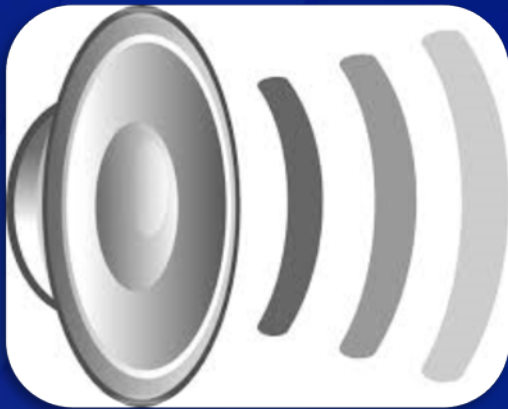


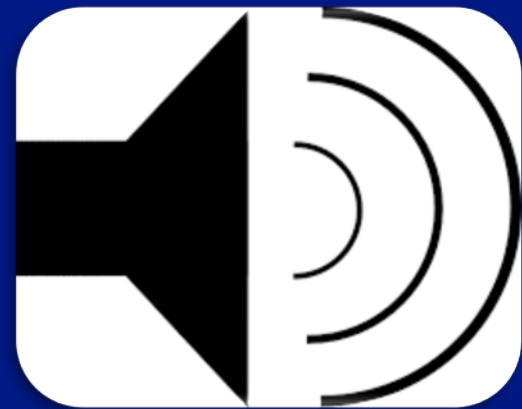
**Welcome to**

## **CDC's Core Elements of Outpatient Antibiotic Stewardship**

**The audio for today's webinar will be coming through your computer speakers. Please ensure your speakers are turned on with the volume up.**



**Thank you!**



# Continuing Education Information

## ACCREDITATION STATEMENTS:

**CME:** The Centers for Disease Control and Prevention is accredited by the Accreditation Council for Continuing Medical Education (ACCME®) to provide continuing medical education for physicians.

- ❑ The Centers for Disease Control and Prevention designates this **live activity** for a maximum of (1) *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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- ❑ This activity provides (1) contact hours.

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# Continuing Education Information

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CPE: The Centers for Disease Control and Prevention is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

- ❑ This program is a designated event for pharmacists to receive (0.1) CEUs in pharmacy education. The Universal Activity Number is 0387-0000-16-203-L05-P.
- ❑ Category: This activity has been designated as Knowledge-Based.
- ❑ Once credit is claimed, an unofficial statement of credit is immediately available on TCEOnline. Official credit will be uploaded within 60 days on the NABP/CPE Monitor.

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- ❑ CDC is an approved provider of CPH Recertification Credits by the National Board of Public Health Examiners. Effective October 1, 2013, the National Board of Public Health Examiners (NBPHE) accepts continuing education units (CEU) for CPH recertification credits from CDC. Please select CEU as your choice for continuing education when registering for a course on TCEOnline. Learners seeking CPH should use the guidelines provided by the NBPHE for calculating recertification credits. For assistance please contact NBPHE at <http://www.NBPHE.org>.

# Continuing Education Disclosure Statement

**DISCLOSURE:** In compliance with continuing education requirements, all presenters must disclose any financial or other associations with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters as well as any use of unlabeled product(s) or product(s) under investigational use.

CDC, our planners, presenters, and their spouses/partners wish to disclose they have no financial interests or other relationships with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters. Planners have reviewed content to ensure there is no bias.

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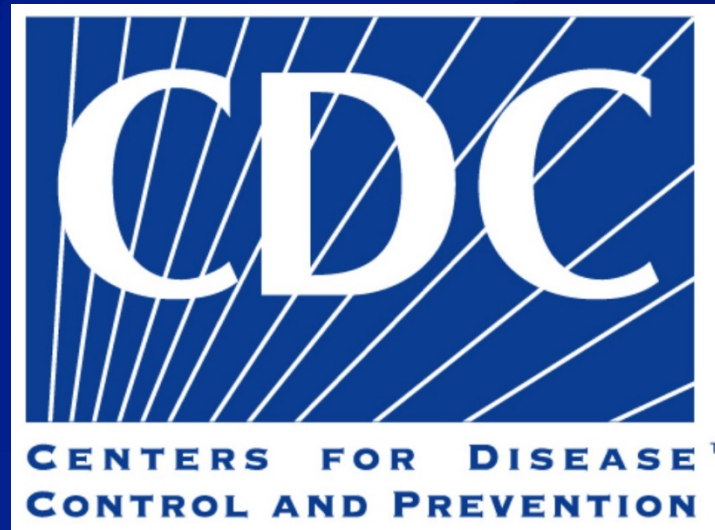
# Continuing Education Information

## PROGRAM DESCRIPTION:

Antibiotic stewardship is the effort to measure and improve how antibiotics are prescribed by clinicians and used by patients. This webinar features a discussion regarding CDC's Core Elements of Outpatient Antibiotic Stewardship, which provides a framework for implementing antibiotic stewardship in outpatient settings.

## OBJECTIVES:

- ❑ Describe infection control techniques that reduce the risk and spread of healthcare-associated infections (HAI).
- ❑ Identify unsafe practices that place patients at risk for HAIs.
- ❑ Describe best practices for infection control and prevention in daily practice in healthcare settings.
- ❑ Apply standards, guidelines, best practices, and established processes related to safe and effective medication use.



# CDC's Core Elements of Outpatient Antibiotic Stewardship

November 15, 2016

## Featured Speaker

- Katherine Fleming-Dutra, MD, Medical Officer, Office of Antibiotic Stewardship, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention
  - Implementing Antibiotic Stewardship into Your Outpatient Practice



## Before We Get Started...

- **To submit a question:**
  - Use the “*Chat*” window, located on the lower left-hand side of the webinar screen.
  - *Questions will be addressed at the end of the webinar, as time allows.*
- **To ask for help:**
  - *Please press the “Raise Hand” button, located on the top left-hand side of the screen.*
- **To hear the audio:**
  - **Please ensure your speakers are turned on with the volume up** – the audio for today’s conference should be coming through your computer speakers.

