Outpatient Antibiotic Stewardship

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May 2020

Financial Disclosures

- None

Objectives

- Identify opportunities and barriers for improving outpatient prescribing and use
- Discuss CDC's Core Elements of Outpatient Antibiotic Stewardship
- Evaluate the evidence regarding outpatient antimicrobial stewardship interventions and initiatives
- Identify effective antibiotic stewardship interventions to improve outpatient antibiotic prescribing

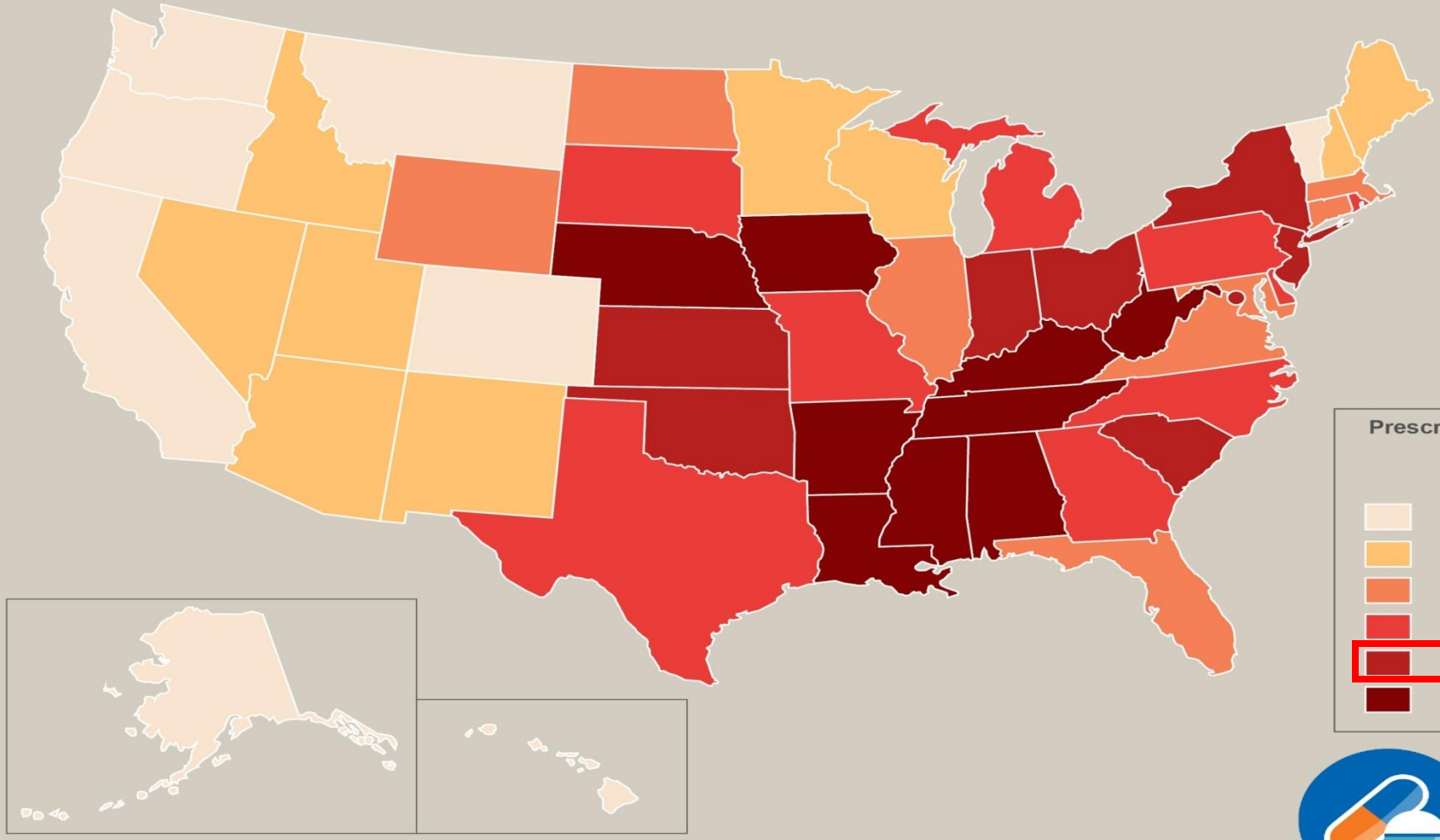
Background

Antibiotic Stewardship

"Antibiotic stewardship is the systematic effort to improve antibiotic use to improve patient outcomes in order to help patients and combat antibiotic resistance."

