

Acute Respiratory Tract Infection Guideline Summary

2012

Clinician efforts to prescribe appropriately and to educate young patients and their parents/caregivers about antibiotics continue to play a vital role in decreasing resistance levels. Parents/caregivers want their children to feel better soon but often do not understand that sore throat is usually caused by a virus, will not resolve with antibiotics, and that these medications have the potential to do more harm than good.

Confirm a Streptococcal Cause of Pharyngitis BEFORE Prescribing Antibiotics.

Typical symptoms and signs (pharyngeal or tonsillar swelling, erythema and exudate, fever, and lymphadenopathy) increase the probability of Strep pharyngitis but cannot confirm it. The signs and symptoms of streptococcal and nonstreptococcal pharyngitis overlap too broadly for diagnosis to be made on clinical grounds alone. Laboratory confirmation of the diagnosis is necessary.

If rapid testing is negative, strongly consider throat culture for children, but wait to prescribe antibiotics until the culture is positive. (For situations where testing is not available or follow-up is difficult, clinical evidence-based strategies exist but do result in over-prescription.)

Prescribe a Narrow-Spectrum Antibiotic for Strep Pharyngitis.

- Penicillin PO or IM is still the drug of choice for strep pharyngitis.
- If the PO route is chosen, amoxicillin may be substituted for improved palatability.
- If a child with Strep pharyngitis is allergic to penicillin, use a cephalosporin, clindamycin, azithromycin or clarithromycin.

Educate, Advise and Assist Patients and Parents/Caregivers.

Viral cause: If rapid strep testing is negative, educate patients and parents/caregivers that the cause (pending possible cultures) is not strep but one of many different viruses, and antibiotics are not necessary. Even with typical symptoms, fewer than 30% of children have strep pharyngitis. Inform parents/caregivers that prior, repeated, or recent strep infection or exposure to someone with strep may increase the chance, but does not adequately confirm a current strep infection.

Value of testing/potential harm of antibiotics: Advise patients and parents/caregivers that rapid tests are highly reliable and allow providers to avoid using unnecessary antibiotics and the associated possible harm (medication side effects and increasing personal and societal antimicrobial resistance).

Symptom management: Whether caused by a virus or strep, pharyngitis is painful, and pain control is important for maintaining patient comfort and hydration. Assist parents/caregivers in identifying safe home remedies and appropriate over-the-counter (OTC) medications (e.g., analgesics and/or antipyretics) that may offer symptom relief. Consider prescribing stronger medications if current use of adequate amounts of OTC medications is not helping.

Signs of worsening: Educate patients and parents/caregivers that, occasionally, whatever the cause of a sore throat and whether antibiotics are prescribed or not, symptoms can worsen. If this is the case, re-evaluation is necessary. If symptoms do not begin to subside in 72 hours, schedule a re-visit for further evaluation.

Illness prevention: Review illness prevention, including good hand and respiratory hygiene. Offer influenza vaccination to children 6 months to 18 years of age. Encourage parents/caregivers and household contacts of children to get vaccinated.

CPT Codes for Group A Streptococcus Tests

Appropriate coding of Group A Streptococcus tests directly affects measures of appropriate therapy for pediatric pharyngitis, including the HEDIS measure *Appropriate Testing for Children with Pharyngitis*. To aid efforts to code accurately, CPT codes for Group A Streptococcus tests are provided below for office coders' use.

Throat culture	culture with isolation and identification of isolates (screening)	87070, 87071, 87081
Throat culture, Streptococcus Group A	direct probe technique amplified probe technique quantification antigen detection	87650 87651 87652 87430
Rapid Group A Strep Test		87880

For more information or additional materials, visit www.aware.md.

Otitis Media:

1. American Academy of Pediatrics, Subcommittee on Management of Acute Otitis Media. Diagnosis and Management of Acute Otitis Media. *Pediatrics*. 2004;113:1451-65.

Acute Bacterial Sinusitis:

1. The Sinus and Allergy Health Partnership. Antimicrobial Treatment Guidelines for Acute Bacterial Rhinosinusitis. *Otolaryngol Head Neck Surg*. 2004;130:1-45.
2. Piccirillo JF. Acute Bacterial Sinusitis. *NEJM*. 2004;351:902-910.
3. Subcommittee on Management of Sinusitis and Committee on Quality Improvement. Clinical Practice Guideline: Management of Sinusitis. *Pediatrics*. 2001;108:798-808.
4. O'Brien K, et al. Acute Sinusitis – Principles of Judicious Use of Antimicrobial Agents. *Pediatrics*. 1998;101:174-77.

