPD) or other chronic lung disease.



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



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Implementation

- Again, ASAP, CDC and AHRQ have tools prebuilt ready to go!
 - <https://www.ahrq.gov/antibiotic-use/long-term-care/best-practices/posters.html>
 - <https://www.cdc.gov/antibiotic-use/core-elements/nursing-homes/implementation.html>
 - <https://asap.nebraskamed.com/>

Suspected Urinary Tract Infection (UTI) in Long-Term Care Residents	
Signs & Symptoms of a UTI	
<p>For Residents Without a Urinary Catheter</p> <ul style="list-style-type: none"><input type="checkbox"/> DysuriaOR<input type="checkbox"/> Fever (>100°F or >2°F above baseline)AND at least one of the following symptoms that is new or worsening:<input type="checkbox"/> Urgency<input type="checkbox"/> Frequency<input type="checkbox"/> Suprapubic pain<input type="checkbox"/> Gross hematuria<input type="checkbox"/> Costovertebral angle tenderness	<p>For Residents With a Urinary Catheter or if Nonverbal</p> <p>One or more of the following without another recognized cause:</p> <ul style="list-style-type: none"><input type="checkbox"/> Fever (>100°F or a 2°F increase from baseline)<input type="checkbox"/> New costovertebral angle tenderness<input type="checkbox"/> Rigors<input type="checkbox"/> New-onset delirium* <p><small>*If adequate workup for other causes of delirium has been performed and no other cause for delirium is identified</small></p>
<ul style="list-style-type: none"><input type="checkbox"/> Send a urinalysis (UA) & urine culture (UCx)<input type="checkbox"/> Increase hydration<input type="checkbox"/> Start antibiotics before UA and UCx results, if resident appears ill<input type="checkbox"/> If UA & UCx are positive and the resident has ongoing UTI symptoms, modify antibiotics or start antibiotics (if not receiving active antibiotics)	
<p>Do NOT Send a Urinalysis and Urine Culture:</p> <ul style="list-style-type: none"><input type="checkbox"/> If the urine is foul smelling or cloudy, without other urinary symptoms<input type="checkbox"/> Routinely after urethral catheter change<input type="checkbox"/> Routinely upon admission<input type="checkbox"/> After treatment to “document care” or “test of cure”<input type="checkbox"/> For mental status changes (without vital sign changes or urinary symptoms for noncatheterized residents)	

Potential Barriers/Solutions



- Education prioritized lower, lack of acceptance
 - Train champions from multiple disciplines to lead formal and informal education activities
 - Require clinical education based on current knowledge and experience with multiple offerings to fit different schedules
- Overwhelming body of educational materials
 - Synthesize materials for staff (e.g. newsletters, posters, memos)
- Data not well received/poor engagement
 - Consider using specific case studies (review of patient case from last month)



Checklist

EDUCATION

10. Does your facility provide educational resources and materials about antibiotic resistance and opportunity for improving antibiotic use?

Yes

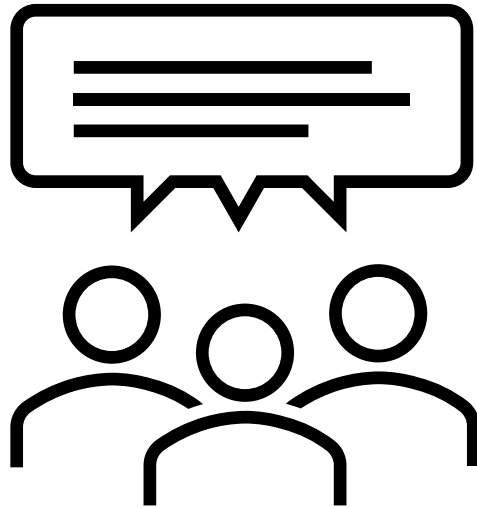
No

If yes, indicate which of the following are being tracked (select all that apply)

- Clinical providers (e.g., MDs, NPs, PAs, PharmDs)
- Nursing staff (e.g., RNs, LPNs, CNAs)
- Residents and families
- Other: _____



Questions/Comments



Case Scenario

You are a consultant pharmacist and have been asked to become involved in the antibiotic stewardship program at the LTCF. You meet with the infection preventionist and the director of nursing to discuss current antibiotic stewardship activities at the facility.

You are told that the facility performs the following:

- SBAR Evaluation of possible urinary tract infections
- Has an antibiotic log
- Reports antibiotic starts to the QAPI meeting
- Has an antibiotic stewardship committee with DON and administration on the committee

Which of the CDC Core Elements of Antibiotic Stewardship is the facility missing currently?

What are some ways the facility could meet the missing Core Elements?



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