CDC. 2017 Antibiotic Use in the United States: Progress and Opportunities

Community Antibiotic Prescriptions per 1,000 Population by State - 2017



Prescriptions per 1,000 Population

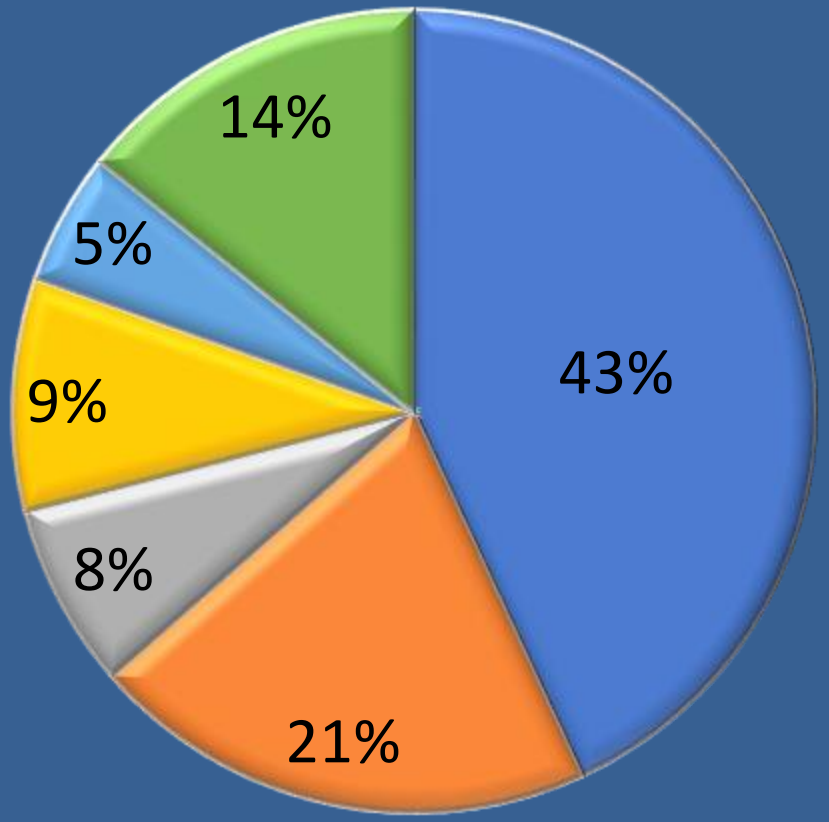
	Previous Methodology	Revised Methodology
	504 - 645	489 - 628
	658 - 735	636 - 703
	748 - 839	721 - 809
	844 - 890	816 - 861
	891 - 945	862 - 914
	946 - 1,254	918 - 1,215

Data source: IQVIA Xponent 2017

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

https://www.cdc.gov/antibiotic-use/community/images/materials/Antibiotic-Prescriptions-Map-2017.jpg

PO Antibiotic Prescriptions by Specialty



https://www.cdc.gov/antibiotic-use/community/pdfs/annual-reportsummary_2014.pdf Accessed 20 April 2020

