

# Judicious Use of Antibiotics

## Measures

### Track 3: Acute Streptococcal Pharyngitis

**Directions:**

**Pull 10 or more charts of patients:**

- 1) Seen by your practice more than 5 days ago, and;
- 2) Diagnosed with Acute Streptococcal Pharyngitis (strep throat), and;
- 3) Treated with an antibiotic
- 4) Exclude patients with a previous diagnosis of strep in the last 3 months

**Question 1:** Was this patient seen for an office sick visit that resulted in the diagnosis of acute streptococcal pharyngitis (strep throat)?

☐ Yes    ☐ No, the patient was not seen in the office

**Measure #1:** Patient diagnosed with acute streptococcal pharyngitis seen for office sick visit

**Definition:** Percentage of patients who were diagnosed with acute streptococcal pharyngitis that were seen for an office sick visit and resulted in a diagnosis of acute streptococcal pharyngitis

**Source:** Question #1

**Numerator:** Yes selected in #1

**Denominator:** Total Number of Charts

**Aim:** 100% of patients diagnosed with acute streptococcal pharyngitis, will have been seen for an office sick visit



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**Question 2:** Were one or more of the following signs or symptoms listed below present upon the history and/or examination?

☐ Yes ☐ No

- conjunctivitis
- coryza
- cough
- diarrhea
- hoarseness
- mouth ulcers
- maculopapular rash

**Note:** These are all viral symptoms and alone, they do not warrant testing or treatment.

**Note:** Acute streptococcal pharyngitis should not be diagnosed in patients under 36 months of age unless they currently have a household contact with confirmed group A streptococcal pharyngitis. It is acceptable to test the patient under 36 months of age if there is a household contact with confirmed group A streptococcal pharyngitis.

**Question 3:** Is there documentation in the medical record that one or more of the following symptoms, signs, or features were present upon the examination?

☐ Yes ☐ No

- tonsillopharyngeal erythema
- patchy tonsillopharyngeal exudates
- palatal petechiae
- sudden onset of sore throat and fever
- tender cervical adenopathy
- scarlatiniform rash
- swollen red uvula

**Question 4:** Was a rapid antigen detection test (RADT) ordered to confirm the diagnosis?

☐ Yes ☐ No ☐ N/A, throat culture performed

If Yes, to Question #4 (RADT ordered), *Continue*

If No, to Question #4 (RADT not ordered) *Skip to Question #5*

If N/A, throat culture performed, to Question #4 *Skip to Question #4c*

**Question 4a:** If yes, to Question #4 (RADT performed), what were the results?

☐ Positive RADT ☐ Negative RADT

If Positive to Question #4a (Positive RADT) , *Skip to Question #5*

If Negative to Question #4a (Negative RADT), *Continue*



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**Question 4b:** If Negative to Question #4a (RADT result was negative), was a throat culture performed?

☐ Yes      ☐ No

If Yes, to Question 4b (throat culture performed), *Continue*

If No, to Question 4b (No throat culture ordered), *Skip to Question #5*

**Question 4c:** If N/A to Question #4 or Yes, to Question #4b (throat culture performed), what were the results?

☐ Positive throat culture    ☐ Negative throat culture

**Measure #2:** Appropriate diagnosis of acute streptococcal pharyngitis (strep throat)

**Definition:** Percentage of patients who were appropriately diagnosed with acute streptococcal pharyngitis

**Source:** Questions # 3, 4a, & 4c

**Numerator:** [Positive RADT selected in Question #4a AND Yes selected in Question #3] OR [Positive throat culture selected in Question #4c AND Yes selected in Question #3]

**Denominator:** Total Number of Charts

**Aim:** 100% of patients prescribed antibiotics were appropriately diagnosed with acute streptococcal pharyngitis (strep throat) consistent with overt GAS symptoms present and/or a positive RADT or throat culture.

