

# Family Practice Small Group Activity (Facilitator Notes)

## Curriculum for Antimicrobial Stewardship

### Facilitator instructions:

- Read through the facilitator notes and make note of discussion points for each scenario

### Objectives:

At the completion of this small group activity, the learner should be able to:

1. Determine the appropriate clinical setting to order a rapid streptococcal test for pharyngitis
2. Discuss the rationale for use of antibiotics for group A streptococcal (GAS) pharyngitis
3. Define the clinical criteria for which antibiotic treatment of acute sinusitis is appropriate
4. Discuss the rational use of antibiotics for bacterial sinusitis
5. Discuss communication techniques that can be used to increase patient satisfaction

**Case Scenario #1: You are in the Family Medicine outpatient clinic seeing Mr. Green, a 21-year-old college student. He complains of sore throat and fever to 101.5°F over the past 2 days. He denies cough. On physical examination, he has an erythematous oropharynx with bilateral tonsillar exudates, but no cervical lymphadenopathy. What is the most appropriate next step in his management?**

*This patient has acute pharyngitis. However, the overlap between clinical features suggestive of group A streptococcus (GAS) versus viral etiology may be considerable. Features suggestive of GAS etiology include: sudden onset sore throat, fever, headache, tonsillopharyngeal inflammation, tonsillopharyngeal exudates, palatal petechiae, tender anterior cervical adenopathy, winter-early spring presentation, age 5-15 years, history of exposure to GAS pharyngitis. Features suggestive of viral etiology include: absence of fever, conjunctivitis, coryza, cough, hoarseness, ulcerative mouth lesions, viral type rash.*

*For adults and children with features that strongly suggest a viral etiology, testing is not indicated. In persons with findings suggestive of GAS infection (such as the patient described in case scenario #1), confirmation with a rapid antigen detection test (RADT) or culture is needed. In children and adolescents, a negative RADT has a low negative predictive value and should be backed up with a throat culture for GAS.*

**Case Scenario #2: You are in the Family Medicine outpatient clinic seeing Thomas, a 3-year-old boy. His mother states that he has had fevers up to 102°F and that he has been complaining that “it hurts to swallow” over the past day. Upon further questioning, she also notes that he has had a runny nose, cough and several loose stools. His physical exam is significant only for bilateral conjunctivitis and erythematous pharynx without exudates. His mother is concerned about strep throat since two other children in his daycare have had strep throat in the past month. What is the most likely etiology of this patient’s illness? How would you explain the next steps in this patient’s management to his mother?**

*This patient's illness is most likely due to a viral etiology. While clinical findings alone do not adequately distinguish GAS vs. Non-streptococcal pharyngitis in children, prominent rhinorrhea, cough, hoarseness, conjunctivitis, or diarrhea suggest a viral etiology. Further, most cases with clinical signs of GAS, like exudate and adenopathy, are viral (only 15% are due to GAS pharyngitis in children). Antigen tests (rapid Strep kits) or culture should be positive before beginning antibiotic treatment. If there is a high clinical suspicion for GAS pharyngitis, negative antigen tests can be confirmed with culture. Initiating antibiotic treatment pending culture results in these patients is discouraged. Patients should be offered supportive care with antipyretics and analgesics.*

**Case Scenario #3:** You are in the Family Medicine outpatient clinic seeing Michelle, an 11-year-old girl, who complains of fever, runny nose and cough over the past 3 days. Her mother is concerned because her nasal drainage has changed from white to yellowish-green. Physical exam reveals a temperature of 100.9°F, erythematous and enlarged nasal turbinates, mildly erythematous and enlarged tonsils and a clear lung exam. What clinical syndrome does this child have? What is the most likely etiology? What treatment would you prescribe? What if she came back to see you in one week and her symptoms were unimproved?

*This child has acute sinusitis. Most cases are due to uncomplicated viral infections. While most viral upper respiratory infections (URIs) involve the nasal mucosa and paranasal sinuses, only a small minority are complicated by bacterial sinusitis. It is important to not overdiagnose or overtreat bacterial sinusitis as treating a viral URI will not shorten the course of illness or prevent bacterial infection.*

*To avoid unnecessary antibiotic treatment, it is important to distinguish clinical presentations which are most suggestive of acute bacterial rhinosinusitis (ABRS) and therefore warrant empiric antibiotic therapy. Symptoms such as rhinorrhea, fever and cough are non-specific and are often present in patients with viral rhinosinusitis. Changes in mucous to yellow, thick, or green can occur in the natural course of viral URIs. These changes alone are NOT an indication for antibiotics. The following clinical presentations are suggestive of acute bacterial rhinosinusitis and empiric antibiotic therapy should be initiated in patients with any of the following 3 clinical presentations:*

- 1. Onset with persistent symptoms or signs compatible with acute rhinosinusitis, lasting for >10 days without any evidence of clinical improvement.*
- 2. Onset with severe symptoms or signs of high fever (>39°C [102°F]) and purulent nasal discharge or facial pain lasting for at least 3-4 consecutive days at the beginning of illness.*
- 3. Onset with worsening symptoms or signs characterized by the new onset of fever, headache, or increase in nasal discharge following a typical viral upper respiratory infection (URI) that lasted 5-6 days and were initially improving ("doublesickening").*

*At this time, it would be most appropriate to offer symptomatic therapy with analgesics and antipyretics. If the patient were to return in 1 week, she would meet criteria for antibiotic treatment due to acute bacterial sinusitis. Likely organisms should be targeted with first-line*

drugs. Amoxicillin/Clavulanate rather than amoxicillin alone is recommended for the treatment of ABRS in children and adults. A respiratory fluoroquinolone (levofloxacin or moxifloxacin) can be used in penicillin-allergic patients. Improvement should be seen in 2-3 days. The shortest effective course should be used. The recommended treatment duration is 10-14 days in children (5-7 days in adults).

