



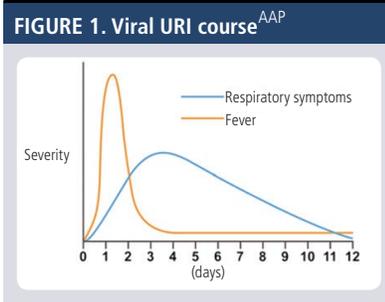
DIAGNOSIS AND MANAGEMENT OF Acute Sinusitis in Adults and Children

2019 Update

This care process model (CPM) was developed by Intermountain Healthcare’s Antibiotic Stewardship and Community-Based Care teams. It is based on expert opinion and clinical practice guidelines from the Infectious Disease Society of America (IDSA), the American Academy of Pediatrics (AAP), and the American Academy of Otolaryngology (AAO). This CPM provides best-practice recommendations for diagnosis and management of acute sinusitis in adult and pediatric patients including guidance for when and which antibiotics should be used for acute bacterial sinusitis.

► Why Focus ON ACUTE SINUSITIS?

- **Antibiotics are overprescribed for sinusitis.** Sinusitis is one of the top three diagnoses associated with antibiotic prescription in the outpatient setting; however, only an estimated 27–59% of antibiotic prescriptions for sinusitis are appropriate.^{FLE1} In adults, even though 85% of patients with sinus symptoms will have a reduction or resolution of symptoms within 5–7 days without antibiotics, 80–90% of patients are prescribed antibiotics.^{ROS}
- **Distinguishing between acute bacterial sinusitis and viral upper respiratory infection (URI) can be challenging.** While a typical viral URI improves over the course of the illness (see Figure 1), persistent bacterial sinusitis does not. It is easy to mistake repeated viral URIs with persistent acute bacterial sinusitis.
- **2012 IDSA guidelines define three clinical presentations of sinusitis — severe, persistent, and worsening — that help guide appropriate management and antibiotic prescription.**^{IDSA}



► KEY POINTS

- **Watchful waiting, with or without a delayed antibiotic prescription, is a recommended treatment option for patients with acute BACTERIAL sinusitis.** The AAP and AAO guidelines both allow observation (watchful waiting) of patients who exhibit purulent nasal discharge ≥ 10 days. In children, the AAP recommends observing for an additional 3 days while adults can be observed for 7 days. Studies have shown that use of antibiotics **does not** significantly alter the persistent disease course in patients (both children^{GAR1} and adults^{GAR2}).
- **Amoxicillin is the first-line antibiotic recommended for non-severe acute sinusitis in the Intermountain region.** This recommendation conforms to AAP guidelines in areas where resistance is low. After review of Intermountain’s resistance patterns, if treatment is needed, amoxicillin is the recommended first-line treatment for persistent or worsening acute bacterial sinusitis due to low rates of beta-lactamase positive organisms.
- **Imaging of the paranasal sinuses, including plain films or CT, is unnecessary in patients who meet the diagnostic criteria for uncomplicated acute sinusitis.** Both bacterial and viral infections of the sinuses result in similar abnormal imaging findings.^{AAP}

► WHAT’S INSIDE?

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MEASUREMENT & GOALS

- **Help providers improve correct diagnosis** of acute bacterial sinusitis.
- **Select appropriate antibiotics** for patients who meet the diagnostic criteria for acute bacterial sinusitis.
- **Reduce the unnecessary use of antibiotics** by incorporating watchful-waiting and delayed antibiotic prescriptions.



Indicates an Intermountain measure

GermWatchSM

GermWatch is Intermountain’s source for up-to-date information about infectious diseases currently circulating in Utah communities.

