# Pediatric and Adult Pharyngitis Guideline

These clinical guidelines are designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients. They are not intended to replace a clinician’s judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.

## GUIDELINE HISTORY and APPROVAL

<table>
<thead>
<tr>
<th>ACTION</th>
<th>SEED GUIDELINE and/or MAIN INFORMATION &amp; GROUP SOURCE(S)</th>
<th>DATE</th>
<th>ORGANIZATION</th>
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<td>October 23, 2002</td>
<td>Geisinger Health Plan Quality Improvement Committee</td>
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<td>August 27, 2004</td>
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<td>September 17 - 22, 2004</td>
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<td>June 5, 2006</td>
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<td>Geisinger Health Plan Pharmacy Dept.</td>
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OVERVIEW

Sore throat is one of the most common chief complaints of adults treated in an outpatient setting. Although its differential diagnosis is large and includes many other causes that are important to recognize, the vast majority of immunocompetent adults presenting with sore throat have acute infectious pharyngitis.

Acute pharyngitis accounts for 1% to 2% of all visits to outpatient departments, physician offices, and emergency departments (1). A wide range of infectious agents, most commonly viruses, cause acute pharyngitis. Approximately 5% to 15% of cases in adults are caused by group A β-hemolytic streptococcus (GABHS) (2-7). In some patients, it can be important to identify an infectious cause other than GABHS (for example, gonococcal pharyngitis, Epstein-Barr virus, and acute HIV infection), but in the vast majority of cases, acute pharyngitis in an otherwise healthy adult is self-limited and rarely produces significant sequelae. Antibiotics are prescribed to a substantial majority (approximately 75%) of adult patients with acute pharyngitis (8).


This overview is from:
Richelle J. Cooper, MD, MSHS; Jerome R. Hoffman, MA, MD; John G. Bartlett, MD; Richard E. Besser, MD; Ralph Gonzales, MD, MSPH; John M. Hickner, MD, MSc; and Merle A. Sande, MD. Principles of Appropriate Antibiotic Use for Acute Pharyngitis in Adults. Ann Intern Med. 2001;134:509-517.
SEED GUIDELINE

The Pediatric and Adult Pharyngitis guideline was developed from two primary sources:


This can be found at: www.journals.uchicago.edu.idsa/guidelines/. (5/2003 version)

GOALS

1. Reduce testing of patients for GABS who present with concomitant VURI symptoms.

2. Reduce excessive antibiotic treatment through decreased empiric treatment of patients with pharyngitis. The goal is for every patient treated for strep throat to have a test documenting GABS

3. Increase the use of recommended first-line medications for patients with pharyngitis.

4. Increase patient knowledge about pharyngitis and pharyngitis care.
FAST FACTS

♦ Symptoms typically associated with group A beta Streptococcal (GABS) pharyngitis include:
  1. Sudden onset of sore throat
  2. Exudative tonsillitis
  3. Tender anterior cervical adenopathy
  4. History of fever
  5. Headache
  6. Abdominal pain

♦ Symptoms sometimes associated with streptococcal pharyngitis:
  1. Vomiting
  2. Malaise
  3. Anorexia
  4. Rash or Urticaria

♦ The symptoms of a viral upper respiratory tract infection include:
  1. Nasal congestion and discharge
  2. Cough
  3. Hoarseness

♦ Patients currently on anti-streptococcal antibiotics are unlikely to have streptococcal pharyngitis and likely do not have the disease.

♦ Antibiotics not reliably anti-streptococcal include sulfa medications (Septra®, Bactrim®, Gantrisin®), nitrofurantoin (Macrobid®) and tetracycline.
1. **Classic Group A Strep Symptoms**
   1. Sudden onset of sore throat
   2. Exudative tonsillitis
   3. Tender anterior cervical adenopathy
   4. History of fever
   5. No rhinorrhea, cough, hoarseness, or diarrhea
   6. Abdominal pain, nausea, vomiting
   7. Scarletina rash

2. **Serious Symptoms**
   1. Stridor
   2. Respiratory distress (not due to congestion)
   3. Air hunger
   4. Drooling
   5. Inability to swallow liquids
   6. Trismus
   7. Severity of symptoms judged worrisome at triage
   8. Severe unilateral sore throat and “hot potato” voice

3. **Complicating Factors**
   1. History of Rheumatic Fever
   2. HIV Positive
   3. Patient on Chemotherapy
   4. Immunosuppressed
   5. Diabetes mellitus
   6. Pregnant
   7. Patient started Antibiotics prior to diagnosis
   8. Sore throat for >5 days duration
   9. Persistent infection/ Treatment failure
   10. Recurrent strep pharyngitis

4. **Symptoms of VURI**
   1. Nasal Congestion & Discharge
   2. Cough
   3. Hoarseness

5. **Not reliably Anti-Streptococcal**
   1. Sulfamethoxazole (Septra, Bactrim, Gantrisin)
   2. Nitrofurantoin (Macrodantin)
   3. Tetracycline

6. **Treatment**
   Penicillin is the drug of choice.