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 Illness/Bronchitis/Pertussis:

1. O'Brien K, et al. Cough Illness/Bronchitis Principles of Judicious Use of Antimicrobial Agents. *Pediatrics*. 1998;101:178-81.
2. 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.

Bronchiolitis/Nonspecific URI:

1. Colgan R, et al. Appropriate Antimicrobial Prescribing: Approaches that Limit Antibiotic Resistance. *AFP*. 2001;64:999-1004.
2. Dowell S, et al. Appropriate Use of Antibiotics for URIs in Children: Part II. Cough, Pharyngitis and the Common Cold. *AFP*. 1998;58:1335-42.
3. Dowell S, et al. Principles of Judicious Use of Antimicrobial Agents for Pediatric Upper Respiratory Tract Infections. *Pediatrics*. 1998;101:163-65.
4. Institute for Clinical Systems Improvement. Health Care Guideline: Diagnosis and Treatment of Respiratory Illness in Children and Adults. Available at: www.icsi.org. Accessed May 2011.



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 Association of Nurse Practitioners
- California Pharmacists Association
- California Society of Health-System Pharmacists
- Urgent Care Association of America
- Urgent Care College of Physicians
- California Academy of Family Physicians
- California Academy of Physician Assistants

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For more information visit our website:
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Illness	Indications for Antibiotic Treatment	Pathogen	Antimicrobial Therapy	Antibiotic	Guidelines Reviewed
Otitis Media	<p>When to Treat with an Antibiotic: Acute Otitis Media</p> <ol style="list-style-type: none"> Recent, usually abrupt, onset of signs and symptoms of middle-ear inflammation and effusion and Presence of middle-ear effusion that is indicated by any of the following: <ol style="list-style-type: none"> Bulging of the tympanic membrane Limited or absent mobility of tympanic membrane Air fluid level behind the tympanic membrane Otorrhea and Signs or symptoms of middle-ear inflammation as indicated by either: <ol style="list-style-type: none"> Distinct erythema of the tympanic membrane or Distinct otalgia [discomfort clearly referable to the ear(s) that interferes with or precludes normal activity or sleep] 	<p><i>Streptococcus pneumoniae</i></p> <p>Nontypeable <i>Haemophilus influenzae</i></p> <p><i>Moraxella catarrhalis</i></p>	<p>Antibiotic Duration: 7-10 days (5 days for azithromycin)</p> <p>Age Group:</p> <ul style="list-style-type: none"> < 6 mo: antibiotics 6 mo - 2 yrs: antibiotics if diagnosis certain; antibiotics if diagnosis uncertain and severe illness > 2 yrs: antibiotics if diagnosis certain and severe illness <p>Analgesics and Antipyretics: Always assess pain. If pain is present, add treatment to reduce pain. Oral: ibuprofen/acetaminophen (may use acetaminophen with codeine for moderate-severe pain). Topical: benzocaine (> 5 years of age).</p>	<p>1st Line:</p> <ul style="list-style-type: none"> High dose amoxicillin (80-90 mg/kg/day) High dose amoxicillin/clavulanate (80-90 mg/kg/day of amoxicillin component) if severe illness or additional coverage desired <p>Alternatives: Non-anaphylactic penicillin allergy</p> <ul style="list-style-type: none"> Cefdinir, cefpodoxime, or cefuroxime <p>Severe penicillin allergy</p> <ul style="list-style-type: none"> Azithromycin or clarithromycin <p>Unable to tolerate oral antibiotic</p> <ul style="list-style-type: none"> Ceftriaxone 	<p>American Academy of Pediatrics (AAP)</p> <p>Centers for Disease Control and Prevention (CDC)</p> <p>American Academy of Family Physicians (AAFP)</p>
	<p>When NOT to Treat with an Antibiotic: Otitis Media with Effusion</p>				