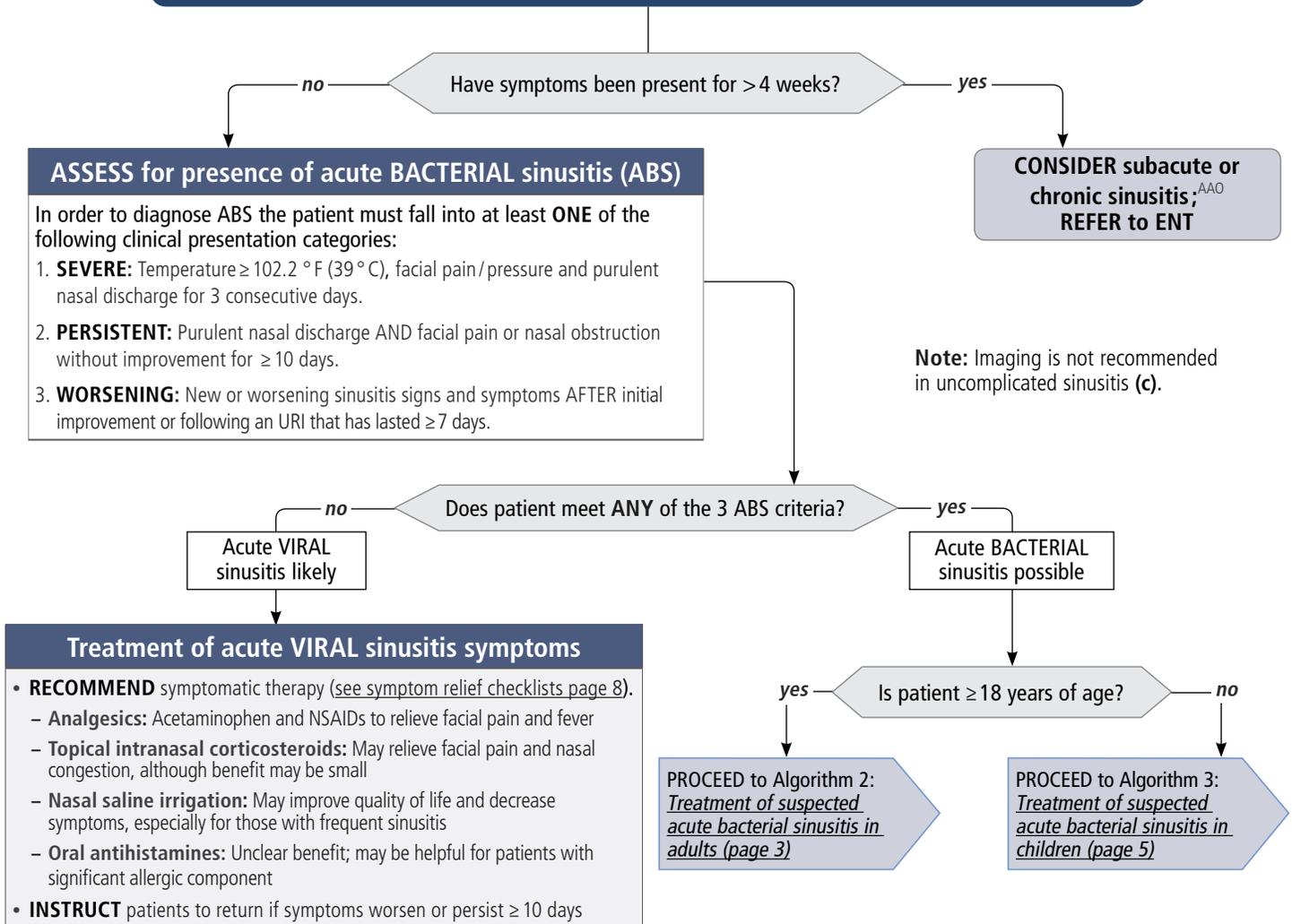
For physicians: intermountainphysician.org/gw