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**Algorithm**

1. Patient greater than 3 years old complains of sore throat
   - 2. Serious Symptoms? (YES) → See Physician Based on Severity of Symptoms
   - 3. Complicating Factors? (NO) → 5. Consult Provider
   - 4. Complicating Factors? (YES) → 6. Symptoms of VURI? (NO) → 8. Patient on Antibiotic for Other Condition(s)? (NO) → 10. MPGABS or Rapid Strep Test
   - 12. Test Positive? (YES) → 13. Treatment (See Table) Please Check GHP Formulary
   - 14. Educate on Strep Pharyngitis
Annotations

Annotation 1

1. **Patient ≥ 3 Years Old Complains of Sore Throat**
   Symptoms typically associated with group A beta streptococcal (BABS) pharyngitis:
   a. Sudden onset of sore throat
   b. Exudative tonsillitis
   c. Tender anterior cervical adenopathy
   d. History of fever
   e. Headache
   f. Abdominal pain

   Symptoms sometimes associated with streptococcal pharyngitis:
   g. Vomiting
   h. Malaise
   i. Anorexia
   j. Rash or Urticaria

   Patients with recent strep exposure may be more likely to have streptococcal pharyngitis. This guideline should not be applied to children under <3 years of age who seldom have strep throat.

Annotation 2

2. **Serious Symptoms?**
   This guideline is not intended to supercede or preclude judgment.
   a. Stridor
   b. Respiratory distress (not due to congestion)
   c. Air Hunger
   d. Drooling
   e. Inability to swallow liquids
   f. Trismus (inability to open the mouth fully)
   g. Severity of symptoms judged worrisome at triage
   h. Severe unilateral sore throat (peritonsillar abcess) and “hot potato” voice

Annotation 3

3. **See Physician Based on the Severity of Symptoms**
   The patient should be seen or evaluated by a physician immediately if serious symptoms are present.

Annotation 4

4. **Complicating Factors?**
   This guideline applies to patients in generally good health and not at risk. Patients with the following conditions may be included in this guideline after consultation with a provider.
   a. History of Rheumatic Fever
   b. HIV positive
   c. Patient on chemotherapy
d. Immunosuppressed

e. Diabetes Mellitus

f. Pregnant

g. Patient started antibiotics prior to diagnosis

h. Sore throat for > 5 days duration

i. Persistent infection/treatment failure-recurrence of symptoms within 7 days of completing antibiotic therapy

j. Recurrent streptococcal pharyngitis-recurrence of culture positive GABS pharyngitis more than 7 days but within 4 weeks of completing antibiotic therapy.

**Annotation 5**

5. **Consult Provider**

Triage staff must consult provider to determine a patient’s appropriateness to follow this guideline.

**Annotation 6**

6. **Symptoms of VURI?**

The symptoms of a viral upper respiratory tract infection include:

- Nasal congestion and discharge
- Cough
- Hoarseness

**Annotation 7**

7. **Treat for VURI**

Streptococcal pharyngitis is unlikely with symptoms of congestion, cough or hoarseness. Patients should be triaged based on current treatment for VURI. More detailed information on VURI can be found at [www.icsi.org](http://www.icsi.org). Consider strep test if additional symptoms are suspicious for strep.

**Annotation 8**

8. **Patient on Antibiotic for other Condition(s)?**

Patients currently on anti-streptococcal antibiotics are unlikely to have streptococcal pharyngitis and likely do not have the disease. Antibiotics not reliably anti-streptococcal include sulfa medications (Septra®, Bactrim®, Gantrisin®), nitrofurantoin (Macrodantin®) and tetracycline.

**Annotation 9**

9. **Education**

When a patient currently on antibiotics (other than sulfa, tetracycline, nitrofurantoin or other non-strep antibiotics) is taking the medication as prescribed and develops a sore throat, chances are that the sore throat is caused by something other than GABS. Treatment failure for GABS is rare. Education will be needed on home remedies for sore throats.

Home remedies include:

- Take acetaminophen or ibuprofen. Do not use aspirin with children and teenagers because it may increase the risk of Reye Syndrome.
- Gargle with warm salt water (1/4 teaspoon of salt per 8 oz. glass of water).
- Adults or older children may suck on throat lozenges, hard candy or ice. Gargling with ice water can be soothing.
- Eat soft foods. Drink cool beverages or warm liquids.
- Suck on flavored frozen desserts (such as popsicles).

The patient should be instructed to call back if the symptoms worsen or if they persist beyond 5-7 days.

Patient education resources are listed in the Ideas for Implementation section of this guideline.