Outpatient Antibiotic Use Statistics

National Ambulatory Medical Care Survey

National Hospital Ambulatory Medical Care Survey

30% antibiotic prescriptions were unnecessary

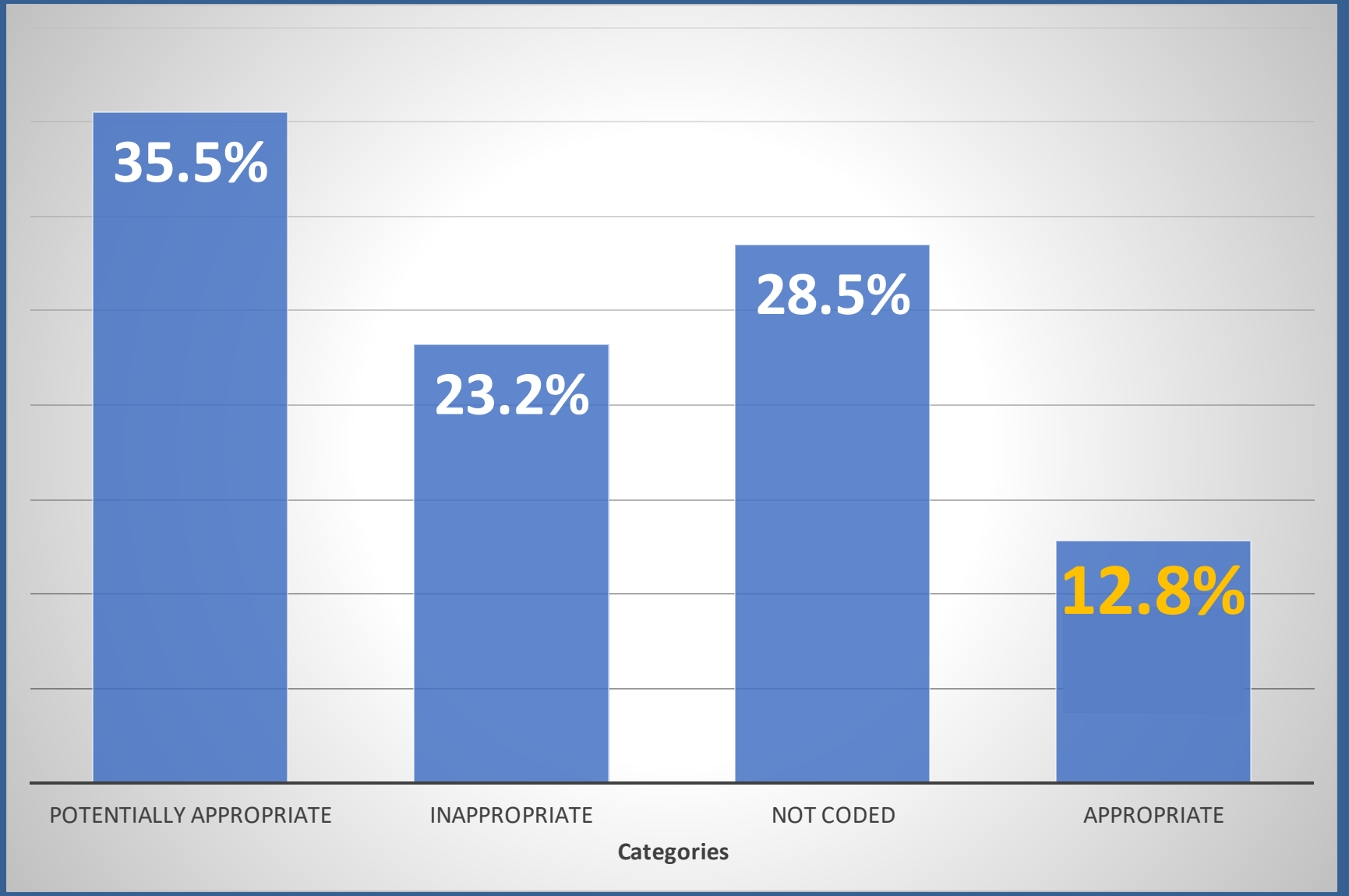
- not indicated

50% inappropriate

- not indicated or incorrect antibiotic selection

Fleming-Dutra KE, Hersh AL, Shapiro DJ, et al. JAMA 2016

Another Outpatient Abx Study



Chua KP, Fischer MA, Linder JA. BMJ 2019

Question 1

A 25 year-old non-pregnant female presents to your clinic at with dysuria.

Denies: fever, chills, flank pain

Which antibiotic is the best option to treat her uncomplicated UTI? (NKDA; CrCl=125 mL/min)

a. Ciprofloxacin
b. Nitrofurantoin
c. Trimethoprim-sulfamethoxazole
d. Amoxicillin

Question 2

A 69 year old male presents to clinic with fever, cough, SOB for three days.

Findings on CXR are consistent with CAP

PMH: hypertension and hyperlipidemia

NKDA

What is your antibiotic treatment plan for this patient?

Question 3

SP is a 54 YOF who presents to clinic with new onset cough for 6 days

- nonpurulent sputum production
- SOB
- Afebrile
- HR = 80 bpm
- RR = 18

You diagnose her with acute bronchitis. What is your antibiotic treatment plan for this patient?

Question 1

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FDA News Release

FDA updates warnings for fluoroquinolone antibiotics on risks of mental health and low blood sugar adverse reactions

FDA determined that fluoroquinolones should be reserved for use in patients with these conditions who have no alternative treatment options

- acute bacterial sinusitis
- acute bacterial exacerbation of chronic bronchitis
- uncomplicated urinary tract infections

FQN are the ONLY oral antibiotics with pseudomonas coverage

https://www.fda.gov/news-events/press-announcements/fda-updates-warnings-fluoroquinolone-antibiotics-risks-mental-health-and-low-blood-sugar-adverse Accessed 20 April 2020

Treatment – Uncomplicated Cystitis

Role in Therapy	Drug	Dose & Duration
1st line	nitrofurantoin *	100 mg BID x 5 days
	TMP/SMX**	1 DS tablet BID x 3 days
	Fosfomycin	3 g x 1 dose
Alternatives	cephalexin	500 mg BID-QID 3-7 days
	cefdinir	300 mg BID x 3-7 days
	amoxicillin/clavulanate	500 mg BID x 3-7 days
3rd Line	ciprofloxacin	250 mg BID x 3 days
	levofloxacin	250 mg once daily x 3 days

*depends on renal fxn; do not use for pyelo

**not if local resistance rates >20%

(IDSA does not recommend amoxicillin or ampicillin as empiric therapy)

The Sanford Guide to Antimicrobial Therapy. (2019). [Mobile application software]. Retrieved 20 April 2020

Hooten, TM et al. (2019). Acute simple cystitis in women. UpToDate. Retrieved 20 April 2020

Gupta, K et al. (2011). IDSA International clinical practice guidelines for acute uncomplicated cystitis. https://academic.oup.com/cid/article-abstract/52/5/e103/388285 accessed 20 April 2020

Question 1

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NKDA

What is your antibiotic treatment plan for this patient?