*The speakers’ slides will be provided to participants in a follow-up email.*



# Core Elements of Outpatient Antibiotic Stewardship: Implementing Antibiotic Stewardship Into Your Outpatient Practice

Katherine Fleming-Dutra, MD

Office of Antibiotic Stewardship  
Division of Healthcare Quality Promotion  
National Center for Emerging and Zoonotic Infectious Diseases  
Centers for Disease Control and Prevention

November 15, 2016



# Objectives

- Review importance of antibiotic stewardship in outpatient settings
- Identify four core elements of antibiotic stewardship across various outpatient settings
- Discuss evidence-based strategies to implement the core elements

## Life-Saving Benefits of Antibiotics

- Once deadly infectious bacterial diseases are treatable, substantially reducing deaths compared to pre-antibiotic era
- Important adjunct to modern medical advances
  - Surgeries
  - Transplants
  - Cancer therapies



## Antibiotic Resistance

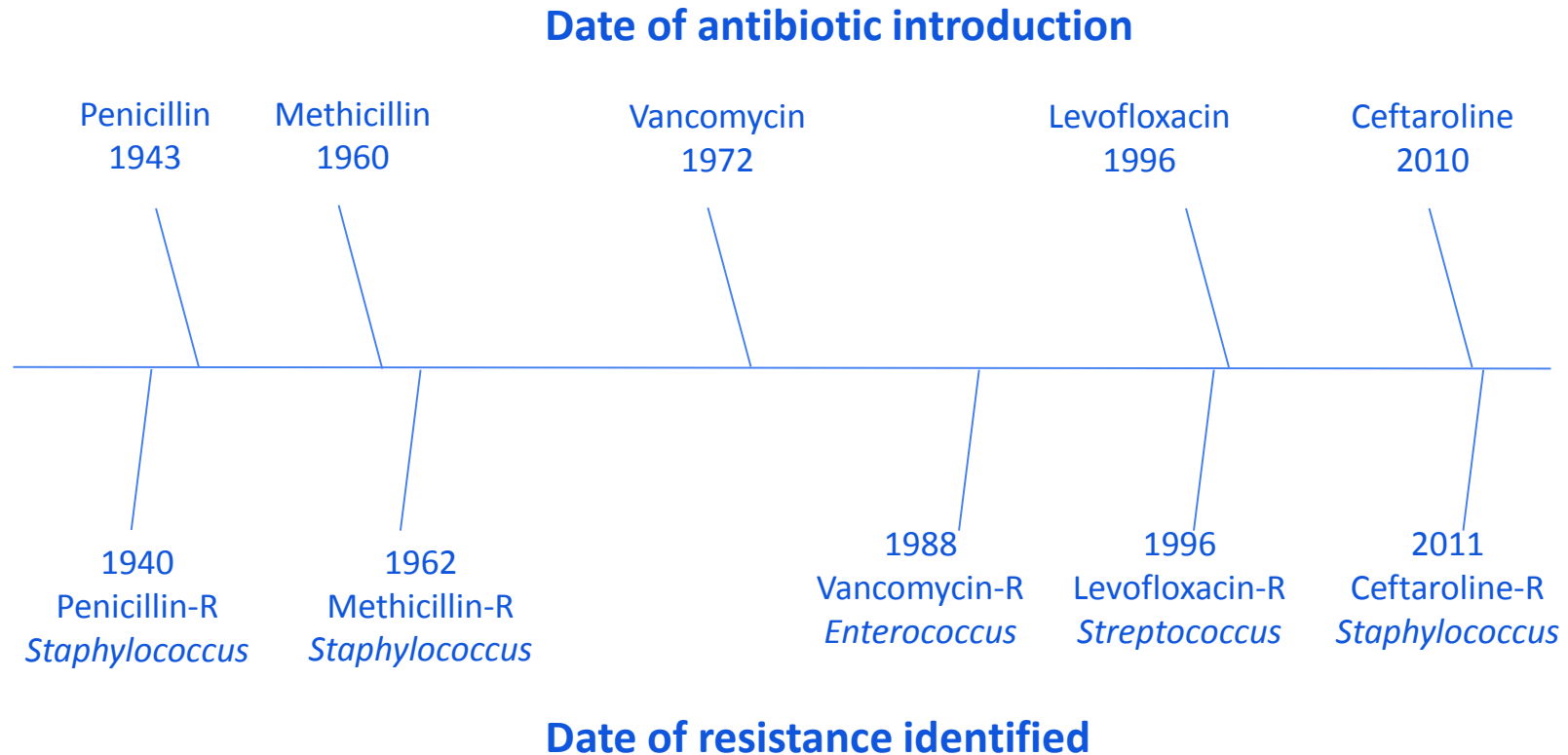
Estimated minimum number of illnesses and deaths caused annually by antibiotic resistance\*:

At least  **2,049,442** illnesses,  
 **23,000** deaths

*\*bacteria and fungus included in this report*

**\$20 billion in excess direct healthcare costs annually**

# Antibiotic Use Drives Resistance

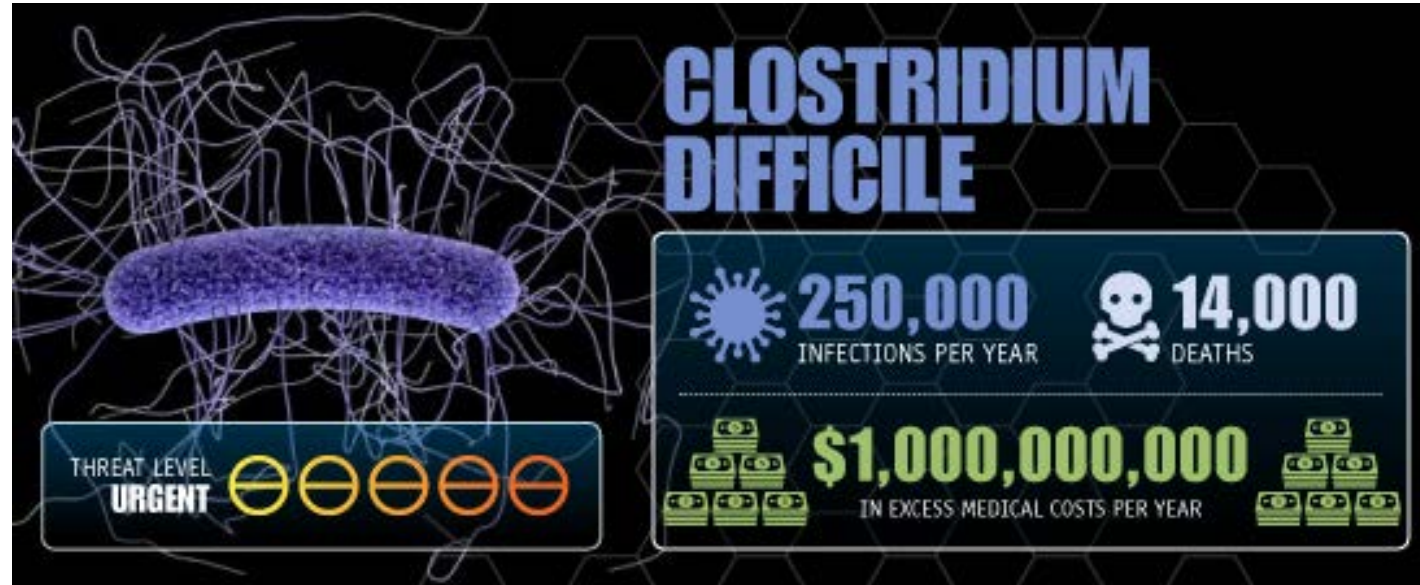


## It's a Matter of Patient Safety

- Adverse events from antibiotics range from minor to severe
  - Side effects like rash or antibiotic-associated diarrhea
  - Allergic reactions, including anaphylaxis (life-threatening)
- 1 in 1000 antibiotic prescriptions leads to an emergency department (ER) visit for an adverse event
  - 142,000 ER visits per year for antibiotic-associated adverse events
  - Antibiotics are most common cause of drug-related emergency department visits for children
- Long-term consequences: growing evidence that antibiotics associated with chronic disease through disruption of the microbiota and microbiome



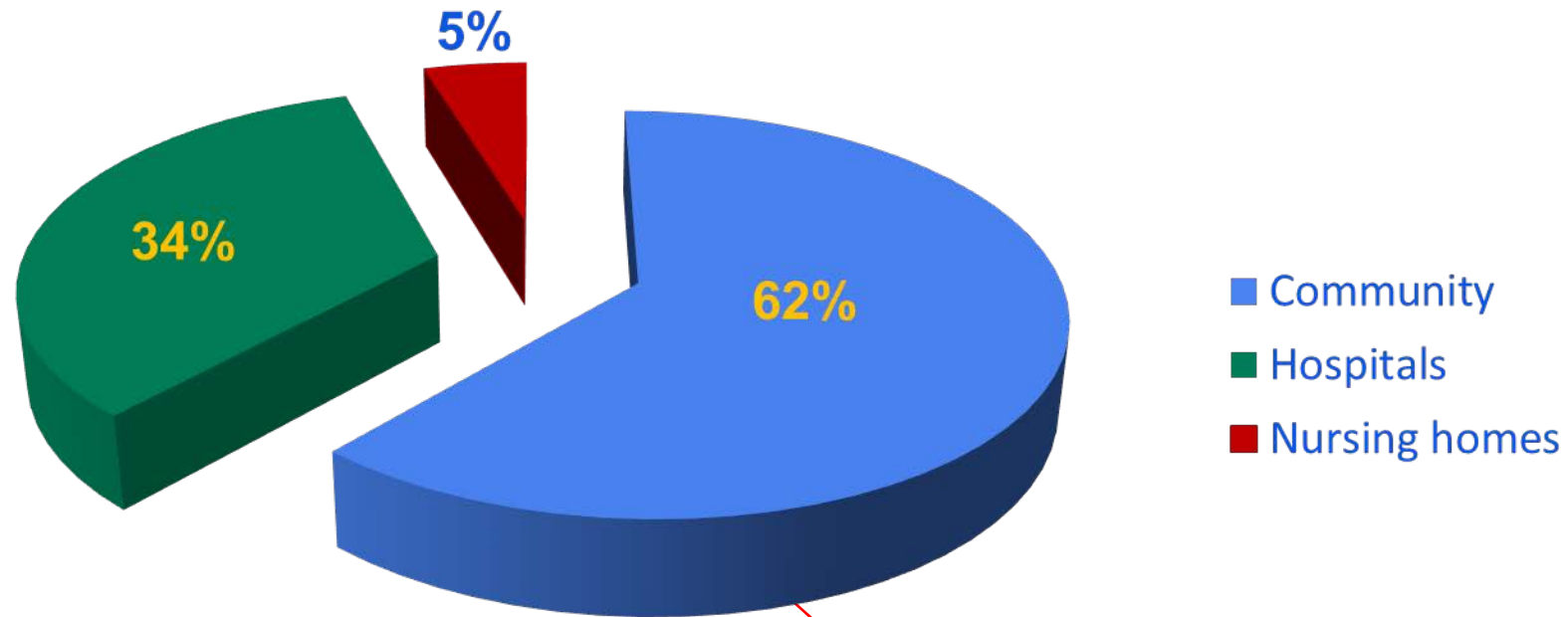
## It's a Matter of Patient Safety: *Clostridium difficile*



More recent estimate: 453,000 infections and caused 15,000 deaths in the US annually

# Antibiotic Expenditures in United States by Treatment Setting

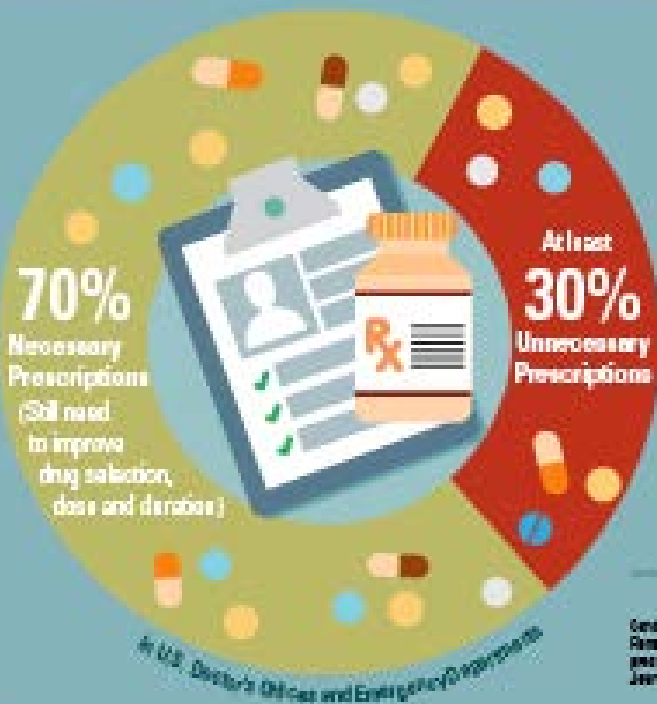
Total 2009 cost: \$10.7 billion



Estimate 80-90% of antibiotic use occurring in outpatient setting



# Improve Antibiotic Use to Combat Antibiotic Resistance



**CDC is working to reduce unnecessary antibiotic use**

**White House National Action Plan to Combat Antibiotic-Resistant Bacteria (CARB)**

**Goal: By 2020, reduce inappropriate outpatient antibiotic use by 50%**

Find out when antibiotics are necessary. Visit: <http://www.cdc.gov/getsmart>

Centers for Disease Control and Prevention (CDC).  
Rising Rates, Not of Prevalence of Inappropriate antibiotic  
prescriptions among US out-patient care visits, 2011-2013.  
Journal of the American Medical Association, May 2014.



