

Precious Drugs & Scary Bugs



ANTIBIOTIC STEWARDSHIP TOOLKIT FOR PRIMARY CARE PROVIDERS

Antibiotics Stewardship Toolkit for Primary Care Providers

The purpose of this toolkit is to provide Illinois primary care providers with resources to support appropriate antibiotic prescribing as part of the Illinois Precious Drugs & Scary Bugs Campaign. Launched in March 2015, the campaign aims to promote the judicious use of antibiotics in the outpatient setting. At least 30 percent of antibiotic courses prescribed in the outpatient setting are unnecessary. Antibiotic resistance is among the greatest public health threats today, leading to two million infections and 23,000 deaths each year¹. In community settings, primary care physicians, physician assistants, and nurse practitioners are the highest prescribers of antibiotics and have an important role to play to ensure that antibiotics are prescribed only²:

- when needed;
- at the right dose;
- for the right duration; and
- at the right time.

The Centers for Disease Control and Prevention (CDC) recommends that all outpatient health care providers take steps to measure and improve how antibiotics are prescribed using the Core Elements of Outpatient Antibiotic Stewardship as a framework. The four core elements include:

- **Commitment:** Demonstrate dedication to optimizing antibiotic prescribing and patient safety
- **Action for Policy and Practice:** Implement a practice change to improve antibiotic prescribing
- **Tracking and Reporting:** Monitor antibiotic prescribing practices
- **Education and Expertise:** Provide educational resources to health care providers and patients

This toolkit is organized around these core elements and includes provider and patient resources. It is intended to be used as a practical action planning guide. For more information please visit www.cdc.com/antibiotic-use or e-mail DPH.DPSQ@Illinois.gov.

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¹ Centers for Disease Control and Prevention. (2017). *Antibiotic/Antimicrobial Resistance*. Available at: <https://www.cdc.gov/drugresistance/index.html>

² Centers for Disease Control and Prevention. (2015). Outpatient Antibiotic Prescription in the United States. Available at: <https://www.cdc.gov/antibiotic-use/community/programs-measurement/state-local-activities/outpatient-antibiotic-prescriptions-US-2015.html>

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1. MAKE A COMMITMENT.....[6](#)

You can demonstrate commitment to optimizing antibiotic prescribing and patient safety by:

- Submitting a letter of commitment to IDPH
- Displaying a customizable commitment poster
- Identifying a leader to direct antibiotic stewardship activities
- Including antibiotic stewardship-related duties in position descriptions or job evaluation criteria

2. ACT

Implement policies and interventions to promote appropriate antibiotic prescribing.

- Use evidence-based diagnostic criteria and treatment recommendations.....[10](#)
- Use delayed prescribing or watchful waiting.....[10](#)
- Provide communication skills training for prescribers.....[10](#)
- Require explicit written justification in the medical record for non-recommended antibiotic prescribing.....[10](#)

3. TRACK AND REPORT

Implement at least one system to track and report antibiotic prescribing.