Initial Treatment Strategies: Outpatient CAP

	Standard Regimen
-No comorbidities -No risk factors for MRSA* -No risk factors for Pseudomonas aeruginosa* -prior respiratory isolation of MRSA or P. aeruginosa - recent hospitalization AND receipt of parenteral antibiotics (in the last 90 d)	**Monotherapy:** amoxicillin -OR- doxycycline -OR- macrolide (if local pneumococcal resistance is < 25%)
With comorbidities -chronic heart, lung, liver, or renal disease -diabetes mellitus -alcoholism -malignancy -asplenia	**Combo therapy**: amoxicillin/clavulanate or cephalosporin -AND- macrolide or doxycycline -OR- **Monotherapy**: respiratory FQN

Gmetlay JP, et al. (2019). IDSA Diagnosis and treatment of adults with community-acquired pneumonia. https://www.atsjournals.org/doi/pdf/10.1164/rccm.201908-1581ST accessed 20 April 2020

Question 3

SP is a 54 YOF who presents to clinic with

- new onset cough for 8-10 days
  - nonpurulent sputum production
  - SOB
  - Afebrile
  - HR = 80 bpm
  - RR = 18

You diagnose her with uncomplicated acute bronchitis. What is your antibiotic treatment plan for this patient?

CDC Core Elements

CDC Core Elements for Antibiotic Stewardship

- Hospital Antibiotic Stewardship Programs (2014)
- Antibiotic Stewardship for Nursing Homes (2015)
- Antibiotic Stewardship in Outpatient Settings (2016)
- Implementation of Antibiotic Stewardship Core Elements at Small and Critical Access Hospitals (2017)

Core Elements of Outpatient Antibiotic Stewardship

https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

Clinician Checklist for Core Elements

Clinician Checklist for Core Elements of Outpatient Antibiotic Stewardship

CDC recommends that outpatient clinicians take steps to implement antibiotic stewardship activities. Use this checklist as a baseline assessment of policies and practices that are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually).

COMMITMENT

1. **Can you demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics?** ❑ Yes ❑ No

   If yes, indicate which of the following are in place (select all that apply)
   - ❑ Write and display public commitments in support of antibiotic stewardship.

ACTION

2. **Have you implemented at least one practice to improve antibiotic prescribing?** ❑ Yes ❑ No

   If yes, indicate which practices which you use. (Select all that apply.)
   - ❑ Use evidence-based diagnostic criteria and treatment recommendations.
   - ❑ Use delayed prescribing practices or watchful waiting, when appropriate.

TRACKING AND REPORTING

3. **Do you monitor at least one aspect of antibiotic prescribing?** ❑ Yes ❑ No

   If yes, indicate which of the following are being tracked. (Select all that apply.)
   - ❑ Self-evaluate antibiotic prescribing practices.
   - ❑ Participate in continuing medical education and quality improvement activities to track and improve antibiotic prescribing.

EDUCATION AND EXPERTISE

4. **Do you provide education to patients and seek out continuing education on antibiotic prescribing?** ❑ Yes ❑ No

   If yes, indicate how you provide antibiotic stewardship education. (Select all that apply.)
   - ❑ Use effective communications strategies to educate patients about when antibiotics are and are not needed.
   - ❑ Educate about the potential harms of antibiotic treatment.
   - ❑ Provide patient education materials

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

Commitment

Can you demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics?

Write and display public commitments in support of antibiotic stewardship

Example: Poster containing a public commitment to use antibiotics appropriately

- Include clinician picture and signature
- Display in patient exam rooms

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship.* MMWR Recomm Rep 2016;65(No. RR-6):1–12

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,

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

https://www.cdc.gov/antibiotic-use/week/pdfs/Commitment-Poster-english-11x17.pdf

https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

Action

Have you implemented at least one practice to improve antibiotic prescribing?

Use evidence-based diagnostic criteria and treatment recommendations

Use national guidelines (e.g., IDSA) along with local pathogen susceptibilities to guide antibiotic choices

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship.* MMWR Recomm Rep 2016;65(No. RR-6):1–12

Symptom Relief for Viral Illnesses

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

1. DIAGNOSIS

- [x] Cold or cough
- [ ] Middle ear fluid (Otitis Media with Effusion, OME)
- [ ] Flu
- [ ] Viral sore throat
- [ ] Bronchitis
- [ ] Other:

You have been diagnosed with an illness caused by a virus. Antibiotics do not work on viruses. When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. The treatments prescribed below will help you feel better while your body fights off the virus.

2. GENERAL INSTRUCTIONS

- [ ] Drink extra water and fluids.
- [ ] Use a cool mist vaporizer or saline nasal spray to relieve congestion.
- [ ] For sore throats in older children and adults, use ice chips, sore throat spray, or lozenges.
- [ ] Use honey to relieve cough. Do not give honey to an infant younger than 1.

3. SPECIFIC MEDICINES

- [x] Fever or aches:
- [ ] Ear pain:
- [x] Sore throat and congestion:

Use medicines according to the package instructions or as directed by your healthcare professional. Stop the medication when the symptoms get better.

4. FOLLOW UP

- [ ] If not improved in _____ days/hours, if new symptoms occur, or if you have other concerns, please call or return to the office for a recheck.
- [ ] Phone:
- [ ] Other:

Signed: _____

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

CDC

https://www.cdc.gov/antibiotic-use/community/pdfs/aaw/CDC-AU_RCx_Relief_for_Viral_Illness_sm_v8_508.pdf

Action

Have you implemented at least one practice to improve antibiotic prescribing?