**Annotation 10**

10. **Molecular Probe for GABS or Rapid Strep Test (RST)**

   - Perform MPGABS and treat based on results.

   MPGABS and RST both require proper collection technique by trained professionals and must be performed according to the Federal Clinical Laboratory Improvement Act (CLIA) regulations. Poor collection procedures reduce accuracy of either test. RST must also be performed according to the manufacturer’s guidelines. An appropriately performed throat swab touches both tonsillar pillars and the posterior pharyngeal wall. The tongue should not be included (although its avoidance is sometimes technically impossible). Backup MPGABS is needed if RST is negative. The best yield is obtained by using separate swabs for RST and MPGABS.

   If MPGABS result is not available within 24 hours, RST may be performed. Generally treatment should be delayed until results are available. Results are usually available within 24 hours or slightly less. Some clinicians choose to initiate treatment prior to culture result availability, but a full course of treatment should not be prescribed until test results confirm the presence of GABS.

A less satisfactory strategy is empiric treatment. Using complex clinical scoring systems or in patients with the complete constellation of classic strep symptoms, empiric treatment may be justified, but has significant limitations. If full course treatment is initiated without intent to rely on the test results, laboratory testing is redundant and wasteful. Routinely culturing and prescribing antibiotic treatment for asymptomatic family members is not recommended. Routinely re-culturing patients after treatment with antibiotics is not recommended.

**Annotation 11**

11. **Test Positive?**

   Whether or not the test is positive, patients and their families want to know results as soon as possible so that they can appropriately plan for their needs.

   - If negative, they need educational information and a planned course of action if they do not recover in a reasonable time frame or if they become more ill.
   - If positive, patients want to be started on medication as rapidly as possible, primarily as a comfort or convenience issue and to reduce contagion. Rheumatic fever prophylaxis is likely satisfactory if started within a week of the positive culture; however, patients and parents may perceive any delay in initiation of treatment as poor service.

**Annotation 12**

12. **Educate on Non-Strep Pharyngitis and Home Remedies**

   If the MPGABS or the RST is negative, the patient needs to be educated on non-strep sore throats. This includes the duration of the symptoms, ineffectiveness of antibiotic treatment, and
home remedies that will ease the symptoms. The patient should be instructed to call back of the symptoms worsen or if they persist beyond 5-7 days.

Home remedies include:
- Take acetaminophen or ibuprofen. Do not use aspirin with children or teenagers because it may increase the risk of Reye Syndrome.
- Gargle with warm salt water (1/4 teaspoon of salt per 8 oz. glass of water).
- Adults or older children may suck on throat lozenges, hard candy or ice. Gargling with ice water can be soothing.
- Eat soft foods. Drink cool beverages or warm liquids.
- Suck on flavored frozen desserts (such as popsicles).

Provide educational material about non-strep causes of sore throats and home remedies for the patient to take home.

Annotation 13

Note: Pharmaceutical coverage is dependent upon individual pharmacy benefit design and certain drugs may require prior authorization. Providers are encouraged to review the GHP formulary at [http://www.thehealthplan.com](http://www.thehealthplan.com), or contact the GHP Pharmacy Department at 1-800-988-4861.

13. Treatment

Primary episodes
- *Penicillin is the drug of choice for treatment of GABS pharyngitis.*
- If the possibility of poor compliance is a concern, IM penicillin may be advisable.
- In penicillin allergic patients, a macrolide antibiotic is a reasonable alternative.
- In penicillin and erythromycin allergic patients, consideration should be given to spectrum and cost of antibiotic chosen.
- Although the broader spectrum penicillins, such as ampicillin and amoxicillin, are often used for treatment of GABS pharyngitis, they offer no microbiologic advantage over the narrower spectrum penicillin.

Persistent Infections/Treatment Failure
- Treatment of persistent infection should be directed toward eradication of GABS and Beta lactamase-producing protective organisms.

Note: All episodes consist of clinical findings and positive lab tests within 7 days after completion of a course of antibiotic therapy.
- Recommendations:
  - Erythromycin
  - Cephalexin
  - Clindamycin
  - Amoxicillin/clavulanate

Carrier state is briefly discussed in the Discussion and References for this annotation.
- Although the broader spectrum penicillins, such as ampicillin and amoxicillin, are often used for treatment of GABS pharyngitis, they offer no microbiologic advantage over the narrower spectrum penicillin.
## Antibiotic Treatment Table