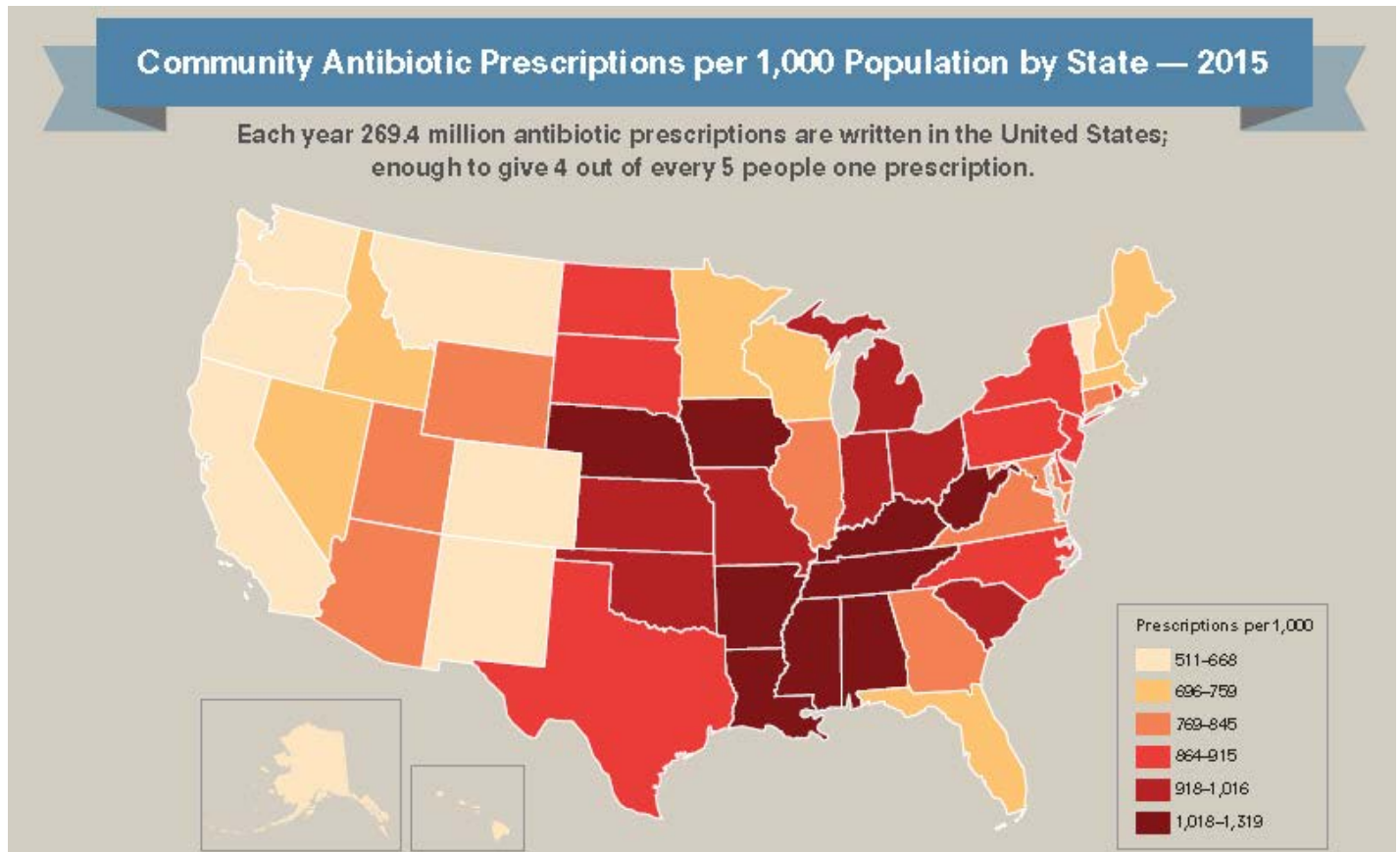
- Self-assess antibiotic prescribing by completing this [survey](#).....[13](#)
- Participate in continuing medical education and quality improvement activities to track and improve prescribing practices.....[13](#)
- Implement at least one antibiotic prescribing tracking and reporting system.....[14](#)

4. EDUCATE

Educate patients about appropriate antibiotic use and the potential harms of antibiotic treatment with these resources:

- Improving Antibiotic Use.....[16](#)
- Antibiotics Aren't Always the Answer.....[17](#)
- Preventing and Treating Ear Infections.....[18](#)
- Runny Nose from a Cold: Does your child need antibiotics?.....[19](#)
- Preventing and Treating Bronchitis.....[20](#)

The Need



Antibiotic Prescribing in Outpatient Settings

- Over 60 percent of all antibiotic expenditures are associated with the outpatient setting.
- At least 30 percent of antibiotics prescribed in the outpatient setting are unnecessary.³
- In 2015, Illinois outpatient providers dispensed 845 antibiotic prescriptions per 1,000 people.

