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

ACTION	SEED GUIDELINE and/or MAIN INFORMATION & GROUP SOURCE(S)	DATE	ORGANIZATION
guideline reviewed and approved	1. Institute for Clinical Systems Improvement (ICSI). Acute Pharyngitis Guideline January 2002 version. www.icsi.org 2. Infectious Disease Society of America (IDSA). Practice Guidelines for the Diagnosis and Management of Group A Streptococcal Pharyngitis. Clinical Infectious Diseases 2002;35:113-25.	October 4, 2002	Geisinger Health Plan Guideline Committee
guideline reviewed and approved	Same as above.	October 23, 2002	Geisinger Health Plan Quality Improvement Committee
guideline reviewed, revised, and approved	1. Institute for Clinical Systems Improvement (ICSI). Acute Pharyngitis Guideline May 2003 version. www.icsi.org 2. Infectious Disease Society of America (IDSA). Practice Guidelines for the Diagnosis and Management of Group A Streptococcal Pharyngitis. Clinical Infectious Diseases 2002;35:113-25.	July 19 - August 27, 2004	Geisinger Health Plan/ Pharyngitis Team
guideline reviewed and approved	Same as above.	August 27, 2004	Geisinger Health Plan/ Guideline Committee
guideline reviewed and approved	Same as above.	September 17 - 22, 2004	Geisinger Health Plan Medical Directors
guideline reviewed and approved	Same as above.	September 24, 2004	Medical Management Administrative Committee (MMAC)
guideline reviewed and approved	Same as above.	October 27, 2004	Geisinger Health Plan/Quality Improvement Committee
next NCQA review deadline		October 27, 2006	Geisinger Health Plan/Quality Improvement Committee

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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 ß-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).

1. **Schappert SM.** Ambulatory care visits to physician's offices, hospital outpatient departments, and emergency departments: United States, 1996. Hyattsville, MD: National Center for Health Statistics; 1998.
2. **Gwaltney JM, Bisno AL.** Pharyngitis. In: Mandell GL, Bennett JE, Dolin R, eds. Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases. 5th ed. Philadelphia: Churchill Livingstone; 2000:656-61.
3. **Huovinen P, Lahtonen R, Ziegler T, Meurman O, Hakkarainen K, Miettinen A, et al.** Pharyngitis in adults: the presence and coexistence of viruses and bacterial organisms. Ann Intern Med. 1989;110:612-6.
4. **Komaroff AL, Pass TM, Aronson MD, Ervin CT, Cretin S, Winickoff RN, et al.** The prediction of streptococcal pharyngitis in adults. J Gen Intern Med. 1986;1:1-7.
5. **Poses RM, Cebul RD, Collins M, Fager SS.** The accuracy of experienced physicians' probability estimates for patients with sore throats. Implications for decision-making. JAMA. 1985;254:925-9.
6. **McIsaac WJ, White D, Tannenbaum D, Low DE.** A clinical score to reduce unnecessary antibiotic use in patients with sore throat. CMAJ. 1998;158:75-83.
7. **McIsaac WJ, Goel V, To T, Low DE.** The validity of a sore throat score in family practice. CMAJ. 2000;163:811-5.
8. **Gonzales R, Steiner JF, Sande MA.** Antibiotic prescribing for adults with colds, upper respiratory tract infections, and bronchitis by ambulatory care physicians. JAMA. 1997;278:901-4.

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:

1. The Institute for Clinical Systems Integration (ICSI) Pharyngitis Guideline found at www.icsi.org

2. Infectious Disease Society of America (IDSA). Practice Guidelines for the Diagnosis and Management of Group A Streptococcal Pharyngitis. Alan L. Bisno, Michael A. Gerber, Jack M. Gwaltney, Jr., Edward L. Kaplan, and Richard H. Schwartz. Clinical Infectious Diseases 2002;35:113-25.

