## Adult Sinusitis 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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<tr>
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OVERVIEW
The economic burden of sinusitis in the United States is dramatic. Medical and surgical encounters in which sinusitis was the primary diagnosis were estimated at 5.8 billion for adults in 2007. Nearly 90% of all expenditures were associated with ambulatory or emergency department services. More than 1 in 5 antibiotics prescribed in adults are for sinusitis. The indirect cost of sinusitis includes 73 million days of restricted activity per year.

Acute bacterial sinusitis usually occurs following an upper respiratory infection that results in obstruction of the ostomeatal complex, impaired mucociliary clearance and overproduction of secretions. The diagnosis is based on the patient’s history of a biphasic illness (“double sickening”), purulent rhinorrhea, maxillary toothache, pain on leaning forward, pain with a unilateral prominence and a poor response to decongestant therapy. Radiographs and computed tomographic scans of the sinuses generally are not useful in making the initial diagnosis. Since sinusitis is self-limited in 40 to 50 percent of patients, the expensive, newer-generation antibiotics should not be used as first-line therapy. First-line antibiotics such as amoxicillin or trimethoprim-sulfamethoxazole are as effective in the treatment of sinusitis as the more expensive antibiotics. Little evidence supports the use of adjunctive treatments such as nasal corticosteroids and systemic decongestants. Patients with recurrent or chronic sinusitis require referral to an otolaryngology’s for consideration of functional Endoscopic sinus surgery.

Journal of Allergy & Clinical Immunology. 103(3 Pt 1):408-14, 1999 Mar.


SEED GUIDELINE
Institute for Clinical Systems Improvement (ICSI) Diagnosis and Treatment of Respiratory Illness in Children and Adults. (Jan.2013 version).

**GOALS**

1. To differentiate between viral upper respiratory infection and acute sinusitis in adults.

2. To appropriately identify patients for phone management.

3. To increase provider understanding of appropriate antibiotic usage for acute sinusitis by ensuring that first line medications are prescribed for patients when indicated.

4. To educate providers about appropriate use of sinus x-rays.

5. To educate providers about appropriate ENT referral.

6. Patient/Provider/Employer Education:
   a. To provide educational tools and triage guidelines for health care providers, patients and employers.
   b. To increase patient knowledge of effective home treatment for viral upper respiratory tract infection.
   c. To change patient expectations regarding treatment with antibiotics for viral upper respiratory infection.

**FAST FACTS**

Acute sinusitis is indicated when:
- URI symptoms have been present for greater than 7 days, AND
- 2 or more of the following symptoms are present at a point 7 days or more after the onset of the illness during which time an adequate trial of decongestant/analgesic was used:
  - Colored nasal drainage
  - Poor response to decongestant
  - Facial or sinus pain, particularly if aggravated by postural change or valsalva maneuver
  - Headache
- Initial treatment for acute sinusitis is either Amoxicillin 500 mg tid for 10-14 days or Trimethoprim/sulfa DS for 10-14 days
- 2nd Line treatment is another 10-14 days of the same antibiotic, or:
  - Amoxicillin-potassium clavulanate (Augmentin)
  - Fluoroquinolone
• Transillumination and plain sinus radiographs add little to the diagnostic process in the primary care setting.

BIBLIOGRAPHY

**Adult Sinusitis**

- Colored Nasal Discharge
- Facial Pain
- Headache
- Poor Response to Decongestants
- Tobacco Use
- Temp. > 102 with past Hx sinusitis
- Upper Tooth Pain
- Orbital Pain
- Visual Disturbance
- Facial Edema or Erythema

**URI Symptoms**

- > 7 Days;
- Suspect Sinusitis

- Two or
- More of
- These Sx

- ENT Hx & PE
- Sinus X-rays usually not necessary unless frontal or complicated sinusitis suspected

**Antibiotics:**

- Amoxicillin 500 mg TID 10-14 days
- TMP/SMX DS BID 10-14 days
- Doxycycline 100 mg BID 10-14 days (if allergic to PCN and Sulfa)

**Decongestants:**

- Pseudoephedrine hydrochloride plus guaifenesin
- Decongestant nasal spray for no longer than 3 days