Unintended Consequences of Antibiotic use

- Adverse events from antibiotics include rashes, diarrhea, and severe allergic reactions. These lead to an average of 143,000 emergency department visits each year and contribute to excess health care costs.⁴
- Antibiotic treatment is the most important risk factor for *Clostridium difficile* infection, which can cause life-threatening diarrhea. A 2013 study found that over 40 percent of patients with *C. difficile* infection visited a physician's office or dentist in the preceding four months.⁵

³ Centers for Disease Control and Prevention: <https://www.cdc.gov/antibiotic-use/community/programs-measurement/measuring-antibiotic-prescribing.html>

⁴ Centers for Disease Control and Prevention: https://www.cdc.gov/medicationsafety/program_focus_activities.html

What YOU Can Do:

Implement the Centers for Disease Control & Prevention's 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 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.

Read more about the Core Elements of Outpatient Antibiotic Stewardship by visiting:
<http://tinyurl.com/outpatientstewardship>

1. MAKE A COMMITMENT



A commitment from your office to prescribe antibiotics appropriately and engage in antibiotic stewardship is critical to improving antibiotic prescribing.

Here are some ways your office can demonstrate commitment:

- Submit a statement of commitment to the Illinois Department of Public Health (IDPH) by completing this [form](#). Providers making a commitment can choose to be recognized on IDPH’s Website at www.tinyurl.com/drugsandbugs.
- Display public commitment to antibiotic stewardship in your office (see sample templates on page [7](#)).
- Identify a single leader to direct antibiotic stewardship activities in your facility.
- Include antibiotic stewardship-related duties in position descriptions or job evaluation criteria.

Sample 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

Signature

Provider
photo

Signature

Provider
photo

Signature

Provider
photo

Signature

Facility Logo



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

Download the customizable template by visiting:

<http://tinyurl.com/drugsandbugsresources>

Tip Sheet for Leadership and Quality Improvement Lead: Maximizing Utility of the Commitment Poster

1. Discuss your facility's participation in the Precious Drugs & Scary Bugs Campaign

Educate healthcare providers and staff about the goals of the campaign and strategies for using the commitment poster.

2. Hang poster prominently in examination rooms and elsewhere

During peak flu season (October to April), display the poster where it can be easily read by the patient and serve as a reminder to the provider during patient visits. Additional posters can be displayed in high traffic areas like waiting rooms.

Example of ideal location



Poster is in clear view.

Example of less desirable location



Cords obstructing view of the poster.

Sample email template for notifying providers & staff

We are pleased to let you know that the commitment posters on judicious antibiotic use are here! As a reminder, this is part of our facility's participation in the [Precious Drugs & Scary Bugs Campaign](#). The posters have been customized with the photos and names of providers who practice at this facility and you will see them displayed in the examination rooms [list any additional locations].

[Name of Facility] is dedicated to using antibiotics wisely. We hope that you will find the poster useful in speaking with patients about antibiotic use. If you have any questions or feedback about the poster, please contact [insert name of individual].

Tip Sheet for Healthcare Providers: What to Do With the Commitment Poster

1. Prepare for crucial conversations with patients

- Review resources to build communication skills with patients, such as:
 - [Tips for talking to patients about viral respiratory infections](#)
 - [Choosing Wisely Patient Communication Modules](#)
 - Video Example: [Discussion with a patient who requests antibiotics](#)
 - [Dialogue Around Respiratory Illness Treatment Learning Modules](#)
- Role-play provider-patient conversations

2. Talk to patients about appropriate use of antibiotics and explain how inappropriate use can be harmful

Reinforce key messages on the commitment poster:

- Antibiotics only fight infections caused by bacteria.
- Antibiotics will NOT help you feel better if you have a viral infection like a cold, runny nose, or flu.
- If you take antibiotics when you don't really need them, they can cause more harm than good. For instance, you might feel worse, get diarrhea, rashes, or yeast infections. Also, each time people take antibiotics, they are more likely to carry resistant germs in their body.
- Assure patients that their bodies will fight viral illnesses that cause most ARIs



3. Encourage symptomatic treatment for viral syndromes

These free and downloadable prescription pads can be used to indicate symptomatic relief for a viral illness diagnosis:

- [Symptomatic relief prescription pad](#)
- [Delayed prescribing prescription pad](#)
- [Watchful waiting prescription pad](#)
- [Taking your antibiotics prescription pads](#)

2. Act



Primary care providers can implement policies and interventions to promote appropriate antibiotic prescribing.