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

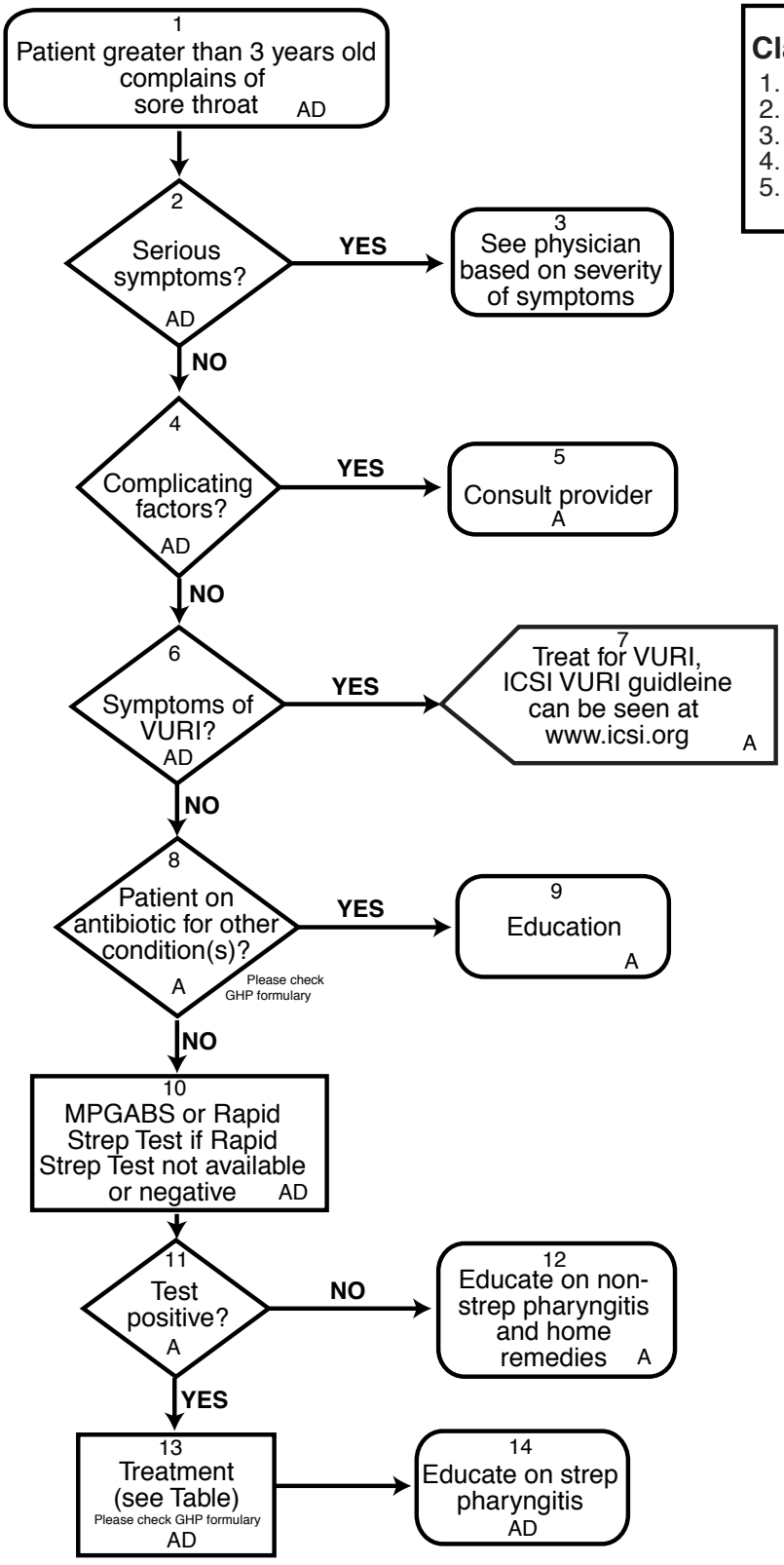
- Symptoms **typically** associated with group A beta streptococcal (GABS) pharyngitis include:
  1. Sudden onset of sore throat
  2. Exudative tonsillitis
  3. Tender anterior cervical adenopathy
  4. History of fever
  5. Headache
  6. Abdominal pain

- 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 (Macrodantin®) and tetracycline.