**Other:**

- Saline nasal drops/spray
- Nasal steroid spray unproven
- Analgesia
- Patient Education

**Partial Response:**

- Another 10-14 days same antibiotic then reassess patient

**No Response Reassess Patient:**

- Consider 2nd antibiotic for 10-14 days then reassess patient
- If no response again, reassess patient, consider sinus X-rays and ENT referral
1. Phone Triage Indicates Acute Sinusitis

**Phone Triage Criteria**

Acute sinusitis is indicated if:

- Upper respiratory symptoms have been present for at least 7 days, and two or more of the following symptoms are present at a point 7 days or more after the onset of the illness:
  - Colored nasal drainage
  - Poor response to decongestant
  - Facial pain or sinus pain, particularly if aggravated by postural change or Valsalva maneuver
  - Headache

- Tooth pain with any of the above findings is a more specific indication of sinusitis. Patients with tooth pain could be considered for treatment before 7 days.

- Fever > 102 degrees and a documented past history of sinusitis in addition to the above symptoms is supportive of a sinusitis diagnosis.

- Individuals with severe symptoms should be considered for treatment before 7 days. Patients with known anatomical blockage (e.g., chronic nasal polyps, severely deviated septum, recurrent sinusitis) may need immediate treatment.

- An individual reporting symptoms meeting the phone triage criteria for acute sinusitis has a reasonably high likelihood of having the disease. Such a patient’s symptoms and chart should be presented to the physician or physician extender for further action.

- Triage for alternative diagnosis

- Patients not meeting the triage criteria for sinusitis would be triaged for an alternative diagnosis.

2. Needs Visit?

- Patients who are in generally good health and only mildly ill may be appropriate candidates for phone management of presumed acute sinusitis. Both the patient and the provider should be comfortable with phone management.

- The following factors are also supportive of phone management:
  - Earlier visit with viral upper respiratory infection that has progressed to probable acute sinusitis
- A pattern over time of telephone requests for antibiotics by the same patient should be replaced by a provider visit.
- Patients on antibiotics for 2 or more days whose sinus symptoms are worsening should be scheduled for a provider visit.

- Patients with any of the following complicating factors should be seen urgently:
  > Orbital pain
  > Visual disturbances
  > Periorbital swelling or erythema
  > Facial swelling or erythema
- Patients who meet criteria for phone management should receive the same treatment and instructions outlined in Annotation #5 for visiting patients.

3. Visit
   ♦ Review history
   ♦ Confirm history as in phone triage
   ♦ Regional exam of the head and neck
     ♦ The following physical findings may be found:
       > Presence of purulent nasal drainage
       > Sinus tenderness
       > Decreased transillumination (optional)
   ♦ Review complicating factors
     - Local
       > External facial swelling/erythema over involved sinus
         > Mucoceles
         > Osteomyelitis
     - Orbital
       > Visual changes
       > Extraocular motion abnormal
       > Proptosis
       > Periorbital inflammation/soft tissue edema
         - subperiosteal abscess
         - orbital cellulitis
         - orbital abscess
         - Intracranial, CNS complications
       > Cavernous sinus thrombosis
       > Meningitis
       > Subdural empyema
       > Brain abscess
     - Plain sinus x-rays are usually not necessary in making the diagnosis of acute sinusitis.
     - Maxillary antrum aspiration for culture is indicated only when precise microbial identification is required.

4. Acute Sinusitis?
   ♦ The diagnosis of acute sinusitis is based primarily on the patient's history and is supported by the physical exam. Assess Turbinates.
Follow-up for alternative diagnosis
Follow-up for an alternative diagnosis should take place if the patient’s symptoms, history, and physical exam are not indicative of acute sinusitis.

5. Treatment
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, or contact the GHP Pharmacy Department at 1-800-988-4861.