Centers for Disease Control and Prevention  
National Center for Emerging and Zoonotic Infectious Diseases

## What is Antibiotic Stewardship?

- Antibiotic stewardship is the effort to:
  - Measure antibiotic prescribing
  - Improve antibiotic prescribing so that antibiotics are only prescribed and used when needed
  - Minimize misdiagnoses or delayed diagnoses leading to underuse of antibiotics
  - Ensure that the right drug, dose, and duration are selected when an antibiotic is needed



**It's about patient safety and delivering high-quality healthcare.**

# CDC's Core Elements of Antibiotic Stewardship for Hospitals and Nursing Homes

Core Elements  
of Hospital Antibiotic  
Stewardship Programs

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

The Core Elements of  
**Antibiotic Stewardship**  
for Nursing Homes

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

CS220006-A

## Core Elements of Outpatient Antibiotic Stewardship

Continuing Education Examination available at <http://www.cdc.gov/mmwr/cme/conted.html>.



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention



## The Core Elements of Outpatient Antibiotic Stewardship



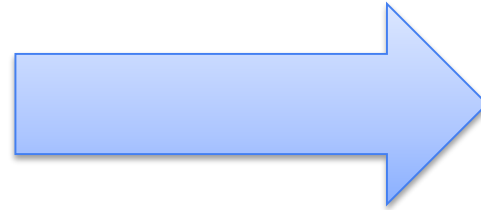
National Center for Emerging and Zoonotic Infectious Diseases  
Division of Healthcare Quality Promotion



CS286900-A

Sanchez GV, Fleming-Dutra KE, Roberts RM, Hicks LA. Core Elements of Outpatient Antibiotic Stewardship. MMWR Recomm Rep 2016;65(No. RR-6):1-12. [https://www.cdc.gov/mmwr/volumes/65/rr/rr6506a1.htm?s\\_cid=rr6506a1\\_e](https://www.cdc.gov/mmwr/volumes/65/rr/rr6506a1.htm?s_cid=rr6506a1_e)

# Who are the Core Elements of Outpatient Antibiotic Stewardship intended for?



## Primary care clinics and clinicians

These clinics and clinicians prescribe approximately half of all outpatient antibiotics in the United States.\* This includes clinicians specializing in family practice, pediatrics, and internal medicine, all of whom treat a wide variety of patients and conditions that might benefit from antibiotic treatment.



## Outpatient specialty and subspecialty clinics and clinicians

These clinics and clinicians focus on treatment and management of patients with specialized medical conditions that sometimes benefit from antibiotic therapy. These specialties clinics include gastroenterology, dermatology, urology, obstetrics, otolaryngology, and others.



## Emergency departments (EDs) and emergency medicine clinicians

EDs and emergency medicine clinicians are positioned between acute care hospitals and the community and encounter unique challenges, including lack of continuity of care and higher concentration of high-acuity patients, as well as unique opportunities for stewardship interventions, such as greater clinician access to diagnostic resources and the expertise of pharmacists and consultants.



## Retail health clinics and clinicians

These clinics and clinicians provide treatment for routine conditions in retail stores or pharmacies and represent a growing category of health care delivery in the United States.



## Urgent care clinics and clinicians

These clinics and clinicians specialize in treating patients who might need immediate attention or need to be seen after hours but might not need to be seen in EDs.



## Dental clinics and dentists

Dental clinics and dentists use antibiotics as prophylaxis before some dental procedures and for treatment of dental infections.



## Health care systems

Health care systems plan, deliver, and promote health care services and often involve a network of primary and specialty outpatient clinics, urgent care centers, EDs, acute care hospitals, and other facilities that provide health care services. Health care systems can use existing antibiotic stewardship programs or develop new ones to promote appropriate antibiotic prescribing practices in their outpatient facilities as well as across the system.



## Nurse practitioners and physician assistants

These clinicians work in every medical specialty and subspecialty involved in antibiotic prescribing and should be included in antibiotic stewardship efforts.

# Initial Steps for Outpatient Antibiotic Stewardship



## Identify one or more high-priority conditions for intervention.

High-priority conditions are conditions for which clinicians commonly deviate from best practices for antibiotic prescribing and include conditions for which antibiotics are overprescribed, underprescribed, or misprescribed with the wrong antibiotic agent, dose, or duration.

- Conditions for which antibiotics are overprescribed
- Conditions which are overdiagnosed
- Conditions for which the wrong dose, duration or agent often is selected
- Conditions for which watchful waiting or delayed prescribing is underused
- Conditions for which antibiotics are underused or the need for timely antibiotics isn't recognized

# Initial Steps for Outpatient Antibiotic Stewardship



## **Identify barriers that lead to deviation from best practices.**

These might include clinician knowledge gaps about best practices and clinical practice guidelines, clinician perception of patient expectations for antibiotics, perceived pressure to see patients quickly, or clinician concerns about decreased patient satisfaction with clinical visits when antibiotics are not prescribed.

# Initial Steps for Outpatient Antibiotic Stewardship



## **Establish standards for antibiotic prescribing.**

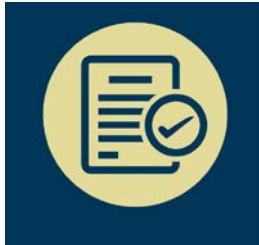
This might include implementation of national clinical practice guidelines and, if applicable, developing facility- or system-specific clinical practice guidelines to establish clear expectations for appropriate antibiotic prescribing



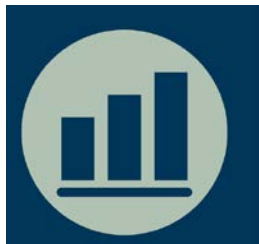
# The Core Elements of Outpatient Antibiotic Stewardship



- **Commitment:** demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety



- **Action for policy and practice:** implement at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed



- **Tracking and Reporting:** monitor antibiotic prescribing practices and offer regular feedback to clinicians or have clinicians assess their own antibiotic use



- **Education and Expertise:** Provide educational resources to clinicians and patients on antibiotic prescribing and ensure access to needed expertise on antibiotic prescribing