Use delayed prescribing practices or watchful waiting when appropriate

- Delayed prescriptions and watchful waiting were both effective at reducing antibiotic prescriptions

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

What Is Delayed Prescribing?

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

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. Continue to monitor your own symptoms over the next few days.

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

If you **do not feel better in** 4 **days/hours or feel worse,** go ahead and fill your prescription.

If you **feel better, you do not need the antibiotic,** and do not have to risk the side effects.

Waiting to see if you really need an antibiotic can help you take antibiotics only when needed. When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. Common side effects of antibiotics can include rash, dizziness, nausea, diarrhea, and yeast infections.

Antibiotics save lives, and when a patient needs antibiotics, the benefits outweigh the risks of side effects. You can protect yourself and others by learning when antibiotics are and are not needed.

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

CDC

https://www.cdc.gov/antibiotic-use/community/pdfs/aaw/CDC-AU_RCx_Delayed_Prescribing_sm_v9_508.pdf

https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

Tracking and Reporting

Do you monitor at least one aspect of antibiotic prescribing?

Self-evaluate antibiotic prescribing practices

- Providers can evaluate themselves and align their prescribing habits with practice guidelines
- Peer comparison

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

Tracking and Reporting

Do you monitor at least one aspect of antibiotic prescribing?

Participate in continuing medical education and quality improvement activities to track and improve antibiotic prescribing

- Can be conducted through health professional activities, CME courses, CDC Train

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

CDC's Antibiotic Stewardship Training Series

Web-based self study

9 Modules

CE is available

https://www.train.org/cdctrain/training_plan/3697

https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

Education and Expertise

Do you provide education to patients and seek out continuing education on antibiotic prescribing?

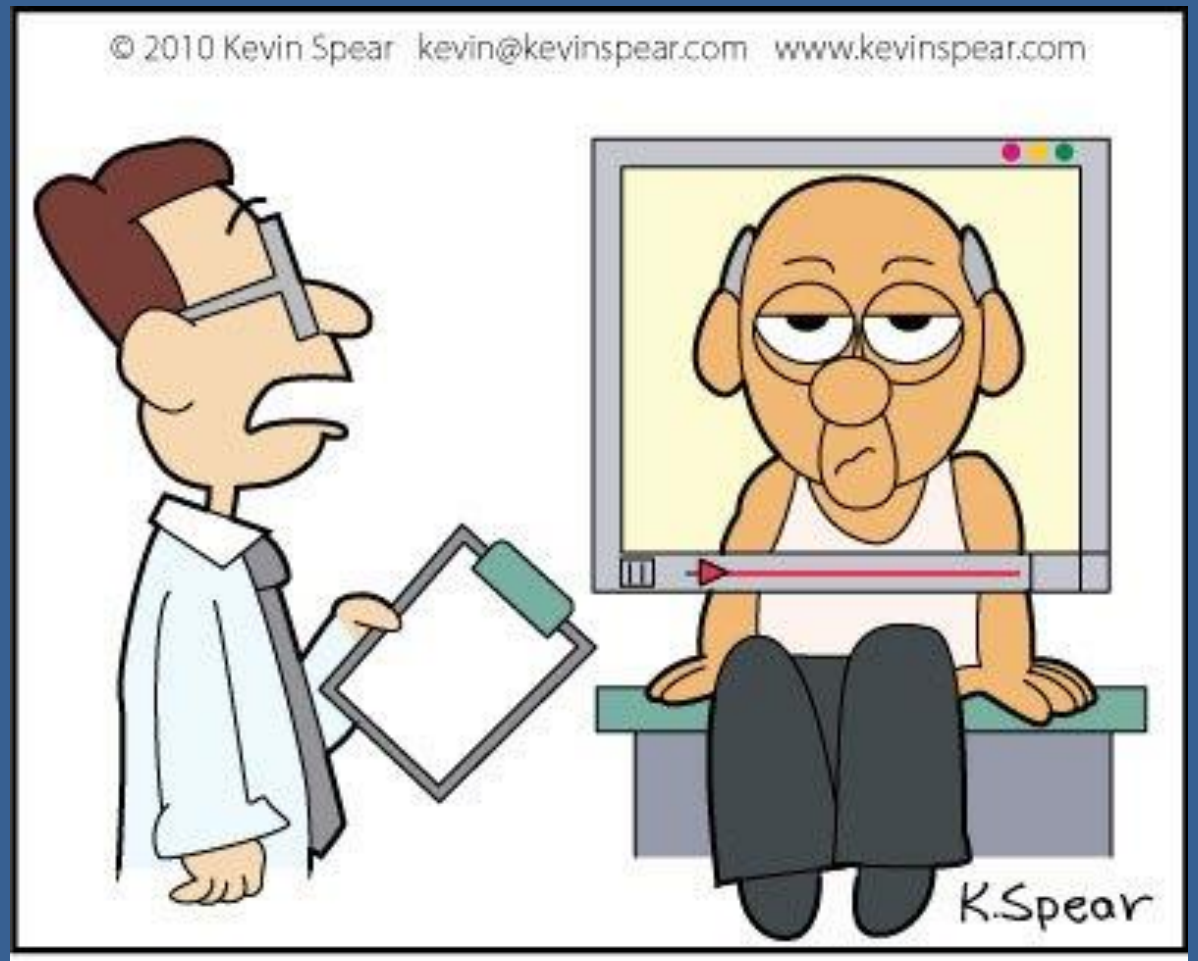
Use effective communication strategies to educate patients about when antibiotics are and are not needed

Dialogue Around Respiratory Illness Treatment (DART) –CDC Training Module 6

- Negative treatment recommendation plus positive treatment recommendation with a contingency plan resulted in 85% reduction in risk of prescribing antibiotics

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

What does this look like?



