

# Acute Respiratory Tract Infection Guideline Summary

2012

Repeated studies and meta-analyses have demonstrated no significant benefit from antibiotics in otherwise healthy persons.

Antibiotic administration is associated with allergic reactions, *C. difficile* infection and future antibiotic resistance in the treated patient and the community.

## Educate and Advise Patients

Most patients want a diagnosis, not necessarily antibiotics. Explain to the patient that most bronchitis is a viral illness, and coughs are either viral or reactive airway disease. It is important to emphasize that antibiotics may have serious side effects and may create resistance to antibiotics in the patient or their family. This strategy is associated with equal or superior patient satisfaction.

Set appropriate expectations for the duration of symptoms, i.e., cough may last for up to four weeks.

Give symptomatic relief such as codeine-based cough suppressants, NSAIDs, multi-symptom OTC medications, and possibly bronchodilators if there is any bronchospasm.

Caution patients regarding symptoms (such as high fevers and shortness of breath) that indicate more severe disease.

## Recommend Vaccination

Prevent respiratory infections by vaccination:

- Influenza vaccination for all persons > 6 months of age, particularly older and younger patients and those with concomitant significant illnesses.
- Pneumococcal vaccination for those with concomitant significant illnesses and all persons > 65 years old who have not had a prior vaccination within 5 years.
- Pertussis immunization is recommended for nonpregnant adults of any age who have not had prior Tdap vaccination: promptly, if they have or anticipate having close contact with an infant less than 12 months of age (e.g., parents, grandparents, childcare providers, and healthcare practitioners); and for all others, once, in the place of one of their routine every-10-year tetanus boosters. Considerations for pregnant and postpartum patients are more complicated. See <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5704a1.htm>.

### Acute Bacterial Sinusitis:

1. The Sinus and Allergy Health Partnership. Antimicrobial Treatment Guidelines for Acute Bacterial Rhinosinusitis. *Otolaryngol Head Neck Surg.* January, Supplement 2004;130:1-45.
2. Piccirillo JF. Clinical Practice. Acute Bacterial Sinusitis. *NEJM.* August 2004; 351:902-910.
3. Snow V, et al. Principles of Appropriate Antibiotic Use for Acute Sinusitis in Adults: Background. *Ann Intern Med.* 2001;134:498-505.
4. Slavin RG, et al. The Diagnosis and Management of Sinusitis: A Practice Parameter Update. *J Allergy Clin Immunol.* 2005;116:S13-47.

### Pharyngitis:

1. Wessels MR. Clinical Practice. Streptococcal Pharyngitis. *NEJM.* 2011; 364:648-55.
2. Gerber GA, et al. Prevention of Rheumatic Fever and Diagnosis and Treatment of Acute Streptococcal Pharyngitis. *Circulation.* 2009;119:1541-1551.

### Nonspecific Cough Illnesses/Acute Bronchitis/Pertussis:

1. Gonzalez R, et al. Principles of Appropriate Antibiotic Use for Treatment of Acute Respiratory Tract Infections in Adults: Background, Specific Aims and Methods. *Ann Intern Med.* 2001;134:479-86.
2. Gonzalez R, et al. Principles of Appropriate Antibiotic Use for Treatment of Uncomplicated Acute Bronchitis: Background. *Ann Intern Med.* 2001;134:521-29.
3. Hooton T. Antimicrobial Resistance: A Plan of Action for Community Practice. *AFP.* 2001;63:1034-39.
4. Wenzel RP, et al. Acute Bronchitis. *NEJM.* 2006;355:2125-30.
5. Centers for Disease Control and Prevention. Recommended antimicrobial agents for the treatment and postexposure prophylaxis of pertussis: 2005 CDC guidelines. *MMWR* 2005;54(No. RR-14):1-16.

### Nonspecific URI:

1. Gonzalez R, et al. Principles of Appropriate Antibiotic Use for Treatment of Acute Respiratory Tract Infections in Adults: Background, Specific Aims and Methods. *Ann Intern Med.* 2001;134:479-86.
2. Gonzalez R, et al. Principles of Appropriate Antibiotic Use for Treatment of Acute Respiratory Tract Infections in Adults: Background. *Ann Intern Med.* 2001;134:490-94.
3. Institute for Clinical Systems Improvement. Health Care Guideline: Diagnosis and Treatment of Respiratory Illness in Children and Adults. Available at: [www.icsi.org](http://www.icsi.org). Accessed May 2011.