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<tr>
<th>Drug/ Dosage</th>
<th>Advantage</th>
<th>Disadvantage</th>
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<td><strong>Penicillin V Potassium</strong> (PCN-VK)</td>
<td>• Inexpensive</td>
<td>• Poor taste of liquid preparations</td>
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<tr>
<td>▪ ≤23 kg (≤ 50 lbs) 25-50 mg/kg/day divided q6h</td>
<td>• Narrow spectrum of antimicrobial activity</td>
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<tr>
<td>▪ &gt; 23 kg (50 lbs) 500 mg bid or 250 mg qid x 10 days</td>
<td>• Low side effect profile</td>
<td></td>
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<tr>
<td>▪ bid dosing</td>
<td>• bid dosing</td>
<td></td>
</tr>
<tr>
<td><strong>Penicillin G Benzathine</strong></td>
<td>• Ensures compliance</td>
<td>• Pain at injection site</td>
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<td>▪ ≤27 kg (60 lbs) 600,000 U IM x 1 dose</td>
<td>• Equally effective as PCN in preventing all complications of GABS</td>
<td>• Possible increased incidence of allergies with procaine</td>
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<tr>
<td>▪ &gt; 27 kg (60 lbs) 900, 000 - 1,200,000 U IM x 1 dose</td>
<td>• Resistance is uncommon in US (&lt; 5%)</td>
<td>• Cannot discontinue drug exposure if serious allergy develops</td>
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<td>▪ Adults: base 500 mg QID x 10 days</td>
<td>• RII forms: no difference in cure rate</td>
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<tr>
<td><strong>Erythromycin</strong></td>
<td>• Equally effective as PCN in preventing all complications of GABS</td>
<td>• GI upset</td>
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<td>▪ Estolate 20-30 mg/kg/day ÷ bid x 10 days</td>
<td>• Resistance is uncommon in US (&lt; 5%)</td>
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<td>▪ Ethyl succinate or sterate (&lt; 41 kg or 90 lbs) 400 mg qid x 10 days</td>
<td>• RII forms: no difference in cure rate</td>
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<td>• GI upset</td>
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<td><strong>Cephalexin</strong></td>
<td>• Better cure rate vs. oral PCN</td>
<td>• Broader spectrum</td>
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<tr>
<td>▪ Pediatric 25-50 mg/kg/day ÷ bid x 10 days</td>
<td>• Bid dosing • better taste</td>
<td></td>
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<tr>
<td>▪ Adults 250-1000mg q6h) x 10 days</td>
<td>• Broader spectrum</td>
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<td><strong>Clindamycin</strong></td>
<td>• Unaffected by beta lactamase</td>
<td>• Expensive</td>
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<tr>
<td>▪ Pediatric 20 mg/kg/day ÷ tid x 10 days</td>
<td>• Narrow spectrum</td>
<td>• Pseudomembranous colitis may occur up to several weeks after cessation of therapy</td>
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<tr>
<td>▪ Adults 450 mg/day ÷ tid x 10 days</td>
<td>• Eradicates carrier status</td>
<td>• Poor taste and smell of liquid preparation</td>
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**Annotation 14**

14. **Educate on Strep Pharyngitis**

When the strep screen is positive it is important for the patient or caregiver to understand the course of the illness and the importance of taking the complete course of antibiotics. They should be aware that they are “contagious” until they have been on the antibiotic for 24 hours, and that they should see improvement in their acute symptoms within 48 hours.

It is vital for them to continue the antibiotics for the full course of treatment even when they feel completely better in order to prevent the occurrence of rheumatic fever. They should call
their health care provider if they are not feeling significantly better or if their symptoms persist or worsen after 48 hours, or if other members of the family show the same symptoms.

Home remedies include:

- Take acetaminophen or ibuprofen. Do not use aspirin with children or teenagers because it may increase the risk of Reye Syndrome.

- Gargle with warm salt water (1/4 teaspoon of salt per 8 oz. glass of water).

- Adults or older children may suck on throat lozenges, hard candy or ice. Gargling with ice water can be soothing.

- Eat soft foods. Drink cool beverages or warm liquids.

- Suck on flavored frozen desserts (such as popsicles).

Provide educational material and antibiotic chart for the patient to take home.
Measures

Possible measures for this guideline might include:

1. Percentage of patients with VURI symptoms tested with Rapid Strep Test (RST) or MPGABS (Molecular Probe for GABS).

2. Percentage of patients with pharyngitis treated with antibiotics who had a negative culture or no RST or MPGABS.

3. Percentage of patients with pharyngitis diagnosis that had MPGABS or RST performed.

4. Percentage of patients with pharyngitis treated with penicillin, erythromycin, or cephalaxin.

5. Percentage of patients with pharyngitis on antibiotics with documentation of education on 24-hour treatment prior to returning to work, school or day care.

6. Percentage of patients with negative MPGABS or RST with documentation of education concerning home remedies.

7. Percentage of patients with negative MPGABS or RST with documentation of education concerning time schedule to call back of symptoms do not improve within 5-7 days.

8. Percentage of patients with pharyngitis prescribed antibiotics with documentation of being educated on taking the complete course.

9. Percentage of patients age 2-18 yrs with a positive diagnosis, strep test, treated with an antibiotic.