**Case Scenario #4:** You are in the Family Medicine outpatient clinic seeing Ms. Blue, a 32-year-old female with a history of allergic rhinitis, morbid obesity and hypertension. She complains of low-grade fevers, runny nose, postnasal drainage, frontal headache, and cough. Physical examination is significant for a temperature of 99.5°F, tenderness over her right maxillary sinus, erythema and swelling of bilateral nasal turbinates. The patient asks if you think she needs antibiotics. What additional information would you like to know about this patient? How would it change your management? In patients treated with antibiotics, when should alternative management strategies be considered?

*The indications for initiating antibiotic treatment of acute bacterial rhinosinusitis in adults are the same as those for children. Therefore, it would be important to know how long her symptoms have persisted, the severity of her symptoms and if she has experienced initial improvement then worsening of symptoms (doublesickening) as these criteria would help you to determine the need for empiric antibiotic therapy.*

*For adults in whom you suspect ABRS, intranasal saline irrigation with either physiologic or hypertonic saline can be recommended. Antipyretics and analgesics can be offered as well. Intranasal corticosteroids can be prescribed in patients with concomitant allergic rhinitis. Neither topical nor oral decongestants and/or antihistamines are recommended as adjunctive treatment in patients with ABRS.*

*Patients who clinically worsen or fail to improve after 3-5 days of empiric antibiotic therapy with a first-line agent should be evaluated for the possibility of resistant pathogens, a noninfectious etiology, structural abnormality, or other causes for treatment failure. Cultures should be obtained by direct sinus aspiration (rather than by nasopharyngeal swab). Endoscopically guided cultures of the middle meatus may be considered as an alternative in adults, but their reliability has not been established in children. In patients with ABRS suspected to have suppurative complications, axial and coronal views of contrast-enhanced CT rather than MRI is recommended to localize the infection and to guide further treatment. Patients who are seriously ill and immunocompromised, continue to deteriorate clinically despite extended courses of antibiotic therapy, or have recurrent bouts of acute rhinosinusitis with clearing between episodes should be referred to a specialist (ENT, ID, or Allergy/Immunology) for consultation.*

**Case Scenario #5:** You are in the Family Medicine outpatient clinic seeing Ms. Brown, a 57-year-old female with a history of hypertension and stage III chronic kidney disease. She complains of headache, facial pain, postnasal drip and cough over the past 3 days. Physical examination is remarkable for tenderness over her maxillary and frontal sinuses bilaterally as well as erythema and swelling of her bilateral nasal turbinates. The remainder of the physical exam is benign. You determine that Ms. Brown has acute sinusitis, but you suspect a viral etiology. Ms. Brown tells you that antibiotics are the only thing that will clear her sinus infection. What do you say to Ms. Brown? What are some communication techniques you could use to increase patient satisfaction? What are barriers to using those techniques in your day-to-day practice? How would you manage those barriers?

*The facilitator may choose to have students role play this scenario so that students can practice explaining the appropriate treatment to patients. This allows students to find phrases they are comfortable using. There are several communication techniques that can be used to increase patient satisfaction. Some examples are: Tell patients that antibiotic use increases the risk of an antibiotic-resistant infection, identify and validate patient concerns, recommend specific symptomatic therapy, spend time answering questions and offer a contingency plan if symptoms worsen, provide patient education materials on antibiotic resistance.*

*REMEMBER: Effective communication is more important than an antibiotic for patient satisfaction.*

## Resources:

- Bisno AL, Gerber MA, Gwaltney JM, Kaplan EL, Schwartz RH. Practice Guidelines for the Diagnosis and Management of Group A Streptococcal Pharyngitis. Published in: *Clinical Infectious Diseases* 2002; 35 (2): 113-125. Also available at [www.idsociety.org](http://www.idsociety.org)
- Snow V, Mottur-Pilson C, Hickner JM. Principles of Appropriate Antibiotic Use for Acute Sinusitis in Adults. *Annals of Internal Medicine* 2001; 134 (6): 495-497.
- Hickner JM, Bartlett JG, Besser RE, Gonzales R, Hoffman JR, Sande MA. Principles of Appropriate Antibiotic Use for Acute Rhinosinusitis in Adults: Background. *Annals of Internal Medicine* 2001;134 (6):498-505.
- Dowell SF, Marcy SM, Phillips WR, Gerber MA, Schwartz, B. Principles of Judicious Use of Antimicrobial Agents for Pediatric Upper Respiratory Tract Infections. *Pediatrics* 1998;101:163-165.
- O'Brien KL, Dowell SF, Schwartz B, Marcy SM, Phillips WR, Gerber, MA. Acute Sinusitis--Principles of Judicious Use of Antimicrobial Agents. *Pediatrics* 1998;101:174-177.
- Schwartz B, Marcy SM, Phillips WR, Gerber MA, Dowell SF. Pharyngitis--Principles of Judicious Use of Antimicrobial Agents. *Pediatrics* 1998;101:171-174.
- <http://www.cdc.gov/getsmart/campaign-materials/brochures.html>
- Chow AW, Benninger MS, Brook I, et al. IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults. *Clin Infect Dis*. 2012 Apr;54(8):e72-e112. Epub 2012 Mar 20.