1
Classic Group A Strep Symptoms

1. Sudden onset of sore throat
2. Exudative tonsillitis
3. Tender anterior cervical andenopathy
4. History of fever
5. Not rhinorrhea, cough, hoarseness, or diarrhea

2
Serious Symptoms

1. Stridor
2. Respiratory distress (not due to congestion)
3. Air hunger
4. Drooling
5. Inability to swallow liquids
6. Trismus (inability to open mouth fully)
7. Severity of symptoms judged worrisome at triage

See Annotations and Discussion

4
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

See Annotations and Discussion

6
Symptoms of VURI

1. Nasal congestion and discharge
2. Cough
3. Hoarseness

8
Not Reliably Anti-Streptococcal

1. Sulfa medications (Septra, Bactrim, Gantrisin)
2. Nitrofurantoin (Macrodantin)
3. Tetracycline

13
Treatment

Penicillin is the drug of choice.
See Annotations and Discussion

ANNOTATIONS

ANNOTATION 1

1. Patient ≥ 3 Years Old Complains of Sore Throat

Symptoms typically associated with group A beta streptococcal (GABS) 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 < 3 years of age who seldom have strep throat.

ANNOTATION 2

2. Serious Symptoms?

This guideline is not intended to supercede or preclude clinical judgement.

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

ANNOTATION 3

3. See Physician Based on 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:

a. Nasal congestion and discharge
b. Cough
c. 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.

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 Reyes 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 of 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 per formed 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 Reyes 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

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, erythromycin is the drug of choice. If the adverse reaction was not anaphylaxis, cephalexin is a reasonable choice.
- 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 and should be avoided.

Persistent Infections/Treatment Failure

- Treatment of persistent infection should be directed toward eradication of GABS and Beta Iactamase-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

Drug/Dosage	Advantage	Disadvantage
Penicillin V Potassium (PCN-VK) ▪ ≤ 23 kg (≤ 50 lbs) 250 mg bid x 10 days ▪ > 23 kg (50 lbs) 500 mg bid x 10 days	▪ inexpensive ▪ narrow spectrum of antimicrobial activity ▪ low side effect profile ▪ bid dosing	▪ poor taste of liquid preparations
Penicillin G Benzathine ▪ ≤ 27 kg (60 lbs) 600,000 U IM x 1 dose ▪ > 27 kg (60 lbs) 1,200,000 U IM x 1 dose	▪ ensures compliance	▪ pain at injection site ▪ possible increased incidence of allergies with procaine ▪ cannot discontinue drug exposure if serious allergy develops
Erythromycin ▪ Estolate 20-30 mg/kg/day ÷ bid - qid x 10 days ▪ Ethyl succinate or sterate (< 41 kg or 90 lbs) 400 mg qid x 10 days	▪ equally effective as PCN in preventing all complications of GABS ▪ resistance is uncommon in US (< 5%) ▪ all forms: no difference in cure rate	▪ GI upset
Cephalexin ▪ Pediatric 25-50 mg/kg/day ÷ bid x 10 days ▪ Adults 500 mg bid x 10 days	▪ better cure rate vs oral PCN ▪ bid dosing ▪ better taste	▪ broader spectrum
Clindamycin ▪ Pediatric 20 mg/kg/day ÷ tid x 10 days ▪ Adults 450 mg/day ÷ tid x 10 days	▪ unaffected by beta lactamase ▪ narrow spectrum ▪ eradicates carrier status	▪ expensive ▪ pseudomembranous colitis may occur up to several weeks after cessation of therapy ▪ poor taste and smell of liquid preparation

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 Reyes 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 cephalexin.
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.