### Community Acquired Pneumonia:

1. Mandell LA, et al. Infectious Diseases Society of America/American Thoracic Society Consensus Guidelines on Management of Community-Acquired Pneumonia in Adults. *CID.* 2007;44:S27-72.
2. Drugs for Community-Acquired Bacterial Pneumonia. *Med Lett Drugs Ther.* 2007;49(1266):62-64.



For more information or additional materials, visit [www.aware.md](http://www.aware.md).

## Supporting Organizations

Alameda Alliance for Health  
Anthem Blue Cross  
Blue Shield of California  
CalOptima  
Care1st Health Plan  
CenCal Health  
Health Net of California

Health Plan of San Joaquin  
Inland Empire Health Plan  
Kaiser Permanente  
Kern Family Health Care  
L.A. Care Health Plan  
Molina Healthcare of California

## Endorsing Organizations

American Academy of Pediatrics, California District Association of California Nurse Leaders  
California Academy of Family Physicians  
California Academy of Physician Assistants  
California Association of Nurse Practitioners  
California Pharmacists Association  
California Society of Health-System Pharmacists  
Urgent Care Association of America  
Urgent Care College of Physicians

CMA Foundation  
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Sacramento, CA 95834

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| Illness   | Indications for Antibiotic Treatment   | Pathogen  | Antimicrobial Therapy   | Antibiotic  | Guidelines Reviewed   |
|---|--|---|---|---|---|
| <b>Acute Bacterial Sinusitis</b>                                | <b>When to Treat with an Antibiotic:</b> Diagnosis of acute bacterial sinusitis may be made in adults with symptoms of a viral URI that have not improved after 10 days or that worsen after 5-7 days.<br>Diagnosis may include some or all of the following symptoms or signs: Nasal drainage, nasal congestion, facial pressure/pain (especially when unilateral and focused in the region of a particular sinus), postnasal discharge, anosmia, fever, cough, maxillary dental pain, ear pressure/fullness. Less frequent signs and symptoms include hyposmia and fatigue, in conjunction with some or all of the above.    | <i>Streptococcus pneumoniae</i><br>Nontypeable <i>Haemophilus influenzae</i><br><i>Moraxella catarrhalis</i>                        | <b>Antibiotic Duration:</b> 7 to 10 days<br>Failure to respond after 72 hours of antibiotics:<br>Reevaluate patient and switch to alternate antibiotic.   | <b>1st Line:</b><br>• Amoxicillin<br><b>Alternatives:</b><br>• Amoxicillin-clavulanate<br>• Oral cephalosporins: not first generation and not cefixime (i.e. cefpodoxime, cefuroxime, cefdinir, etc.)<br>• Respiratory quinolone (levofloxacin, moxifloxacin)<br><b>For <math>\beta</math>-Lactam Allergy:</b><br>Trimethoprim-sulfamethoxazole, doxycycline, azithromycin, clarithromycin      | American Academy of Allergy, Asthma & Immunology (AAAAI)<br>American Academy of Family Physicians (AAFP)<br>American College of Physicians (ACP)<br>Centers for Disease Control and Prevention (CDC)<br>Sinus and Allergy Health Partnership (SAHP) |
|   | <b>When NOT to Treat with an Antibiotic:</b> Nearly all cases of acute sinusitis resolve without antibiotics. Antibiotic use should be reserved for moderate symptoms that are not improving after 10 days, or that are worsening after 5-7 days, and severe symptoms.   | Mainly viral pathogens  |   |   |   |
| <b>Pharyngitis</b>  | <b>When to Treat with an Antibiotic: <i>Streptococcus pyogenes</i> (Group A Strep)</b> Symptoms of sore throat, fever, headache.<br>Physical findings include: Fever, tonsillopharyngeal erythema and exudates, palatal petechiae, tender and enlarged anterior cervical lymph nodes, and absence of cough. Confirm diagnosis with throat culture or rapid antigen detection before using antibiotics.   | <i>Streptococcus pyogenes</i>   | <b>Group A Strep:</b> Treatment reserved for patients with positive rapid antigen detection or throat culture.<br><b>Antibiotic Duration:</b> Generally 10 days   | <b>1st Line:</b><br>• Penicillin V<br>• Benzathine penicillin G<br>• Amoxicillin<br><b>Alternatives:</b><br>• Oral cephalosporins<br><b>For <math>\beta</math>-Lactam Allergy:</b><br>• Azithromycin<br>• Clindamycin<br>• Clarithromycin   | ACP, CDC<br>Infectious Diseases Society of America (IDSA)<br>Institute for Clinical Systems Improvement (ICSI)  |