## Commitment

- Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety **by doing one of the following:**

Clinicians	Organizational Leadership
<ul style="list-style-type: none"><li>• Write and display public commitments in support of antibiotic stewardship</li></ul>	<ul style="list-style-type: none"><li>• Identify a single leader to direct antibiotic stewardship activities within a facility</li><li>• Include stewardship-related duties in position descriptions or job evaluation criteria</li><li>• Communicate with all clinic staff to set patient expectations</li></ul>

## Public Commitment Posters

- Simple intervention: poster-placed in exam rooms with clinician picture and commitment to use antibiotics appropriately
- Randomized-controlled trial
- Principle of behavioral science: desire to be consistent with previous commitments
- “Behavioral nudge” to make the right choice

*“As your doctors, we promise to treat your illness in the best way possible. We are also dedicated to avoid prescribing antibiotics when they are likely do to more harm than good.”*

- Adjusted absolute reduction in inappropriate antibiotic prescribing: -20% compared to controls,  $p=0.02$

# Commitment Posters in Illinois, Texas and New York

**Commitment Poster Template**

**Safe Antibiotic Use:  
An Important Message From Your Providers**

Dear Patient,

We want to give you some important information about antibiotics.

- Antibiotics only fight infections caused by bacteria.
- Antibiotics will **NOT** help you feel better if you have a viral infection like:
  - Cold or runny nose
  - Bronchitis or chest cold
  - Flu
- If you take antibiotics when you don't really need them, they can cause more harm than good:
  - You might feel worse
  - You can get diarrhea, rashes, or yeast infections
  - Antibiotics may **NOT** work when you really need them because antibiotics make bacteria more resistant to them. This can make future infections harder to treat.

**What can you do as a patient?** Talk with me about the treatment that is best for you. Follow the treatment plan that we discuss.

**As your healthcare provider,** I will give you the best care possible. I am dedicated to avoid prescribing antibiotics when they are likely to do more harm than good. If you have any questions, please ask me, your nurse, or your pharmacist.

Sincerely,

Provider photo

Provider photo

Provider photo

Provider photo

Provider Name    Provider Name    Provider Name    Provider Name

The best care is the right care. Only use antibiotics when needed.

Facility Logo    IDPH    15

**Safe Antibiotic Use:  
A Letter From Your Medical Group**

Dear Patient,

We want to give you some important information about antibiotics.

Antibiotics, like penicillin, fight infections due to bacteria that can cause some serious illnesses. But these medicines can cause side effects like skin rashes, diarrhea, or yeast infections. If your symptoms are from a virus and not from bacteria, you won't get better with an antibiotic, and you could still get these bad side effects.


How can you help? Carefully follow your doctor's instructions. He or she will tell you if you should or should not take antibiotics.

When you have a cough, sore throat, or other illness, your doctor will help you select the best possible treatments. If an antibiotic would do more harm than good, your doctor will explain this to you, and may offer other treatments that are better for you.

Your health is very important to us. As your doctors, we promise to treat your illness in the best way possible. We are also dedicated to avoid prescribing antibiotics when they are likely to do more harm than good.


If you have any questions, please feel free to ask your doctor, nurse, or pharmacist.

Sincerely/ Atentamente,



GET SMART  
About Antibiotics Week  
www.cdc.gov/getsmart

**Your health is important to me.**




**That's why I'm signing the "Get Smart Guarantee."**

Antibiotics don't work for viral infections like the common cold, most coughs, and most sore throats. Taking antibiotics when they don't work can do more harm than good by causing stomach upset, diarrhea, or allergic reactions.

**I guarantee I will do my best to prescribe antibiotics only when you need them.**

Antibiotics can be life-saving, but bacteria are becoming more resistant. If we're not careful about how we prescribe and use the antibiotics we've relied on for years, they might not work for us in the future. To learn more visit: [cdc.gov/getsmart](http://cdc.gov/getsmart).

Signature(s) \_\_\_\_\_



NEW YORK STATE Department of Health

# Put a Commitment Poster in Your Clinic!

- CDC worked with the authors of the study to create a poster template for download
  - Will be coming in Spanish
  - Add your picture and signature
  - Place in your examination rooms
- 
- Available at:  
<https://www.cdc.gov/getsmart/community/materials-references/print-materials/hcp/index.html>

Meeker et al. *JAMA Intern Med.* 2014;174(3):425-31.



## A Commitment to Our Patients about Antibiotics

*Antibiotics only fight infections caused by bacteria. Like all drugs, they can be harmful and should only be used when necessary. Taking antibiotics when you have a virus can do more harm than good: you will still feel sick and the antibiotic could give you a skin rash, diarrhea, a yeast infection, or worse.*

*Antibiotics also give bacteria a chance to become more resistant to them. This can make future infections harder to treat. It means that antibiotics might not work when you really do need them. Because of this, it is important that you only use an antibiotic when it is necessary to treat your illness.*

*How can you help? When you have a cough, sore throat, or other illness, tell your doctor you only want an antibiotic if it is really necessary. If you are not prescribed an antibiotic, ask what you can do to feel better and get relief from your symptoms.*

*Your health is important to us. As your healthcare providers, we promise to provide the best possible treatment for your condition. If an antibiotic is not needed, we will explain this to you and will offer a treatment plan that will help. We are dedicated to prescribing antibiotics only when they are needed, and we will avoid giving you antibiotics when they might do more harm than good.*

*If you have any questions, please feel free to ask us.*

*Sincerely,*

Add your picture and  
signature here





## Commitment

- Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety **by doing one of the following:**

Clinicians	Organizational Leadership
<ul style="list-style-type: none"><li>• Write and display public commitments in support of antibiotic stewardship</li></ul>	<ul style="list-style-type: none"><li>• Identify a single leader to direct antibiotic stewardship activities within a facility</li><li>• Include stewardship-related duties in position descriptions or job evaluation criteria</li><li>• Communicate with all clinic staff to set patient expectations</li></ul>



## Action

- Implement **at least one** policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed

Clinicians	Organizational Leadership
<ul style="list-style-type: none"><li>• Use evidence-based diagnostic criteria and treatment recommendations</li><li>• Use delayed prescribing practices or watchful waiting, when appropriate</li></ul>	<ul style="list-style-type: none"><li>• Provide communications skills training for clinicians</li><li>• Require explicit written justification in the medical record for nonrecommended antibiotic prescribing</li><li>• Provide support for clinical decisions</li><li>• Use call centers, nurse hotlines, or pharmacist consultations as triage systems to prevent unnecessary visits</li></ul>

## Get Smart: Know When Antibiotics Work

[Get Smart Home](#)

About +

For Patients +

For Healthcare Professionals -

**Outpatient Healthcare Professionals** -

Adult Treatment Recommendations

Pediatric Treatment Recommendations

Inpatient Healthcare Professionals

Community Pharmacists

Continuing Education & +

[CDC](#) > [Get Smart Home](#) > [For Healthcare Professionals](#)

### Outpatient Healthcare Professionals



Recommendations for appropriate antibiotic prescribing, including clinical practice guidelines, have been developed to improve outpatient treatment of common infections in children and adults. CDC's Get Smart: Know When Antibiotics Work program has developed materials that outpatient healthcare professionals can use to educate their patients about when antibiotics treatment is appropriate.

