

PRACTICE GUIDANCE FOR JUDICIOUS USE OF ANTIBIOTICS

Striving for better outcomes for individual patients, improved population health, and lower healthcare costs

ACUTE UNCOMPLICATED SINUSITIS (Children < 18 years)

Symptoms and Diagnosis

URI/VIRAL SINUSITIS

(>95% of cases)

Upper respiratory infection with mild to moderate nasal discharge lasting 1-10 days

OR

Severe symptoms lasting 1-2 days

- Fever ($T \geq 39^{\circ}\text{C}/102^{\circ}\text{F}$) **AND** one or both of the following:
 - Purulent nasal discharge
 - Facial pain

NOTE: Thick, colored, or purulent nasal secretions do NOT necessarily indicate bacterial infection.

BACTERIAL SINUSITIS

(<5% of cases)

Persistent illness without improvement for >10 days

OR

Severe symptoms lasting ≥ 3 days at the beginning of the illness

- Fever ($T \geq 39^{\circ}\text{C}/102^{\circ}\text{F}$) **AND** one or both of the following:
 - Purulent nasal discharge
 - Facial pain

OR

Worsening symptoms after initially improving from a typical upper respiratory infection that lasted 5–6 days

- New fever
- Headache
- Increased purulent nasal discharge

Treatment

SYMPTOMATIC TREATMENT

(effective for viral and bacterial infections)

- Extra rest, hot drinks, oral hydration
- Analgesics/antipyretics, as needed
- Nasal saline irrigation (such as "Neti Pot") using boiled, sterile, or filtered water
- Nasal corticosteroid spray for patients with allergic rhinitis—may take up to 14 days for effective symptom relief
- OTC decongestants may be helpful for some patients but should not be used in those < 4 years
- Avoid cigarette smoke; offer smoking cessation resources, if indicated

Offer positive recommendations using this Symptomatic Prescription Pad: <https://go.usa.gov/xRPXy>

NOTE: See back for help when discussing non-antibiotic treatment plan with patients.

WATCHFUL WAITING

Acceptable to observe mild bacterial sinusitis for 3 additional days before prescribing antibiotic if follow up is assured and focus instead on symptomatic treatment (see left and back).

FIRST-LINE ANTIBIOTIC THERAPY

- Amoxicillin (high-dose)

NOTE: If use of amoxicillin in prior month or failure to improve on amoxicillin, prescribe amoxicillin-clavulanate.

SECOND-LINE ANTIBIOTIC THERAPY

- Amoxicillin-clavulanate
- Cefdinir, cefuroxime, or cefpodoxime
- Doxycycline (ONLY for age > 8 years)

NOTE: Due to severe side effects, FDA recommends against the routine usage of fluoroquinolones in uncomplicated infections. Alternatives are preferred.

See other side for dosing information.

WATCHFUL WAITING

- May NOT be reasonable for patients with immune deficiency, cystic fibrosis, or other major co-morbidities
- Provide assured follow-up and antibiotics if not improved after 48-72 hours of watchful waiting, or sooner if worsening

BEST PRACTICES FOR COMMUNICATING WITH PATIENTS

- Identify and validate patient's and parent's concerns
- Provide clear recommendations including specific symptom treatment and contingency plan for if symptoms worsen
- Confirm agreement and answer questions
- Provide education about antibiotic use and associated risks, including bacterial resistance and *C. difficile*

POTENTIAL HARMS ASSOCIATED WITH ANTIBIOTIC USE

- May cause significant side effects, such as antibiotic-associated diarrhea and allergic reactions
- Can increase the risk of carrying a drug-resistant organism which may decrease the effectiveness of antibiotics in the future and make an infection more severe
- Can result in a diarrheal disease caused by *C. difficile* which can be severe and even fatal

Visit CDC's Common Illnesses index at <https://go.usa.gov/xRPXH> for patient education materials.

Antibiotic Therapy for Bacterial Sinusitis

DRUG	DOSE	DURATION
Amoxicillin	Child high-dose: 80-90 mg/kg/day PO divided in 2 doses, max 2 gm/dose NOTE: High-dose amoxicillin is recommended for pediatric sinusitis because >10% <i>Strep pneumoniae</i> isolates are non-susceptible in Washington.	7-10 days for most
Amoxicillin-clavulanate	Child high-dose: 90mg/kg/day (amoxicillin component) PO divided in 2 doses, max 2 gm/dose NOTE: High-dose amoxicillin-clavulanate is recommended for pediatric sinusitis because >10% <i>Strep pneumoniae</i> isolates are non-susceptible in Washington.	10-14 days for severe disease, immunocompromised, or after treatment failure
Cefdinir	Child: 14 mg/kg daily PO divided in 1-2 doses	
Cefuroxime	Child: 30 mg/kg/day PO divided in 2 doses	
Cefpodoxime	Child: 10 mg/kg/day PO divided in 2 doses	
Doxycycline	Child: 2.2 mg/kg/day PO divided in 2 doses	

IMAGING AND REFERRAL

If worsening or no improvement after two courses of antibiotics or if concern for orbital/CNS complications of bacterial sinusitis, order contrast-enhanced CT scan (preferred) or MRI of the paranasal sinuses and refer to the appropriate specialist.

ANTIBIOTIC ALLERGY

Most patients who report antibiotic allergies, particularly penicillin class allergies, do not have true drug allergies. It is important to carefully evaluate reported drug allergies starting with a history before determining whether an alternative agent is indicated.

NOTE: This guidance is not meant to replace the clinical judgment of the individual provider or establish a standard of care.

REFERENCES

1. Chow AW, et al., ISDA Clinical Practice Guidelines for Acute Bacterial Rhinosinusitis in Children and Adults. Clin Infect Dis 2012; 54(8):e72-e112.
2. Wald E, et al., Clinical Practice Guideline for the Diagnosis and Management of Acute Bacterial Sinusitis in Children Aged 1 to 18 Years. Pediatrics 2013;132(1):e262 -e280.
3. Pichichero ME. A review of evidence supporting the American Academy of Pediatrics recommendation for prescribing cephalosporin antibiotics for penicillin allergic patients. Pediatrics 2005;115(4): 1048-1057.