Acute Bacterial Sinusitis	<p>When to Treat with an Antibiotic: Diagnosis of acute bacterial sinusitis may be made with symptoms of viral URI (nasal discharge or daytime cough not improved after 10 days, severe illness with fever, purulent nasal discharge, facial pain) not improving after 10 days or worse after 5-7 days.</p> <p>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.</p>	<p><i>Streptococcus pneumoniae</i></p> <p>Nontypeable <i>Haemophilus influenzae</i></p> <p><i>Moraxella catarrhalis</i></p>	<p>Antibiotic Duration: 7 to 10 days</p> <p>Failure to respond after 72 hours of antibiotics: Reevaluate patient and switch to alternate antibiotic. Fiberoptic rhinoscopy or sinus aspiration for culture may be necessary for workup of patients with severe or refractory sinusitis. Consider anti-inflammatory or decongestive therapy.</p>	<p>1st Line:</p> <ul style="list-style-type: none"> Amoxicillin (80-90 mg/kg/day) <p>Alternatives:</p> <ul style="list-style-type: none"> Amoxicillin-clavulanate (80-90 mg/kg/day of amoxicillin component) Cefpodoxime Cefuroxime Cefdinir Ceftriaxone <p>For β-Lactam Allergy:</p> <ul style="list-style-type: none"> Trimethoprim-sulfamethoxazole Azithromycin, clarithromycin Clindamycin 	<p>AAP, AAFP, CDC</p> <p>Sinus and Allergy Health Partnership (SAHP)</p>
	<p>When NOT to Treat with an Antibiotic: Nearly all cases of acute sinusitis resolve without antibiotics. Antibiotic use should be reserved for moderate symptoms not improving after 10 days, or that are worsening after 5-7 days, and severe symptoms.</p>	Mainly viral pathogens			
Pharyngitis	<p>When to Treat with an Antibiotic: Streptococcus pyogenes (Group A Strep) Symptoms and signs: sore throat, fever, headache, tonsillopharyngeal erythema, exudates, palatal petechiae, tender enlarged anterior cervical lymph nodes. Confirm diagnosis with throat culture or rapid antigen detection.</p>	<i>Streptococcus pyogenes</i>	<p>Group A Strep: Treatment reserved for patients with positive rapid antigen detection or throat culture.</p> <p>Antibiotic Duration: Generally 10 days</p>	<p>1st Line:</p> <ul style="list-style-type: none"> Penicillin V Benzathine penicillin G Amoxicillin <p>For β-Lactam Allergy:</p> <ul style="list-style-type: none"> Cephalosporin, clindamycin, azithromycin and clarithromycin 	<p>AAP, AAFP, CDC</p> <p>Infectious Diseases Society of America (IDSA)</p> <p>Institute for Clinical Systems Improvement (ICSI)</p>
	<p>When NOT to Treat with an Antibiotic: Respiratory Viral Causes Conjunctivitis, cough, rhinorrhea, diarrhea uncommon with Group A Strep.</p>	Routine respiratory viruses			
Nonspecific Cough Illness / Bronchitis / Pertussis	<p>When to Treat with an Antibiotic: Presents with prolonged, unimproving cough (14 days). Clinically differentiate from pneumonia. If pertussis is suspected, appropriate laboratory diagnosis encouraged (culture, PCR). Pertussis should be reported to public health authorities. <i>Chlamydophila pneumoniae</i> and <i>Mycoplasma pneumoniae</i> may occur in older children (unusual < 5 years of age).</p>	< 10% of cases caused by <i>Bordetella pertussis</i> , <i>Chlamydophila pneumoniae</i> , or <i>Mycoplasma pneumoniae</i> .	<p>Antibiotics are generally not indicated.</p> <p>Treatment reserved for <i>Bordetella pertussis</i>, <i>Chlamydophila pneumoniae</i>, <i>Mycoplasma pneumoniae</i>.</p> <p>Length of Therapy: 7-14 days (5 days for azithromycin)</p>	<ul style="list-style-type: none"> Azithromycin, clarithromycin Tetracyclines for children > 8 years of age 	AAP, AAFP, CDC
	<p>When NOT to Treat with an Antibiotic: Nonspecific cough illness.</p>	> 90% of cases caused by routine respiratory viruses.			
Bronchiolitis / Nonspecific URI	<p>When NOT to Treat with an Antibiotic: Sore throat, sneezing, mild cough, fever (generally < 102^o F / 38.9^o C, < 3 days), rhinorrhea, nasal congestion; self-limited (typically 5-14 days).</p>	> 200 viruses, including rhinoviruses, coronaviruses, adenoviruses, respiratory syncytial virus, enteroviruses (coxsackieviruses and echoviruses), influenza viruses and parainfluenza viruses.	<p>Antibiotics not indicated.</p> <p>Ensure hydration. May advise rest, antipyretics, analgesics, humidifier.</p>	<ul style="list-style-type: none"> None 	AAP, AAFP, CDC, ICSI