- Use evidence-based diagnostic criteria and treatment recommendations
 - [Adult Treatment Recommendations](#)
 - [Pediatric Treatment Recommendations](#)
- Use delayed prescribing or watchful waiting, when appropriate
 - View examples of prescription pads for delayed prescribing, watchful waiting, and symptomatic relief on page [11](#)
- Provide communication skills training for prescribers
 - View a list of communication skills trainings on page [12](#)
- Require explicit written justification in the medical record for non-recommended antibiotic prescribing

Sample Delayed Prescribing, Watchful Waiting, and Symptomatic Relief Prescription Pads

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. 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 ____ 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.

What Is Watchful Waiting?



WAIT. DO NOT FILL YOUR PRESCRIPTION JUST YET.

Your healthcare professional believes your illness may go away 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 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 **feel better**, no further action is necessary. You don't need antibiotics.

If you do not feel better, experience new symptoms, or have other concerns, call your healthcare professional _____. Discuss whether you need a recheck or antibiotics.

It may not be convenient to visit your healthcare professional multiple times, but it is critical to 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

Symptom Relief for Viral Illnesses



1. DIAGNOSIS

- 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

- Fever or aches: _____
- Ear pain: _____
- 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.



Download these free resources by visiting [here](#).

Provider Communication Skills Training

[To Prescribe or Not to Prescribe? Antibiotics and Outpatient Infections](#)

- **Description:** Sponsored by Stanford University, this free continuing medical education (CME) module provides a practical approach for treating outpatient infections and navigating patient interactions through a “Choose your own adventure” experience.
- **Length:** 1.75 hours
- **CME credits offered:** Yes

[CDC Training on Antibiotic Stewardship](#)

- **Description:** Developed by the Centers for Disease Control and Prevention (CDC), this free module encourages open discussion among physicians and patients and informs health care professionals about appropriate antibiotic prescribing.
- **Length:** 8 hours
- **CME credits offered:** Yes

[Primary Care Office Visits: Antibiotic](#)

- **Description:** Sponsored by the Robert Wood Johnson Foundation, this role play simulation was created to assist healthcare providers and their patients in improving their communication skills.
- **Length:** 30 minutes
- **CME credits offered:** No

[Dialogue around Respiratory Illness Treatment: Optimizing Communication with Parents](#)

- **Description:** This learning module was created by The Mangione Smith Lab based on their research evaluating how doctor-parent communication influences antibiotic prescribing for acute respiratory illness in pediatric patients.
- **Length:** 20 minutes
- **CME credits offered:** No

[Choosing Wisely Communication Modules](#)

- **Description:** Developed by Drexel University College of Medicine, these interactive modules are designed to enhance physician and patient communication and address patient attitudes and beliefs that more care is better care. The modules are based on medical society recommendations from the *Choosing Wisely* campaign.
- **Length:** 1 hour
- **CME Credits offered:** No

3. Track and Report



Tracking and reporting antibiotic prescribing can guide changes in practice and be used to assess progress in improving antibiotic prescribing. Primary care providers can track and report antibiotic prescribing practices by doing the following:

- **Complete the enclosed survey.**
 - Self-assess prescribing behavior by completing this [survey](#).
- **Participate in continuing medical education and quality improvement activities to track and improve prescribing practices.**
 - Attend the annual Illinois Summit on Antimicrobial Stewardship
- **Implement at least one antibiotic prescribing tracking and reporting system.**
 - Review the Outpatient Antibiotic Stewardship Clinical Quality Measure Guidebook <https://tinyurl.com/otptmeasureguide>

Track and Report Antibiotic Prescribing

Below are two suggestions on how you can track antibiotic use in your facility.