- Antibiotics
  - Amoxicillin 500 mg TID 10-14 days or 1000 mg BID x 10 days
  - Trimethoprim-sulfamethoxazole (TMP/SMX) One double-strength tab BID 10-14 days
  - For patients allergic to both amoxicillin and TMP/SMX—Doxycycline 100 mg BID 10 – 14 days can be prescribed. A cephalosporin could be considered but there is approximately a 10% cross-reaction between cephalosporins and amoxicillin. (Refer to Annotation #7)
  - It is important to instruct the patient to complete the course of antibiotics.
- Decongestants (topically or orally)
  - Pseudoephedrine HCL plus guaifenesin (IE. Duratuss) (e.g., Sudafed) 60 mg q 4-6 hours, not to exceed 4 doses per 24 hours.
  - Oxymetazoline (e.g. Afrin) not to be used more than 3 days.
- Nonpharmacologic measures for symptomatic relief -Saline nasal drops/spray
  - Commercial (e.g. Ocean, Salinex, Nasal)
  - Homemade (1/4 teaspoon salt and 1/4 teaspoon of baking soda dissolved in 1 cup of water; use bulb syringe or dropper purchased from drug store)
- Nasal steroid spray
  - Inhaled nasal steroid spray is a rational but unproved adjunctive therapy for acute sinusitis.
- Provide patient education
  - Although medication will relieve symptoms, the patient should be instructed to implement the following comfort and prevention measures:
    - Comfort measures
      - Maintain adequate hydration
      - Analgesics (Acetaminophen, ibuprofen, ASA as needed)
      - Sleep with head of bed elevated
      - Steamy shower
      - Apply warm facial packs
      - Saline irrigation
      - Maintain adequate hydration
      - Adequate rest
      - Avoid cigarette smoke or extremely cool or dry air
      - Cool mist vaporizer or humidifier
      - Avoid dehydrating agents, caffeine and alcohol.
    - Prevention measures
      - Appropriate treatment of allergies and viral upper respiratory infections can prevent the development of sinusitis.
Environmental factors that affect the sinuses include cigarette smoke, pollution, swimming in contaminated water, use of coal or wood stove or kerosene heaters and barotrauma.

♦ Call back instructions
  – The patient should be instructed to call back if symptoms worsen, or if symptoms have not resolved within 48 to 72 hours.

6. Complete response?
✴ Complete response
  – Patient is symptomatically normal
✴ Partial response
  – Patient is symptomatically improved but not back to normal at the end of the first course of antibiotics.
✴ Failure or no response
  – Patient has little or no symptomatic improvement after finishing a 10-14 day course of first line antibiotic therapy (amoxicillin or TMP/SMX).

7. Further treatment
✴ Partial response or no symptomatic improvement:
  a. Amoxicillin/Clavulanate (Augmentin) 875 mg BID x 14 days
  b. Cephalosporin 3rd generation ie. Cefuroxime, **Cefpodoxime, Cefprozil, or Cefdinir.

For patients allergic to both amoxicillin and TMP/SMX or macrolides can be prescribed.
  a. Clarithromycin (Biaxin®) 500mg BID x 14 days
  b. Azithromycin (Zithromax®) 500 mg every day x 3 days

OR quinolones
  a. Levofloxacin (Levaquin®) 500 mg every day x 14 days
  b. Moxifloxacin (Avelox®) 400 mg every day x 14 days

Failure or No response in 3-4 weeks:
  Reassess patient for ENT referral.

MEASURES

✴ Denominator–Geisinger Health Plan members 18 years and older. No visits in the last three months for acute sinusitis.
✴ Primary diagnoses of sinusitis
  – Use Primary ICD9 codes 461 through 461.9 to identify sinusitis as the primary diagnosis.
  – No claims for the last three months with one of these diagnoses.
Exclude members having chronic sinusitis: exclude codes 473.0 through 473.9.

**Numerator**
- Percent of patients receiving first line antibiotics. (Amoxicillin, Trimethoprim-Sulfa)
- Percent of patients following initial visit for acute sinusitis had another visit for acute sinusitis within one month.
- Of the group of people having a second visit the percent of members receiving a second line antibiotic.
- Percent of patients receiving a sinus x-ray (CPT codes 70210 through 70220), CT Scan Sinus (70486 through 70488), MRI (70540, Y7054, Y7055). Break down of pre- and post-60 days.
- Percent of patient receiving referral to ENT within 60 days of initial episode.