What does this look like?

For your sore throat you can try lozenges, sore throat spray and salt water gargles to help with the pain.

This looks like a virus. Antibiotics won't help you feel better faster when you have a virus.

Education and Expertise

Do you provide education to patients and seek out continuing education on antibiotic prescribing?

Educate about the potential harms of antibiotic treatment

A study of parents of pediatric parents concluded that parents are interested in information on antibiotic associated ADEs while adult patients may be less receptive

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

IMPROVING ANTIBIOTIC USE

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

Do I really need antibiotics?

SAY YES TO ANTIBIOTICS
when needed for certain infections caused by **bacteria**.

SAY NO TO ANTIBIOTICS
for **viruses**, such as colds and flu, or runny noses, even if the mucus is thick, yellow or green. Antibiotics also won't help for some common bacterial infections including most cases of bronchitis, many sinus infections, and some ear infections.

Antibiotics are only needed for treating certain infections caused by bacteria.

Antibiotics do NOT work on viruses.

Do antibiotics have side effects?

Anytime antibiotics are used, they can cause side effects. When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. Common side effects of antibiotics can include:

Rash | Dizziness | Nausea | Yeast Infections | Diarrhea

More serious side effects include *Clostridioides difficile* infection (also called *C. difficile* or *C. diff*), which causes diarrhea that can lead to severe colon damage and death. People can also have severe and life-threatening allergic reactions.

Antibiotics save lives. When a patient needs antibiotics, the benefits outweigh the risks of side effects.

1 out of 5
medication-related visits to the ED are from reactions to antibiotics.

What are antibiotic-resistant bacteria?

Antibiotic resistance occurs when bacteria no longer respond to the drugs designed to kill them. Anytime antibiotics are used, they can cause antibiotic resistance.

Bacteria, not the body, become resistant to the antibiotics designed to kill them.

When bacteria become resistant, antibiotics cannot fight them, and the bacteria multiply.

Some resistant bacteria can be harder to treat and can spread to other people.

More than **2.8 million** antibiotic resistant infections occur in the United States each year, and more than **35,000 people** die as a result.

Can I feel better without antibiotics?

Respiratory viruses usually go away in a week or two without treatment. To stay healthy and keep others healthy, you can:

Clean Hands | Cover Coughs | Stay Home When Sick | Get Recommended Vaccines

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

https://www.cdc.gov/antibiotic-use/community/pdfs/aaw/au_improving-antibiotics-infographic_8_5x11_508.pdf

Education and Expertise

Do you provide education to patients and seek out continuing education on antibiotic prescribing?

Provide patient education materials

- Not much evidence supporting patient education materials alone
  - Educate patient on subject matter

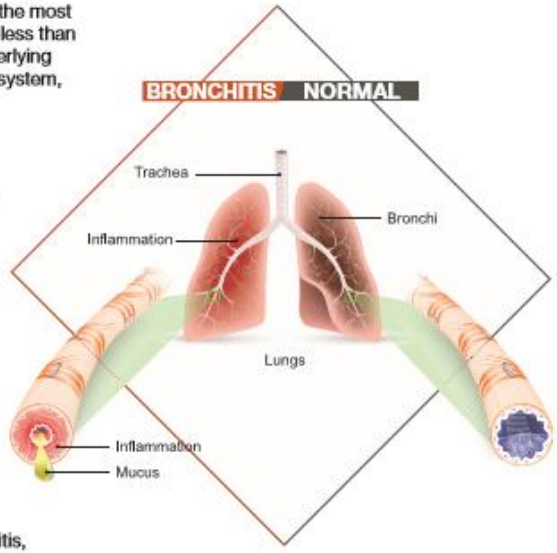
Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

Preventing and Treating Bronchitis

Cough keeping you up at night? Soreness in your chest and feeling tired? You could have acute bronchitis, but be aware: **an antibiotic will not help you get better.**

What is Acute Bronchitis?

Bronchitis occurs when the airways of the lungs swell and produce mucus. That's what makes you cough. Acute bronchitis, often called a "chest cold," is the most common type of bronchitis. The symptoms last less than 3 weeks. If you're a healthy person without underlying heart or lung problems or a weakened immune system, this information is for you.



Symptoms

- Coughing with or without mucus production
- Soreness in the chest
- Fatigue (feeling tired)
- Mild headache
- Mild body aches
- Watery eyes
- Sore throat

Causes

- Acute bronchitis is usually caused by a virus and often occurs after an upper respiratory infection.
- Bacteria can sometimes cause acute bronchitis, but even in these cases antibiotics are NOT recommended and will not help you get better.

