This Clinical Practice Guideline (CPG) and accompanying patient education were developed by a multidisciplinary team, under the leadership of Nebraska Health Network’s Primary Care Clinical Integration Workgroup.

Based on national guidelines and emerging evidence and shaped by expert local opinion, this CPG provides practical strategies for early recognition, diagnosis and effective treatment of acute rhinosinusitis.

Overview

The National Action Plan for Combating Antibiotic-Resistant Bacteria set a goal of reducing inappropriate outpatient antibiotic use by 50% by 2020. Antibiotic resistance is a growing problem and the main cause of this problem is the inappropriate use of antibiotics in the outpatient setting.1

Antibiotics are also associated with the risk for adverse drug reactions. These adverse reactions account for 20% of visits to the emergency department for adverse drug events.2

The CDC estimates that at least 1 in 3 prescriptions in the outpatient setting are not essential to patient health. Approximately 44% of outpatient antibiotic prescriptions are used to treat acute respiratory conditions, likely viral. Reducing inappropriate use is essential to reduce both antibiotic resistance and adverse events.3

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TREATMENT

Antibiotic Therapy for
**BACTERIAL** Rhinosinusitis

- Treatment should start as soon as possible after diagnosis of Acute Bacterial Sinusitis.
- Amoxicillin with or without clavulanate is the recommended medication for initial empiric antibiotic therapy for a 5-7 day treatment course.
- Routine coverage for MRSA during initial antibiotic therapy is NOT recommended.
- Patients who present with any of the symptoms of acute bacterial sinusitis and those who have a risk for antibiotic resistance should be prescribed high-dose amoxicillin-clavulanate.
- Azithromycin use is discouraged because of resistance.
- Doxycycline should be used as the first line agent for adults with either a penicillin or beta-lactam allergy. A respiratory fluoroquinolone (levofloxacin or moxifloxacin) may be used if doxycycline is contraindicated.
- Intranasal corticosteroids can be used as adjunctive therapy to antibiotics, primarily in those with a history of allergic rhinitis.

Symptomatic Therapy for Acute **VIRAL** Upper Respiratory Infection

- Patient should receive education on the difference between viral and bacterial infections and why antibiotics are not helpful or healthy.
- Patient should rest and drink plenty of fluids.
- Over the counter (OTC) medications may help with symptom relief but will not decrease the duration of the illness.

Symptomatic therapy recommendations:
- Rest and fluids
- Acetaminophen/ibuprofen for discomfort and fever
- Saline nasal rinses and/or decongestants
- Cough suppressants
- Intranasal corticosteroids
- Avoid smoking

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When to Refer to a Specialist

- Severe infection (high persistent fever with temperature > 102°F; orbital edema; severe headache, visual disturbance, altered mental status, meningeal signs)
- Recalcitrant infection with failure to respond to extended courses of antibiotic therapy
- Immunocompromised
- Multiple comorbid conditions which could compromise response to treatment
- Unusual or resistant pathogens
- Fungal sinusitis or granulomatous disease
- Nosocomial infection
- Anatomic defects causing obstruction and requiring surgical intervention
- Recurrent episodes (3-4 per year) suggesting chronic sinusitis
- Chronic sinusitis with recurrent acute exacerbations
- Evaluation of immunotherapy for allergic rhinitis

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ICD-10 Information for Acute vs. Chronic Sinusitis

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Sinusitis, unspecified</td>
<td>J32.9</td>
</tr>
<tr>
<td>Acute Sinusitis, unspecified</td>
<td>J01.90</td>
</tr>
<tr>
<td>Acute Upper Resp infection, unspecified</td>
<td>JO6.9</td>
</tr>
</tbody>
</table>

Documentation required for all ICD-10 diagnoses

- Sinus location involved
- Chronicity (acute, subacute, chronic or unspecified)
- Recurrence (recurrent or not specified)
**ACUTE RHINOSINUSITIS TREATMENT in Adults**

**Patient presents with URI symptoms**

**RECOMMEND SYMPTOMATIC THERAPY:**
- Rest and fluids
- Acetaminophen/ibuprofen for discomfort and fever
- Saline nasal rinse and/or decongestants
- Cough suppressants
- Intranasal steroids

**Identify presence of:**
- Persistent symptoms and not improving (>10 days)
- Severe symptoms or high fever (≥102°F)
- Purulent nasal discharge or facial pain
- Worsening symptoms after initial improvement

**Likely Viral**

- Educate patient to notify office if no improvement in 5-7 days after office visit
- Identify symptom improvement

**Likely Bacterial**

- Has risk factors for resistance:
  - Recent antibiotic treatment (within 30 days)
  - Hospitalization in the past 5 days
- Has Penicillin Allergy

**Core Treatment Principles:**
- Recommend antibiotic therapy for 7 days dependent on physician discretion, when needed.
- Address sleep/pain and other symptom management therapies
- Provide a definitive date of “if no better by _____” call the office.
- Identify other unrecognized or undertreated conditions may need consideration
- Use of Azithromycin is discouraged because of resistance.