#### ADULT TREATMENT RECOMMENDATIONS

A collection of evidence-based recommendations and clinical practice guidelines for the treatment of common outpatient infections in adults...

#### PEDIATRIC TREATMENT RECOMMENDATIONS

A collection of evidence-based recommendations and clinical practice guidelines for the treatment of common infections in children...

<http://www.cdc.gov/getsmart/community/for-hcp/outpatient-hcp/index.html>





## Action

- Implement **at least one** policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed

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# Communication Training as an Antibiotic Stewardship Intervention

- Enhanced communication training reduces antibiotic prescribing for respiratory infections in all ages while maintaining patient satisfaction
- Communication goals
  - Understanding the patient's expectations
  - Explaining why antibiotics will/will not help
  - Providing symptomatic recommendations
  - Discussing when to return if the patient is not better
- Effect appears to be sustainable over time





## Tracking and Reporting

- Monitor antibiotic prescribing practices and offer regular feedback to clinicians or have clinicians assess their own antibiotic prescribing practices themselves

<b>Clinicians</b>	<b>Organizational Leadership</b>
<ul style="list-style-type: none"><li>• Self-evaluate antibiotic prescribing practices</li><li>• Participate in continuing medical education and quality improvement activities to track and improve antibiotic prescribing</li></ul>	<ul style="list-style-type: none"><li>• Implement at least one antibiotic prescribing tracking and reporting system</li><li>• Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers</li></ul>



## Tracking and Reporting

- Monitor antibiotic prescribing practices and offer regular feedback to clinicians or have clinicians assess their own antibiotic prescribing practices themselves

Clinicians	Organizational Leadership
<ul style="list-style-type: none"><li>• Self-evaluate antibiotic prescribing practices</li><li>• Participate in continuing medical education and quality improvement activities to track and improve antibiotic prescribing</li></ul>	<ul style="list-style-type: none"><li>• Implement at least one antibiotic prescribing tracking and reporting system</li><li>• Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing</li></ul>

# What Should You Track and Report in Your Outpatient Facility?

- Decisions should be made in each practice or facility based on your opportunities for improvement
- Options:
  - Antibiotic prescribing for one or more high-priority conditions (e.g. acute bronchitis)
  - Percentage of all visits leading to antibiotic prescriptions
  - At the level of a health care system
    - Complications of antibiotic use (e.g. adverse drug events, *C. difficile* infections)
    - Antibiotic resistance trends among common outpatient bacterial pathogens



# Tracking and Reporting with Peer Comparisons

- Effective feedback interventions often include peer performance comparisons
  - Comparing clinician's antibiotic selection patterns for respiratory conditions to colleagues' performance<sup>1</sup>
    - Led to increased use of guideline recommended agents
  - Comparing clinician's percentage of inappropriate antibiotic prescribing for acute respiratory conditions to “top-performers” in their practice<sup>2</sup>
    - Led to decreased inappropriate antibiotic prescribing for acute respiratory infections that should not be treated with antibiotics (e.g. colds and acute bronchitis)
  - Notifying clinicians that they prescribe more antibiotics than 80% of their peers, based on the percentage all visits leading to antibiotic prescriptions<sup>3</sup>
    - Led to decreased overall antibiotic prescribing and cost-savings



## Education and Expertise

- Provide educational resources to clinicians and patients on antibiotic prescribing and ensure access to needed expertise on optimizing antibiotic prescribing.

<b>Clinicians</b>	<b>Organizational Leadership</b>
<ul style="list-style-type: none"><li>• Use effective communications strategies to educate patients about when antibiotics are and are not needed</li><li>• Educate about the potential harms of antibiotic treatment</li><li>• Provide patient education materials</li></ul>	<ul style="list-style-type: none"><li>• Provide face-to-face educational training (academic detailing)</li><li>• Provide continuing education activities for clinicians</li><li>• Ensure timely access to persons with expertise</li></ul>

# Educating Patients Through Effective Communication

- Clinicians cite patient demand for antibiotics as a reason they prescribe inappropriately<sup>1</sup>
  - Clinicians are not very good at correctly determining which patients want antibiotics<sup>2</sup>
  - Clinicians are more likely to prescribe antibiotics when they think that the patient wants them<sup>2</sup>
- Patients can be satisfied without antibiotics, even if they expect them, with effective communication
  - Combining explanations of why antibiotics are not needed with recommendations for managing symptoms have been associated with increased visit satisfaction<sup>3</sup>
  - Providing recommendations of when to seek medical care if the patient worsens or doesn't improve (i.e. a contingency plan) has been associated with increased satisfaction for patients who expected antibiotics but did not receive them<sup>4</sup>





## Education and Expertise

- Provide educational resources to clinicians and patients on antibiotic prescribing and ensure access to needed expertise on optimizing antibiotic prescribing
- Inappropriate antibiotic prescribing is rarely due to clinical knowledge gaps alone

Clinicians	Organizational Leadership
<ul style="list-style-type: none"><li>• Use effective communications strategies to educate patients about when antibiotics are and are not needed</li><li>• Educate about the potential harms of antibiotic treatment</li><li>• Provide patient education materials</li></ul>	<ul style="list-style-type: none"><li>• Provide face-to-face educational training (academic detailing)</li><li>• Provide continuing education activities for clinicians</li><li>• Ensure timely access to persons with expertise</li></ul>

## Get Smart: Know When Antibiotics Work



Antibiotic resistance is a growing problem and the main cause of this problem is misuse of antibiotics. CDC's Get Smart: Know When Antibiotics Work program works to make sure antibiotics are prescribed only when they are needed and used as they should. The Get Smart program focuses on common illnesses that account for most of the antibiotic prescriptions written for children and adults in doctors' offices and other outpatient settings.