When to Seek Medical Care

See a healthcare professional if you or your child have any of the following:

- Temperature of 100.4°F or higher
- Cough with bloody mucus
- Shortness of breath or trouble breathing
- Symptoms that last more than 3 weeks
- Repeated episodes of bronchitis

www.cdc.gov/antibiotic-use

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

CS279374A

Treatment

Acute bronchitis usually gets better on its own—without antibiotics. **Antibiotics won't help you get better if you have acute bronchitis.**

When antibiotics aren't needed, they won't help you, and the side effects could still cause harm. Side effects can range from minor issues, like a rash, to very serious health problems, such as antibiotic-resistant infections and *C. diff* infection, which causes diarrhea that can lead to severe colon damage and death.

If you have whooping cough (pertussis) or pneumonia, which can have similar symptoms to acute bronchitis, your doctor will most likely prescribe antibiotics.

How to Feel Better

- Get plenty of rest.
- Drink plenty of fluids.
- Use a clean humidifier, cool mist vaporizer, or saline nose drops to relieve a stuffy nose.
  - For young children, use a rubber suction bulb to clear mucus.
- Breathe in steam from a bowl of hot water or shower.
- Suck on lozenges. Do not give lozenges to children younger than 4 years old.
- Use honey to relieve cough for persons at least 1 year old.
- Ask your doctor or pharmacist about over-the-counter medicines that can help you feel better. Always use over-the-counter medicines as directed. Remember, over-the-counter medicines may provide temporary relief of symptoms, but they will not cure your illness.

Remember, always use over-the-counter medicines as directed. **Be careful about giving over-the-counter medicines to children. Not all over-the-counter medicines are recommended for children of certain ages.**

- Pain relievers:
  - Babies 6 months or younger: only give acetaminophen.
  - Children 6 months or older: it is OK to give acetaminophen or ibuprofen.
  - Never give aspirin to children because it can cause Reye's syndrome, a rare but very serious illness that harms the liver and brain.
- Cough and cold medicines:
  - Children younger than 4 years old: do not use unless a doctor specifically tells you to. Misuse of over-the-counter cough and cold medicines in young children can result in serious and potentially life-threatening side effects.
  - Children older than 4 years old: discuss with your child's doctor if over-the-counter cough and cold medicines are safe to give to your child for temporary symptom relief.

Prevention

- Practice good hand hygiene.
- Make sure you and your child are up-to-date with all recommended vaccines.
- Don't smoke and avoid secondhand smoke, chemicals, dust, or air pollution.
- Always cover your mouth and nose when coughing or sneezing.
- Keep your distance from others when you are sick, if possible.

Antibiotics will not treat acute bronchitis. Using antibiotics when not needed could do more harm than good.

https://www.cdc.gov/antibiotic-use/community/downloads/Preventing-Treating-Bronchitis-p.pdf Accessed 20 April 2020

Facility Checklist for Core Elements

Facility Checklist for Core Elements of Outpatient Antibiotic Stewardship

CDC recommends that outpatient care facilities take steps to implement antibiotic stewardship activities. Use this checklist as a baseline assessment of policies and practices that are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually).

COMMITMENT

1. **Can your facility demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics?** ❑ Yes ❑ No

   If yes, indicate which of the following are in place. (Select all that apply.)
   - ❑ Identify a single leader to direct antibiotic stewardship activities within a facility.
   - ❑ Include antibiotic stewardship-related duties in position descriptions or job evaluation criteria.
   - ❑ Communicate with all clinic staff members to set patient expectations.

ACTION

2. **Has your facility implemented at least one policy or practice to improve antibiotic prescribing?** ❑ Yes ❑ No

   If yes, indicate which interventions are in place. (Select all that apply.)
   - ❑ Provide communications skills training for clinicians.
   - ❑ Require explicit written justication in the medical record for nonrecommended antibiotic prescribing.
   - ❑ Provide support for clinical decisions.
   - ❑ Use call centers, nurse hotlines, or pharmacist consultations as triage systems to prevent unnecessary visits.

TRACKING AND REPORTING

3. **Does your facility monitor at least one aspect of antibiotic prescribing?** ❑ Yes ❑ No

   If yes, indicate which of the following are being tracked. (Select all that apply.)
   - ❑ Track and report antibiotic prescribing for one or more high-priority conditions.
   - ❑ Track and report the percentage of all visits leading to antibiotic prescriptions.
   - ❑ (If already tracking and reporting one of the above) Track and report, at the level of a health care system, complications of antibiotic use and antibiotic resistance trends among common outpatient bacterial pathogens.
   - ❑ Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers.

EDUCATION AND EXPERTISE

4. **Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing?** ❑ Yes ❑ No

   If yes, indicate how your facility provides antibiotic stewardship education. (Select all that apply.)
   - ❑ Provide face-to-face educational training (academic detailing).
   - ❑ Provide continuing education activities for clinicians.
   - ❑ Ensure timely access to persons with expertise.