|   | <b>When NOT to Treat with an Antibiotic:</b> Most pharyngitis cases are viral in origin. The presence of the following is uncommon with Group A Strep, and point away from using antibiotics: conjunctivitis, cough, rhinorrhea, diarrhea, and absence of fever.   | Routine respiratory viruses   |   |   |   |
| <b>Nonspecific Cough Illness / Acute Bronchitis / Pertussis</b> | <b>When NOT to Treat with an Antibiotic:</b> 90% of cases are nonbacterial. Literature fails to support use of antibiotics in adults without history of chronic bronchitis or other co-morbid conditions.  | Mainly viral pathogens  | <b>Uncomplicated:</b> Not Indicated   | <b>Uncomplicated:</b> Not indicated<br><b>Chronic COPD:</b><br>• Amoxicillin, trimethoprim-sulfamethoxazole, tetracyclines<br><b>Other:</b><br>• <i>Bordetella pertussis</i> , <i>Chlamydomydia pneumoniae</i> , <i>Mycoplasma pneumoniae</i> - macrolide (azithromycin or clarithromycin) or doxycycline   | AAFP, ACP, CDC, IDSA  |
|   | <b>When to Treat with an Antibiotic:</b> Antibiotics not indicated in patients with uncomplicated acute bacterial bronchitis. Sputum characteristics not helpful in determining need for antibiotics. Treatment is reserved for patients with acute bacterial exacerbation of chronic bronchitis and COPD, usually smokers. In patients with severe symptoms, rule out other more severe conditions, e.g. pneumonia. Testing is recommended either prior to or in conjunction with treatment for pertussis. Testing for pertussis is recommended particularly during outbreaks and according to public health recommendations. | <i>Chlamydomydia pneumoniae</i><br><i>Mycoplasma pneumoniae</i><br><i>Bordetella pertussis</i>                                      |   |   |   |
| <b>Nonspecific URI</b>  | <b>When NOT to Treat with an Antibiotic:</b> Antibiotics not indicated; however, nonspecific URI is a major cause of acute respiratory illnesses presenting to primary care practitioners. Patients often present expecting some treatment. Attempt to discourage antibiotic use and explain appropriate non-pharmacologic treatment.  | Viral   | Not indicated.  | Not indicated.  | AAFP, ACP, CDC, ICSI, IDSA  |
| <b>Outpatient Community Acquired Pneumonia</b>                  | <b>When to Treat with an Antibiotic as an Outpatient:</b> Perform CXR to confirm the diagnosis of pneumonia. Evaluate for outpatient management. Consider pre-existing conditions, calculate Pneumonia Severity Index (PSI $\leq$ 90 for outpatient management) or CURB-65 (0 or 1 for outpatient management). Visit <a href="http://www.idsociety.org">www.idsociety.org</a> for more information.<br>Sputum gram stain and culture are recommended if active alcohol abuse, severe obstructive/structural lung disease, or pleural effusion.   | <i>Streptococcus pneumoniae</i><br><i>Mycoplasma pneumoniae</i><br><i>Haemophilus influenzae</i><br><i>Chlamydomydia pneumoniae</i> | <b>Empiric Therapy*:</b><br><b>Healthy with no DRSP** risk factors:</b> Macrolide***; consider doxycycline<br><b>Presence of co-morbidity, antibiotic use within 3 months**** or risk of DRSP:</b> Respiratory quinolone or combination of a $\beta$ -lactam plus a macrolide (or doxycycline as an alternative to the macrolide). Antibiotic duration: Minimum of 5 days; discontinue once afebrile for 48 - 72 hours.<br><br>* Consider alternative agents for macrolide-resistant <i>S. pneumoniae</i> in any patient including those without co-morbidities<br>** DRSP: Drug-resistant <i>S. pneumoniae</i><br>*** Azithromycin or Clarithromycin<br>**** Choose a class of antibiotic that differs from the prior antibiotic | <b>1st Line:</b><br>• Macrolide (azithromycin or clarithromycin)<br>• Doxycycline (alternative to macrolide)<br><b><math>\beta</math>-Lactam Alternatives:</b> (to be given with a macrolide)<br>• High dose amoxicillin or amoxicillin-clavulanate<br>• Cephalosporins (cefpodoxime, cefuroxime)<br><b>Other Alternative:</b><br>• Respiratory quinolone (moxifloxacin, levofloxacin 750mg QD) | Infectious Diseases Society of America / American Thoracic Society (IDSA/ATS)<br>ICSI   |
|   | <b>When NOT to Treat with an Antibiotic as an Outpatient:</b> Consider inpatient admission if PSI score $>$ 90, CURB-65 $\geq$ 2, unable to tolerate orals, unstable social situation, or if clinical judgment so indicates.   |   |   |   |   |