**Measure #3:** Negative RADT backed-up by throat culture

**Definition:** Percent of patients with a negative RADT will have a throat culture performed

**Source:** Questions # 4a & 4b

**Numerator:** Yes selected in Question #4b

**Denominator:** Negative RADT selected in Question #4a

**Aim:** 100% of patients with a Negative RADT will have a throat culture performed.



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**Measure #4:** Patients with ONLY viral symptoms who were inappropriately given a diagnosis of strep pharyngitis and/or prescribed an antibiotic

**Definition:** Percent of patients with ONLY viral symptoms that were prescribed an antibiotic

**Source:** Questions #2 & 3

**Numerator:** **Yes** selected in Question #2 **And** **No** selected in Question #3

**Denominator:** Total Number of Charts

**Aim:** 0% of patients presenting with ONLY viral symptoms will be diagnosed with strep pharyngitis and/or prescribed an antibiotic.

**Question 5:** Was this patient treated with penicillin or amoxicillin<sup>±</sup>(including injected penicillin)?

☐ Yes    ☐ No    ☐ N/A, Previous [severe allergic reaction](#) or [non-severe allergic reaction](#)<sup>†</sup>

If Yes, (patient treated with penicillin or amoxicillin), *Continue*

If No, (patient NOT treated with penicillin or amoxicillin), *Skip to Question # 7*

If N/A, Previous [severe allergic reaction](#) or [non-severe allergic reaction](#)<sup>†</sup>, *Skip to Question # 6*

**Measure #5:** Appropriate use of penicillin or amoxicillin

**Definition:** Percent of patients appropriately treated with penicillin or amoxicillin

**Source:** Question # 5

**Numerator:** **Yes** selected in #5

**Denominator:** Total Number of Charts **Minus** N/A, Previous severe or non-severe allergic reaction selected in Question #5

**Aim:** 100% of patients diagnosed with acute streptococcal pharyngitis will be appropriately treated with penicillin or amoxicillin unless previous severe or non-severe reaction.



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**Question 5a:** If yes, to Question #5 (patient treated with penicillin or amoxicillin), was the penicillin or amoxicillin prescribed for a duration of 10 days?

☐ Yes      ☐ No      ☐ N/A, patient treated with injection of penicillin

*All responses, Skip to Question #8*

**Measure #6: Name:** Appropriate duration of penicillin or amoxicillin treatment

**Definition:** Percent of patients prescribed penicillin or amoxicillin for duration of 10 days

**Source:** Questions #5 & #5a

**Numerator:** Yes selected in Question #5a

**Denominator:** Total Number of Charts **with Yes** selected in Question #5

**Aim:** 100% of patients who were prescribed penicillin or amoxicillin will be directed to treat for duration of 10 days.



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**Question 6:** If N/A, previous severe or non-severe allergic reaction to penicillin or amoxicillin to question #5, was the patient treated with any of the following antibiotics?

☐ Yes      ☐ No

If Yes, (patient treated with one of the following antibiotics), *Skip to Question # 8*

If No, (patient NOT treated any of the following antibiotics), *Continue*

<b>Preferred agents in chronic carriers of group A streptococci</b>	
<ul style="list-style-type: none"> <li>• amoxicillin-clavulanate</li> </ul>	
<b>Preferred agents for penicillin-allergic individuals: Should be considered first</b>	<b>Non-preferred agents for penicillin-allergic individuals: Should be considered secondarily</b>
<ul style="list-style-type: none"> <li>• <b>narrow-spectrum *cephalosporins:</b> <ul style="list-style-type: none"> <li>○ cephalosporin</li> <li>○ cefadroxil</li> <li>○ cephalexin</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>broad-spectrum *cephalosporins:</b> <ul style="list-style-type: none"> <li>○ cefaclor</li> <li>○ cefuroxime</li> <li>○ cefixime</li> <li>○ cefdinir</li> <li>○ cefpodoxime</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• clindamycin</li> </ul>	<p>*Some penicillin-allergic persons (up to 10%) are also allergic to cephalosporins, and these agents should not be used in patients with immediate (anaphylactic-type) hypersensitivity to penicillin</p>
<ul style="list-style-type: none"> <li>• <b>oral macrolides:</b> <ul style="list-style-type: none"> <li>○ erythromycin</li> <li>○ clarithromycin</li> <li>○ azalide</li> <li>○ azithromycin</li> </ul> </li> </ul>	