1. Monitor performance on HEDIS measures

The [Healthcare Effectiveness Data and Information Set \(HEDIS\)](#) is a performance measurement tool used by most health plans in the United States. HEDIS includes the following clinical quality measures related to antibiotic use that are also part of the [Centers for Medicare and Medicaid Services \(CMS\) Meaningful Use Stage 2 Electronic Health Record Incentive Program](#):

- *Appropriate testing for children with pharyngitis* ([NQF 0002](#), CMS146v3, PQRS 66)
 - Percent of children ages 2 to 18 years who were diagnosed with pharyngitis, prescribed antibiotics and received group A streptococcus (strep) test for the episode.
- *Appropriate treatment for children with upper respiratory infection, URI* ([NQF 0069](#), CMS154v3, PQRS 65)
 - Percent of children ages 3 months to 18 years who were diagnosed with URI and were not dispensed an antibiotic prescription on or within three days after the episode date.
- *Avoidance of antibiotic treatment in adults with acute bronchitis* ([NQF 0058](#), PQRS 116)
 - Percent of adults ages 18-64 years diagnosed with acute bronchitis who were not dispensed an antibiotic prescription.

2. Use [template](#) provided to report summary data to IDPH

Facilities are encouraged to monitor their antibiotic prescribing as part of quality improvement efforts. To facilitate this activity, a simplified data reporting template was created. The template asks for facility-level summary information on antibiotic prescribing for:

- Acute respiratory tract infections (ARI) of multiple sites and sites not otherwise specified (ICD-9-CM 465.8 and 465.9; ICD-10-CM J06.9)
- Acute bronchitis and bronchitis not otherwise specified as acute or bronchitis (ICD-9-CM 466.x and 490.x; ICD-10-CM J20.9 and J40)

3. Give providers and staff feedback about the data

4. Educate



Primary care providers can educate patients about the potential harms of antibiotic treatment with the following fact sheets:

- Improving Antibiotic Use (page [16](#))
 - Download here: <https://tinyurl.com/impabxuse>
- Antibiotics Aren't Always the Answer (page [17](#))
 - Download here: <https://tinyurl.com/abxnotanswer>
- Preventing and Treating Ear Infections (page [18](#))
 - Download here: <https://tinyurl.com/noearinfection>
- Runny Nose from a cold: Does your child need antibiotics (page [19](#))
 - Download here: <https://tinyurl.com/noabx4nose>
- Preventing and Treating Bronchitis (page [20](#))

Improving Antibiotic Use

Download here: <https://tinyurl.com/impabxuse>

IMPROVING ANTIBIOTIC USE



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 *Clostridium 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

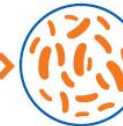
medication-related visits to the ED are from reactions to antibiotics.

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.

Each year in the United States, at least **2 million people** get infected with antibiotic-resistant bacteria. At least **23,000 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.



Antibiotics Are Not Always the Answer

Download here: <https://tinyurl.com/abxnotanswer>

ANTIBIOTICS AREN'T ALWAYS THE ANSWER.



Antibiotics save lives. Improving the way healthcare professionals prescribe antibiotics, and the way we take antibiotics, helps keep us healthy now, helps fight antibiotic resistance, and ensures that these life-saving drugs will be available for future generations.



The Facts:

When a patient needs antibiotics, the benefits outweigh the risks of side effects or antibiotic resistance.

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, or yeast infections. More serious side effects include *Clostridium 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 do not work on viruses, such as colds and flu, or runny noses, even if the mucus is thick, yellow, or green.

Antibiotics are only needed for treating certain infections caused by bacteria. Antibiotics also won't help for some common bacterial infections including most cases of bronchitis, many sinus infections, and some ear infections.

Taking antibiotics creates resistant bacteria. Antibiotic resistance occurs when bacteria no longer respond to the drugs designed to kill them.

Each year in the United States, at least 2 million people get infected with antibiotic-resistant bacteria. At least 23,000 people die.

If you need antibiotics, take them as prescribed. Talk with your doctor if you have any questions about your antibiotics, or if you develop any side effects, especially diarrhea, since that could be a *C. difficile* (*C. diff.*) infection which needs to be treated.