**Recommend Antibiotic Therapy:**

- **Likely Viral:**
  - No
  - Yes
- **Likely Bacterial:**
  - Has Penicillin Allergy
    - No
    - Yes
  - No

- **Recommend Antibiotic Therapy:**
  - Amoxicillin: 500 mg PO TID or 1000 mg PO BID
  - Amoxicillin with Clavulanate 500/125 mg PO TID or 875/125 mg PO BID

- **Recommend Antibiotic Therapy:**
  - Doxycycline 100 MG PO BID or 200 MG PO Daily

- **Recommend Antibiotic Therapy:**
  - Levofoxacin 500mg daily
  - Moxifloxacin 400mg daily
TEAM MEMBERS

The ‘Triple Aim’ of the Nebraska Health Network (NHN) is to improve the quality and safety of our patient care and improve the patient experience while enhancing affordability. The goal of the NHN is to standardize treatment across our health systems and providers. Clinical Practice Guidelines (CPGs) and resources are developed by NHN workgroups to implement evidence-based care and best practice standards within our network.

Team Roles: There is an on-going commitment from the NHN to develop and implement current evidence-based CPGs. Educating yourself and your patients on these best practice guidelines helps your office achieve the ‘Triple Aim’.

Team Resources: Patient-centered teams work more efficiently and effectively to provide high quality care that’s known to improve health outcomes and patient satisfaction.

PATIENT EDUCATION

Patient Education is essential for improving health behaviors and overall health outcomes.

GOALS

1. Simplify communication and confirm understanding (teach-back).
2. Support patients’ efforts to improve their health (shared decision making).

SUGGESTED TEACHING RESOURCES:

StayWell Healthsheets:
- Acute Sinusitis
- Causes of Sinusitis
- Preventing Sinusitis

ExitCare Education Leaflets:
- Sinusitis, Adult
- Sinusitis, Adult Easy to Read

Additional Resources:
Centers for Disease Control and Prevention
http://www.cdc.gov/bloodpressure/docs/ConsumerEd_HBP.pdf

Health Literacy Universal Precautions:
Assume all patients have difficulty comprehending health information and accessing health services. This section provides key talking points to support health literacy.

Definitions:
Acute sinusitis is an inflammation (irritation and swelling) of the sinuses.

Risk Factors:
Acute sinusitis often develops after a cold or flu-like illness. Colds and flu are caused by germs called viruses which may spread to the sinuses. In a small number of cases, germs called bacteria occur after an infection that started as a virus. This can cause a bacterial sinus infection which can make the infection worse and last longer.

Other factors may cause the sinuses to become infected, including:
- Nasal allergies
- Asthma
- Cigarette smoking
- Facial injury or surgery to nose or cheeks
- Other causes of a blockage to the sinus drainage channels, such as growths (nasal polyps)

Symptoms:
Symptoms may vary by patient, but can include:
- Nasal congestion
- Cough
- Fever
- Headache
- Tiredness
- Facial pain
- Fullness in the ears
- Thick green or yellow nasal drainage

Diagnosis:
Sinus infections can be difficult to diagnose in the early stages because it can feel like a common cold.

- Doctors will diagnose acute sinusitis based on symptoms, medical history and an office examination.
  - The doctor asks about symptoms and how long they last. A common cold usually improves in five to seven days, while an untreated sinus infection can last three weeks or longer.
  - The doctor may examine ears, nose and throat and press on face to identify tenderness over sinuses.

Prevention and Lifestyle Modifications:
Patients can help decrease their risk of developing sinusitis.

- Quit smoking. Smoke irritates nasal passages and increases the chance of infections.
- Avoid allergens. Nasal allergies can trigger sinus infections. By identifying the allergen (the substance causing the allergic reaction) and avoiding it, the patient helps prevent sinusitis.
- Wash your hands frequently. Many bacterial infections start with a virus spread by contact with germs.

The following may help reduce the risk of sinusitis when patients have congestion:
- Drink lots of water. This thins nasal secretions and keeps mucous membranes moist.
- Use steam to soothe nasal passages. Breathe deeply while standing in a hot shower, or inhale the vapor from a basin filled with hot water while holding a towel over your head.
- Avoid blowing your nose with great force. This pushes bacteria into the sinuses.

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REFERENCES & RESOURCES