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### Measure #7: Appropriate use of 2<sup>nd</sup> line antibiotics

**Definition:** Percent of patients who had previous severe or non-severe allergic reaction to penicillin or amoxicillin that were appropriately prescribed 2<sup>nd</sup> line antibiotics

**Source:** Questions #5 & 6

**Numerator:** Yes selected in Question #6

**Denominator:** Total Number of Charts **with N/A**, Previous severe or non-severe allergic reaction selected in Question #5

**Aim:** 100% of patients who had a previous severe or non-severe allergic reaction to penicillin or amoxicillin will be appropriately treated with 2<sup>nd</sup> line antibiotics

**Question 7:** If **No** to Question #6 (patient not treated with listed antibiotic) was the patient treated with any of the following antibiotics?

☐ Yes ☐ No

Limited activity or needlessly broad spectrum and should **not** be used

- **Fluoroquinolones:**

- ciprofloxacin
- levofloxacin
- moxifloxacin

- **Sulfonamides:**

- trimethoprim-sulfamethoxazole

- **Tetracycline**

- doxycycline



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## Measure #8: Inappropriate use of broad-spectrum antibiotics

**Definition:** Percent of patients in appropriately treated with any of the following antibiotics: levofloxacin, trimethoprim-sulfamethoxazole, tetracycline, ciprofloxacin, moxifloxacin

**Source:** Questions #6 & #7

**Numerator:** Yes selected in Question #7

**Denominator:** Total Number of Charts **with No** selected in Question #5 OR #6

**Aim:** 0% of patients will be prescribed broad-spectrum antibiotics

**Question 8:** Did any provider in the practice discuss and document the following risks of antibiotic therapy with the patient/family?

☐ Yes ☐ No

Should always be discussed:	Should be discussed if patient/family has concerns:
<ul style="list-style-type: none"> <li>Side effects</li> <li>Allergic reaction</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Antibiotic resistance</a><sup>†</sup></li> </ul> <p><sup>†</sup><b>NOTE:</b> A clinical GAS isolate resistant to penicillin or cephalosporin never has been documented.<sup>1</sup></p>

## Measure 9: Risks of antibiotic therapy discussed with patient/family

**Definition:** Percent of patients prescribed antibiotics with documentation that risks of antibiotic therapy were discussed with the patient/family

**Source:** Question #8

**Numerator:** Yes selected in Question #8

**Denominator:** Total Number of Charts

**Aim:** 100% of patients prescribed antibiotics will have documentation in the medical record that risks of antibiotic therapy was discussed with the patient/family





# Judicious Use of Antibiotics

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## Appendix

### Non-severe and severe allergic reactions:

- **Non-severe** symptoms include hives or pruritic (itchy) rashes.
- **Severe** symptoms include anaphylaxis, angioedema, throat tightening, wheezing plus shock, airway compromise, or cardiovascular collapse. Cardiac collapse requires intervention (eg epinephrine, corticosteroids, vasopressors).

Note: Side effects such as vomiting, abdominal pain, and diarrhea are *non-allergic*.

**Antibiotic Resistance** - Overuse and/or inappropriate use of antibiotics can result in antibiotics losing the ability to treat bacterial infections

**†NOTE:** A clinical GAS isolate resistant to penicillin or cephalosporin never has been documented.<sup>1</sup>

<sup>1</sup>American Academy of Pediatrics. *Red Book: 2012 Report of the Committee on Infectious Diseases. Section 3: Summaries of Infectious Diseases, Group A Streptococcal Infections.* 668-680. Pickering LK, ed. 29th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2012.

**Reference:** [Clinical Practice Guide for Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012.Update by the Infectious Diseases Society of America.](#) Shulman S. T., Bisno, A.L., Clegg, H.W. et al. 2012.