Reactions from antibiotics are common. 1 out of 5 medication-related emergency department visits are caused by reactions from antibiotics, and 1 out of 5 emergency department visits are caused by reactions from antibiotics.



Questions to Ask Your Healthcare Professional

If your child is sick, here are three important questions to ask your healthcare professional:

1. What is the best treatment for my child's illness?

Your child can feel better without an antibiotic. Respiratory viruses usually go away in a week or two without treatment. Ask your healthcare professional about the best way to feel better while your child's body fights off the virus.

Common Condition	Common Cause			Are Antibiotics Needed?
	Bacteria	Bacteria or Virus	Virus	
Strep throat	✓			Yes
Whooping cough	✓			Yes
Urinary tract infection	✓			Yes
Sinus infection		✓		Maybe
Middle ear infection		✓		Maybe
Bronchitis/chest cold (in otherwise healthy children and adults)*		✓		No*
Common cold/runny nose			✓	No
Sore throat (except strep)			✓	No
Flu			✓	No

* Studies show that in otherwise healthy children and adults, antibiotics for bronchitis won't help you feel better.

2. What do I need to know about the antibiotics you're prescribing for my child today?

The antibiotic prescribed should be the one most targeted to treat the infection, while causing the least side effects. Some types of antibiotics, such as fluoroquinolones, have a stronger link to severe side effects such as life-threatening *C. diff* infections. The Food and Drug Administration (FDA) warns healthcare professionals to only prescribe fluoroquinolones when another treatment option is unavailable. These powerful antibiotics are often prescribed even when they are not the recommended treatment.

3. What can I do to help my child feel better?

Pain relievers, fever reducers, saline nasal spray or drops, warm compresses, liquids, and rest may be the best ways to help your child feel better. Your healthcare professional can tell you how to help relieve your child's symptoms.

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



Preventing and Treating Ear Infections

Download here: <https://tinyurl.com/noearinfection>

Preventing and Treating Ear Infections



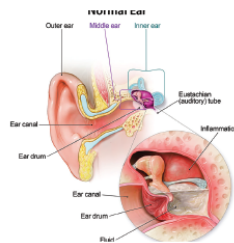
What is an ear infection?

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 and symptoms of infection.
- **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.



How are ear infections caused and how can they be prevented?

Bacteria

AOM is often caused by bacteria, and *Streptococcus pneumoniae* is a common bacterial cause of AOM.

- Ensure your child is up to date on vaccinations, including the pneumococcal vaccination which protects against *Streptococcus pneumoniae*. Breast feeding exclusively until your baby is 6 months old and continuing to breastfeed for at least 12 months can protect your baby from infections, including AOM.

Cold and Flu Season

AOM often occurs after a cold. Viruses cause OME (fluid in the middle ear), and then bacteria can grow in the fluid leading to AOM.

- Ensure your child is up to date on vaccinations and gets a flu vaccine every year.

Injury to the Ear

Foreign objects, like cotton swabs and bobby pins, can cause cuts and bruises in the ear canal, leading to infection, causing acute otitis external AOE.

- Avoid putting foreign objects in the ear.

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

CS281332A



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, breast feeding, and avoiding smoke.

How are ear infections treated?

- AOE is usually treated with antibiotic ear drops.
- OME usually goes away on its own and does not benefit from antibiotics but sometimes antibiotics are needed.
- AOM may not need antibiotics in many cases because the body's immune system can fight off the infection without help from antibiotics, but sometimes antibiotics are needed.

Watchful Waiting

- Mild AOM often will get better on its 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 AOM. 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.

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.

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

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.



Page 2 of 2

Runny Nose from a Cold: Does your child need antibiotics?

Download here: <https://tinyurl.com/noabx4nose>

Runny Nose from a Cold: Does your child need antibiotics?

Q&A Guide for Parents

Your child has a cold and a runny nose. You might think this means your child needs an antibiotic. A runny nose, even if you're seeing thick yellow or green mucus, is normal when you begin to get better from a cold.

What causes a runny nose during a cold?