### ABOUT ANTIBIOTIC USE AND RESISTANCE

Antibiotics have transformed our ability to treat infections, but they do not work as well as they once did against some infections...

### PROGRAMS AND MEASUREMENT

A look at state, national, and international efforts to track antibiotic-resistant infections and implement interventions to curb this growing threat...

### FOR PATIENTS

Information on when common illnesses need antibiotics and ways to lessen your symptoms if antibiotics are not needed...

### PARTNERS

CDC's Get Smart program works with a wide-range of partners to raise awareness about the threat of antibiotic resistance...

### FOR HEALTHCARE PROFESSIONALS

Outpatient and inpatient healthcare providers, as well as community pharmacists, all play a role in fighting antibiotic resistance...

### GET SMART ABOUT ANTIBIOTICS WEEK

An annual observance to raise awareness of the threat of antibiotic resistance and the importance of appropriate antibiotic prescribing and use...

### What is Delayed Prescribing?



**WAIT.** Do not fill your prescription just yet. Your healthcare professional believes your illness may resolve on its own.

First, follow your healthcare professional's recommendations to help you feel better without antibiotics and continue to monitor your symptoms over the next few days.

- Rest
- Drink extra water and fluids
- Use cool mist vaporizer or saline nasal spray
- For sore throats in older adults and children, throat spray, or lozenges

If you **do not feel better** in \_\_\_ days/hours, or get worse, and fill your prescription.

If you **feel better**, you do not need the antibiotic and you can stop taking it to avoid the risk of side effects.

**Waiting to see if you really need an antibiotic** only when it is actually necessary. **Waiting to see if you really need an antibiotic** can cause side effects like a skin rash, diarrhea, a yeast infection, or worse.

**Antibiotics can also make future bacterial infections stronger and harder to treat.** You can protect yourself and others by learning when antibiotics are and aren't needed.



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### What is Watchful Waiting?

**Good news!** Your healthcare professional believes your illness will likely resolve on its own.



You should watch and wait for \_\_\_ days/hours before deciding whether to take an antibiotic.

In the meantime, follow your healthcare professional's recommendations to help you feel better and continue to monitor your own symptoms over the next few days.

- Rest
- Drink extra water and fluids
- Use cool mist vaporizer or saline nasal spray to relieve congestion
- For sore throats in older children and adults, try ice chips, sore throat spray, or lozenges
- Use honey to relieve cough. Do not give honey to an infant less than 1 year of age.

If you **feel better**, no further action is necessary — you don't need antibiotics.

If you **do not feel better**, experience **new symptoms**, or you have **other concerns**, call your healthcare professional to discuss if you need a recheck or if you need antibiotics, which may be prescribed over the phone.

It may not be convenient to visit your healthcare professional multiple times, but it is critical to make the right choice. **Antibiotics can cause side effects like a skin rash, diarrhea, a yeast infection, or worse.**

**Antibiotics can also make future bacterial infections stronger and harder to treat.** You can protect yourself and others by learning when antibiotics are and aren't needed.



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For more information visit  
[www.cdc.gov/getsmart](http://www.cdc.gov/getsmart)

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## Preventing and Treating Ear Infections



### What is an ear infection?

Ear infections can affect the ear canal or the middle ear.

**Acute otitis externa (AOE)** is the scientific name for an infection of the ear canal, which is also called swimmer's ear.

Middle ear infections are called *Otitis Media*, and there are two types of middle ear infections:

- **Otitis Media with Effusion (OME)** occurs when fluid builds up in the middle ear without pain, pus, fever, or other signs of infection. OME usually goes away on its own and does not benefit from antibiotics.
- **Acute Otitis Media (AOM)** occurs when fluid builds up in the middle ear and is often caused by bacteria, but can also be caused by viruses. Antibiotics are not always necessary because in many cases the body's own immune system can clear off the infection without help from antibiotics.

### How are ear infections caused and how are they treated?

**Bacteria**  
AOM is often caused by bacteria, and *Streptococcus pneumoniae*.  
→ Ensure your child is up to date on vaccinations, including pneumococcal conjugate vaccine (PCV13), and can protect your baby from infections, including AOM.

**Cold and Flu Season**  
AOM often occurs after a viral upper respiratory infection, like a cold or the flu, in the middle ear, and then bacteria can grow in the fluid left behind.  
→ Ensure your child is up to date on vaccinations and gets plenty of rest.

**Injury to the Ear**  
Foreign objects, like cotton swabs and bobby pins, can cause injury to the ear canal, leading to acute otitis externa.  
→ Avoid putting foreign objects in the ear.

National Center for Emerging and Zoonotic Infectious Diseases  
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CS270227A

Normal Ear



### Cigarette Smoke

Exposure to cigarette smoke can lead to more colds and more AOM.  
→ Avoid smoking and exposure to secondhand smoke.

### Family History

The tendency to develop AOM can run in families.

- Family history is not preventable. Instead, focus on other prevention methods, like staying up to date on vaccinations, breastfeeding, and avoiding smoke.

### How are ear infections treated?

#### Watchful Waiting

- Mild ear infections often will get better on their own without antibiotic treatment, so your healthcare professional may recommend *watchful waiting* before prescribing antibiotics to you or your loved one. This means that your provider may wait a few days before deciding whether to prescribe antibiotics, while treating the symptoms of an ear infection. Watchful waiting gives your or your child's own immune system time to fight off the infection first before starting antibiotics. If you or your child don't get better in 2–3 days or get worse, your healthcare professional can recommend starting antibiotics.
- Another form of watchful waiting is *delayed prescribing*. This means that your healthcare professional may give you an antibiotic prescription, but ask you to wait 2–3 days to see if you or your child are still sick with fever, ear pain, or other symptoms before filling the prescription.

#### Antibiotics

Antibiotics, such as amoxicillin, are used to treat severe ear infections or ear infections that last longer than 2–3 days.

#### Symptom Relief

- There are ways to relieve symptoms associated with ear infections — like ear pain — whether or not antibiotics are needed. Consider using acetaminophen or ibuprofen to relieve pain or fever. Ask your healthcare professional or pharmacist what medications are safe for you or your loved one to take.
- If your child has a fever of 102.2°F (39°C) or higher, discharge or fluid coming from the ear, symptoms are much worse, or symptoms last for more than two or three days for AOM, you should contact your healthcare professional. If your child has symptoms of OME for more than one month or hearing loss, contact your healthcare professional.