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship.* MMWR Recomm Rep 2016;65(No. RR-6):1–12

Commitment

1. **Can your facility demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics?**

<u>Identify a single leader to direct antibiotic stewardship activities within a facility</u>

- Core elements states successful hospital ASP programs have utilized a physician leader
- Leader can be a pharmacist

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No. RR-6):1–12

Commitment

1. **Can your facility demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics?**

Include antibiotic stewardship-related duties in position descriptions or job evaluation criteria

Communicate with all clinic staff members to set patient expectations

- Staff should use consistent messages when communicating with patients

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship.* MMWR Recomm Rep 2016;65(No. RR-6):1–12

Action

2. Has your facility implemented at least one policy or practice to improve antibiotic prescribing?

Provide communication skills training for clinicians

- Dialogue Around Respiratory Illness Treatment (DART) – Reviewed in Communication Training Module 6 of CDC Training on Antibiotic Stewardship
- Active training tends to be more effective than passive

Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship.* MMWR Recomm Rep 2016;65(No. RR-6):1–12

Action

2. Has your facility implemented at least one policy or practice to improve antibiotic prescribing?

Require explicit written justification in the medical record for non-recommended antibiotic prescribing

- Provider education and written justification in chart decreased antibiotic prescriptions 18% compared to 11% with education alone

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Action

2. **Has your facility implemented at least one policy or practice to improve antibiotic prescribing?**

Provide support for clinical decisions

- Use of clinical prediction rule in EHR
  - Ex: Walsh rule for streptococcal sore throat
    - NNT to prevent one antibiotic prescription was **10.8**
    - Must develop the process around the user and educate providers on how to use

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Action

2. Has your facility implemented at least one policy or practice to improve antibiotic prescribing?

Use call centers, nurse hotlines, or pharmacist consultations as triage systems to prevent unnecessary visits

- Use of nursing advice hotline to optimize self-care of URIs resulted in self-care in 88% of initial advice calls

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Tracking and Reporting

3. Does your facility monitor at least one aspect of antibiotic prescribing?

Track and report antibiotic prescribing for one or more high-priority conditions

- Includes UTIs, sinusitis, bronchitis and other respiratory infections where antibiotics are prescribed unnecessarily

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Tracking and Reporting

3. Does your facility monitor at least one aspect of antibiotic prescribing?

Track and report the percentage of all visits leading to antibiotic prescriptions

- Track all visits – this may lead to identifying providers who are diagnosis shifting (clinician manipulates diagnostic code to justify prescribing antibiotic)

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Tracking and Reporting

3. Does your facility monitor at least one aspect of antibiotic prescribing?

(If already tracking and reporting one of the above) Track and report, at the level of a health care system, complications of antibiotic use resistance trends among common outpatient bacterial pathogens

- Investigate Clostridioides difficile infections for possible links to ambulatory care visits
- Review antibiotic drug interactions and adverse drug events
- Utilize lab and infection prevention personnel to analyze resistance trends

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Tracking and Reporting

3. Does your facility monitor at least one aspect of antibiotic prescribing?

Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers

- The National Strategy for Combating Antibiotic-Resistant Bacteria aims to reduce inappropriate use 50% for monitored conditions in outpatient settings by 2020
- Current Healthcare Effectiveness Data and Information Set (HEDIS) measures
- Merit-based Incentive Payment System (MIPS)

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Education and Expertise

4. **Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing?**

<u>Provide face-to-face educational training (academic detailing)</u>

- Interactive and case-based education for clinicians reduced antibiotic prescribing 24.6%
- Peer comparison

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Education and Expertise

4. **Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing?**

Provide continuing education activities for clinicians

- Training should provide appropriate antibiotic prescribing, adverse drug events, and communication strategies to improve patient satisfaction

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Education and Expertise

4. Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing?

Ensure timely access to persons with expertise

- Pharmacists can assist clinicians in selecting appropriate antibiotic therapy
- Pharmacists have been associated with improved patient outcomes and overall cost savings in hospital stewardship programs

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Considerations

- Are you part of a larger health system or an independent practice?
- Do you have collaboration with a pharmacist, other physicians, microbiology lab, etc.?
- Do you work in Primary Care, Urgent Care, ED?

Intervention Types

- Indication-specific
  - Available guidelines to guide appropriate use
  - Problematic if no indication is required in EMR
- Medication-specific
  - Identifies targeted antimicrobial reduction interventions
  - Some meds may have other uses outside of ID
- Bug-specific
  - May not have access to many outpatient cultures
- Provider-specific
  - Concentrate on looking at high-prescribers
  - Create a general ASP plan and include peer comparison

Outpatient ASP Core Elements Checklist

- ✓Combination of interventions are more effective than single interventions
- ✓Interventions targeting decreases in overall antibiotic prescriptions were more often effective than interventions targeting improvements in antibiotic selection
- ✓Using EHR clinical decision support systems improves antibiotic selection – develop the process around the user and educate providers on how to use it
- ✓Educate parents on antibiotic use including possible adverse effects
- ✓No single intervention is recommended for all settings
- ✓Clinician education should be interactive, not passive, and include communication skills

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Outpatient Antibiotic Stewardship

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May 2020