When germs that cause colds first infect the nose and sinuses, the nose makes clear mucus. This helps wash the germs from the nose and sinuses. After two or three days, the body's immune system fights back, changing the mucus to a white or yellow color. When bacteria that normally live in the nose grow back during the recovery phase, they then change the mucus to a greenish color. This is all normal and does not mean your child needs antibiotics.

What should I do?

- Try using a cool mist vaporizer or saltwater nose drops.
- Watch your child. Runny nose, cough, and symptoms like fever, headache, and muscle aches may be unpleasant, but antibiotics will not help and the symptoms won't go away any faster. When antibiotics aren't needed, they won't help and could even hurt you.

Are antibiotics needed for a runny nose?

A runny nose is a normal part of a cold. Antibiotics do not work on viruses like colds or



runny noses (even if the mucus is thick yellow or green). Your child's doctor or nurse may prescribe other medicine or give you tips to help with symptoms like fever and cough.

Why not just try antibiotics?

When antibiotics aren't needed, they won't help and could even hurt you. Taking antibiotics creates resistant bacteria. Antibiotic resistance occurs when bacteria change and adapt to defeat the killing power of antibiotics. Any time antibiotics are used, they can cause side effects and lead to antibiotic resistance. Side effects of antibiotics can include rash, dizziness, stomach problems, or yeast infections.

Improving the way we take antibiotics can help fight antibiotic resistance and ensure that life-saving antibiotics will be available for future generations.

A runny nose typically gets better on its own, so antibiotics aren't needed. Talk to your healthcare professional about how to feel better while your body fights your illness.

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

National Center for Emerging and Zoonotic Infectious Diseases
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CDC/NIH

Preventing and Treating Bronchitis

Download here: <https://tinyurl.com/preventbronc>

Preventing and Treating Bronchitis

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



What is Acute Bronchitis?

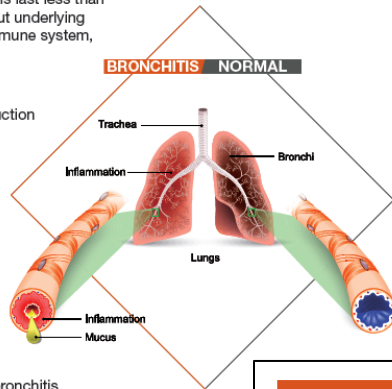
Bronchitis occurs when the airways of the lungs swell and produce mucus. That's what makes you cough. Acute bronchitis, often called a "chest cold," is the most common type of bronchitis. The symptoms last less than 3 weeks. If you're a healthy person without underlying heart or lung problems or a weakened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

Symptoms of Acute Bronchitis:

- ◆ Coughing with or without mucus production
- You may also experience:**
- ◆ 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 higher than 100.4 °F
 - ◆ Cough with bloody mucus
 - ◆ Shortness of breath or trouble breathing
 - ◆ Symptoms that last more than 3 weeks
 - ◆ Repeated episodes of bronchitis



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Recommended Treatment

Good news! Acute bronchitis almost always gets better on its own—without antibiotics. Using antibiotics when they aren't needed can do more harm than good. Unintended consequences of antibiotics include side effects, like rash and diarrhea, as well as more serious consequences, such as an increased risk for an antibiotic-resistant infection or *Clostridium difficile* infection, a sometimes deadly diarrhea.

To Feel Better:

- ◆ Get plenty of rest
- ◆ Drink plenty of fluids
- ◆ Use a clean humidifier or cool mist vaporizer
- ◆ Breathe in steam from a bowl of hot water or shower
- ◆ Use lozenges (*do not give lozenges to children younger than 4 years of age*)
- ◆ Ask your healthcare professional or pharmacist about over-the-counter medicines that can help you feel better

Remember, always use over-the-counter medicines as directed. **Do not use cough and cold medicines in children younger than 4 years of age** unless specifically told to do so by a healthcare professional.

Your healthcare professional will most likely prescribe antibiotics for a diagnosis of whooping cough (pertussis) or pneumonia.

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

And Remember:

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