## Get Smart: Know When Antibiotics Work

Get Smart Home

About



For Patients



For Healthcare Professionals



Improving Prescribing



**Core Elements of Outpatient Antibiotic Stewardship**

Outpatient Antibiotic Stewardship

Interventions That Work



Program Development and Evaluation



Programs and Measurement



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Materials and References



### Related Links

Antibiotic/Antimicrobial Resistance

CDC > [Get Smart Home](#) > [Programs and Measurement](#) > [State and Local Activities](#)

## Core Elements of Outpatient Antibiotic Stewardship

For Healthcare Professionals



The Core Elements of Outpatient Antibiotic Stewardship provides a framework for antibiotic stewardship for outpatient clinicians and facilities that routinely provide antibiotic treatment. This report augments existing guidance for other clinical settings. In 2014 and 2015, respectively, CDC released the [Core Elements of Hospital Antibiotic Stewardship Programs](#) and the [Core Elements of Antibiotic Stewardship for Nursing Homes](#). Antibiotic stewardship is the effort to measure and improve how antibiotics are prescribed by clinicians and used by patients. Improving antibiotic prescribing involves implementing effective strategies to modify prescribing practices to align them with evidence-based recommendations for diagnosis and management.



### Commitment

Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety.



### Action for policy and practice

Implement at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed.



### Tracking and reporting

Monitor antibiotic prescribing practices and offer regular feedback to clinicians, or have clinicians assess their own antibiotic prescribing practices themselves.



### Education and expertise

Provide educational resources to clinicians and patients on antibiotic prescribing, and ensure access to needed expertise on optimizing antibiotic prescribing.

### Core Elements

- [MMWR - Core Elements of Outpatient Antibiotic Stewardship](#)
- [Core Elements of Outpatient Antibiotic Stewardship](#) [PDF - 2.8 MB]
- [Checklist for Clinicians: Core Elements of Outpatient Antibiotic Stewardship](#) [PDF - 529 KB]

<http://www.cdc.gov/getsmart/community/improving-prescribing/core-elements/core-outpatient-stewardship.html>

Medscape video: [http://www.medscape.com/viewarticle/871205?src=par\\_cdc\\_stm\\_mscpedt&faf=1](http://www.medscape.com/viewarticle/871205?src=par_cdc_stm_mscpedt&faf=1)



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# Presidential Proclamation -- Get Smart About Antibiotics Week, 2016

GET SMART ABOUT ANTIBIOTICS WEEK, 2016

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

## A PROCLAMATION

Since their discovery nearly nine decades ago, antibiotics have transformed the world of modern medicine. They have been instrumental in combating previously deadly or debilitating illnesses and have saved countless lives. Yet the misuse of antibiotics can pose risks to public health. As antibiotics have become more

<https://www.whitehouse.gov/the-press-office/2016/11/10/presidential-proclamation-get-smart-about-antibiotics-week-2016>

## Summary

- Antibiotic stewardship is one of the most important strategies to combat antibiotic resistance and keep our patients safe
- The *Core Elements of Outpatient Stewardship* provides a framework for improving outpatient antibiotic prescribing
- The *Core Elements of Outpatient Stewardship* include the following:
  - **Commitment**
  - **Action for Policy and Practice**
  - **Tracking and Reporting**
  - **Education and Expertise**
- We can all be antibiotic stewards — please implement the Core Elements in your practice!



### **Acknowledgements:**

Memo Sanchez, Rebecca Roberts, Lauri Hicks

Jonathan A. Finkelstein, Jeffrey S. Gerber, Adam L. Hersh,  
David Y. Hyun, Jeffrey A. Linder, Larissa S. May, Daniel  
Merenstein, Katie J. Suda, Rachel Zetts, Kelly O'Neill,  
Austyn Dukes, Rachel Robb, Meredith Reagan

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For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

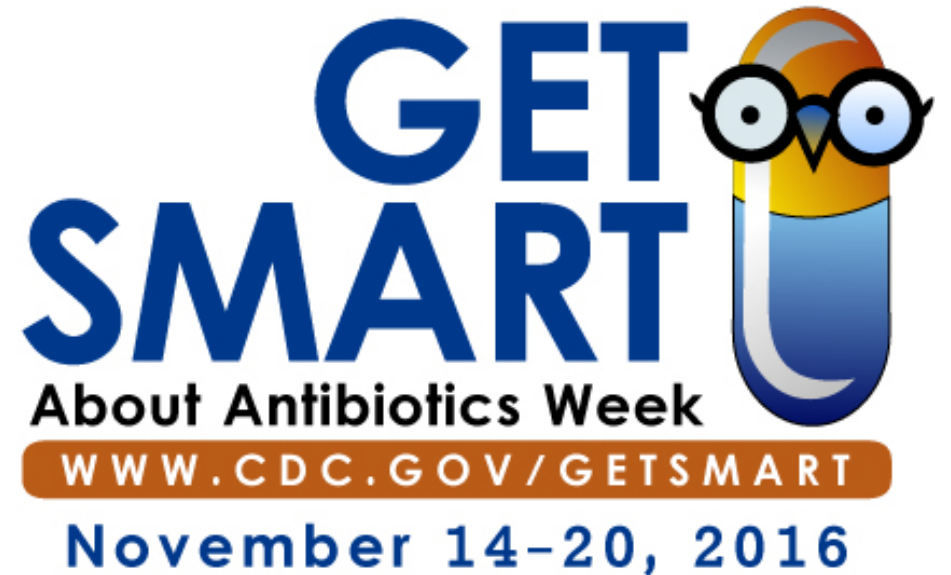


## Before We End Today's Webinar...

- **Question and Answer Session**
  - *Please submit your questions via the chat window, located on the lower left-hand side of the webinar screen.*



- Join the **global Twitter chat on Friday, November 18**, from **11am-1pm EST**.
  - Use **#AntibioticResistance** and follow **@CDCGov** throughout the chat.
- Check out CDC's new [Safe Healthcare Blog](#) featuring a look at how states and clinicians across the country are committing to appropriate antibiotic prescribing via personalized commitment posters in exam rooms.
- Check out the newly expanded [Antibiotic Resistance Patient Safety Atlas](#) which now includes the most complete **data** currently available on the **outpatient antibiotic prescribing** in each state and **antibiotic stewardship programs** in hospitals across the country.
- Use and share [Get Smart about Antibiotics Week promotional materials](#).



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### □ Continuing Education

- Detailed instructions for taking the post-test and evaluation will appear on your screen as soon as today's webinar concludes.
  - [www.cdc.gov/tceonline](http://www.cdc.gov/tceonline); Access Code: **WC1115**
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**THANK YOU**