For parents and patients: germwatch.org

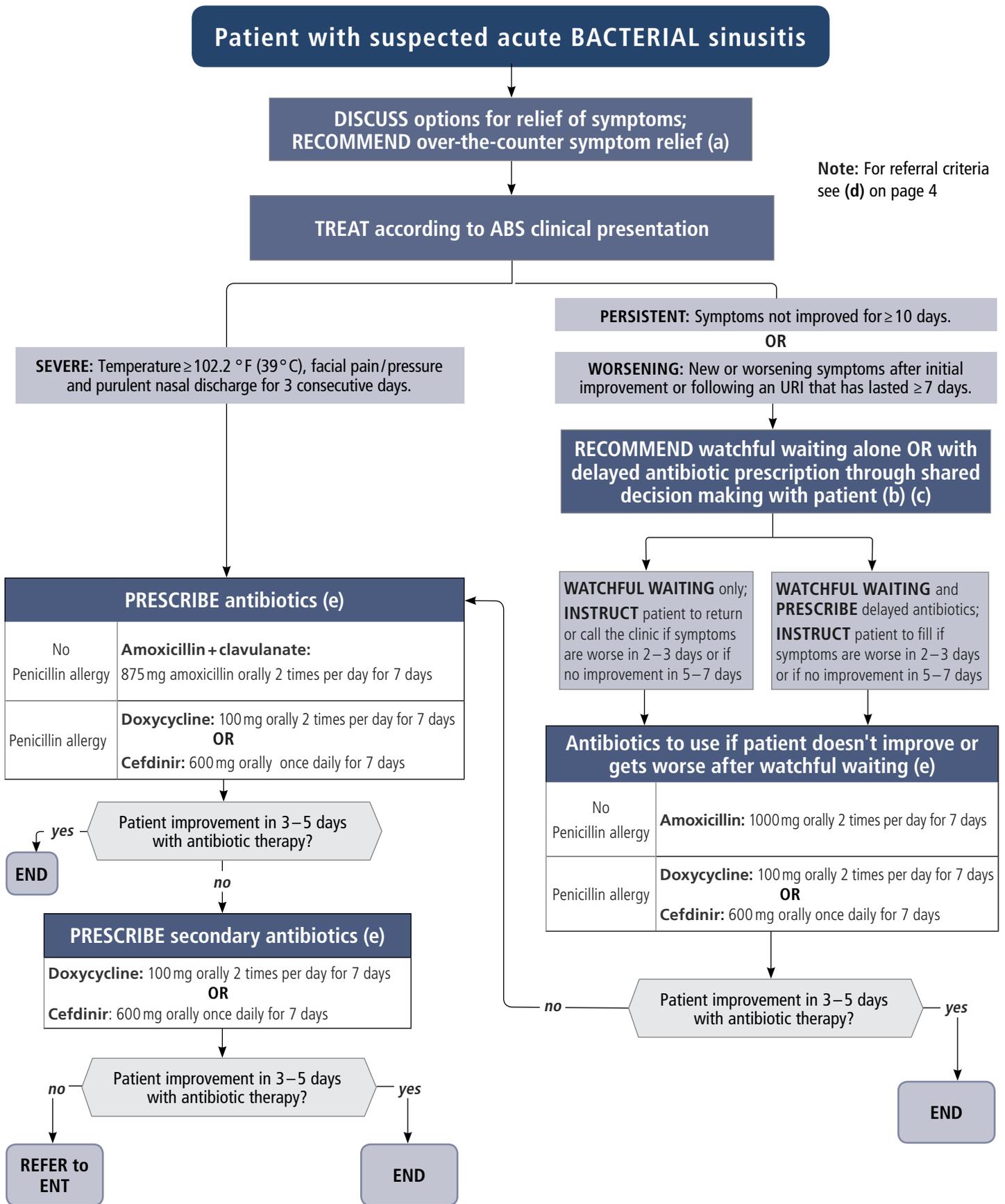


▶ ALGORITHM 1: DIAGNOSIS OF ACUTE SINUSITIS IN ADULTS AND CHILDREN

Patient presents with purulent nasal discharge AND nasal obstruction or facial pressure (a)(b)



▶ ALGORITHM 2: TREATMENT OF SUSPECTED ABS IN ADULTS



ALGORITHM NOTES – ADULT

(a) Symptom relief

Often in sinusitis, the pain is due to mechanical obstruction. Although data are limited, adjunctive symptomatic therapy can be offered.^{ROS} Consider using *Upper Respiratory Infection: Symptom Relief Checklist (Ages >12) (English) / (Spanish)*. Possible therapies include:

- **Analgesics:** Acetaminophen and NSAIDs to help relieve pain or fever.
- **Topical intranasal corticosteroids:** May relieve facial pain and nasal congestion, although benefit may be small.
- **Decongestant nasal spray:** May provide symptom relief but should not be used for more than 3 consecutive days.
- **Nasal saline irrigation:** May improve quality of life and decrease symptoms, particularly for those with frequent sinusitis. **NOTE:** If the patient uses a pot for nasal saline irrigation, be sure to counsel on appropriate solutions to use (store bought sterile saline or water; avoid tap water unless boiled prior to use) and cleaning (after each use) to prevent amoebic meningitis.
- **Oral decongestants:** May be offered if no contraindications exist (such as hypertension) based on clinical experience, although unclear benefit. Limited data suggest that pseudoephedrine is more effective than phenylephrine at reducing nasal congestion.^{HOR, HAT}
- **Oral antihistamines:** May be offered based on clinical experience, although unclear benefit. May worsen congestion by drying the nasal mucosa. May be beneficial for patients who have a significant allergic component.
- **Oral steroids:** Not recommended.
- **Opioids:** Not recommended.

(b) Factors to consider when determining whether to prescribe a delayed antibiotic prescription or have patient return / call for prescription

- Previous experience or outcomes with acute bacterial sinusitis
- Cost of antibiotics
- Caregiver concerns about potential adverse effects of antibiotics
- Cost of follow-up visit
- Travel plans
- Duration of symptoms
- Access to primary care provider

(c) Delayed antibiotic prescription

When using a delayed antibiotic prescription:

- Write a prescription that can be filled in the future.
- Instruct the patient to monitor symptoms for the next 5 days, paying special attention to whether or not symptoms improve, stay the same, or worsen.
- Recommend over-the-counter symptomatic treatment. *Upper Respiratory Infection: Symptom Relief Checklist (Ages >12) (English) / (Spanish)*
- Instruct patient to fill prescription if symptoms worsen in 2–3 days or fail to improve in 5–7 days.
- [See page 7](#) for more information and talking points.

(d) Referral to an ENT^{IDSA}

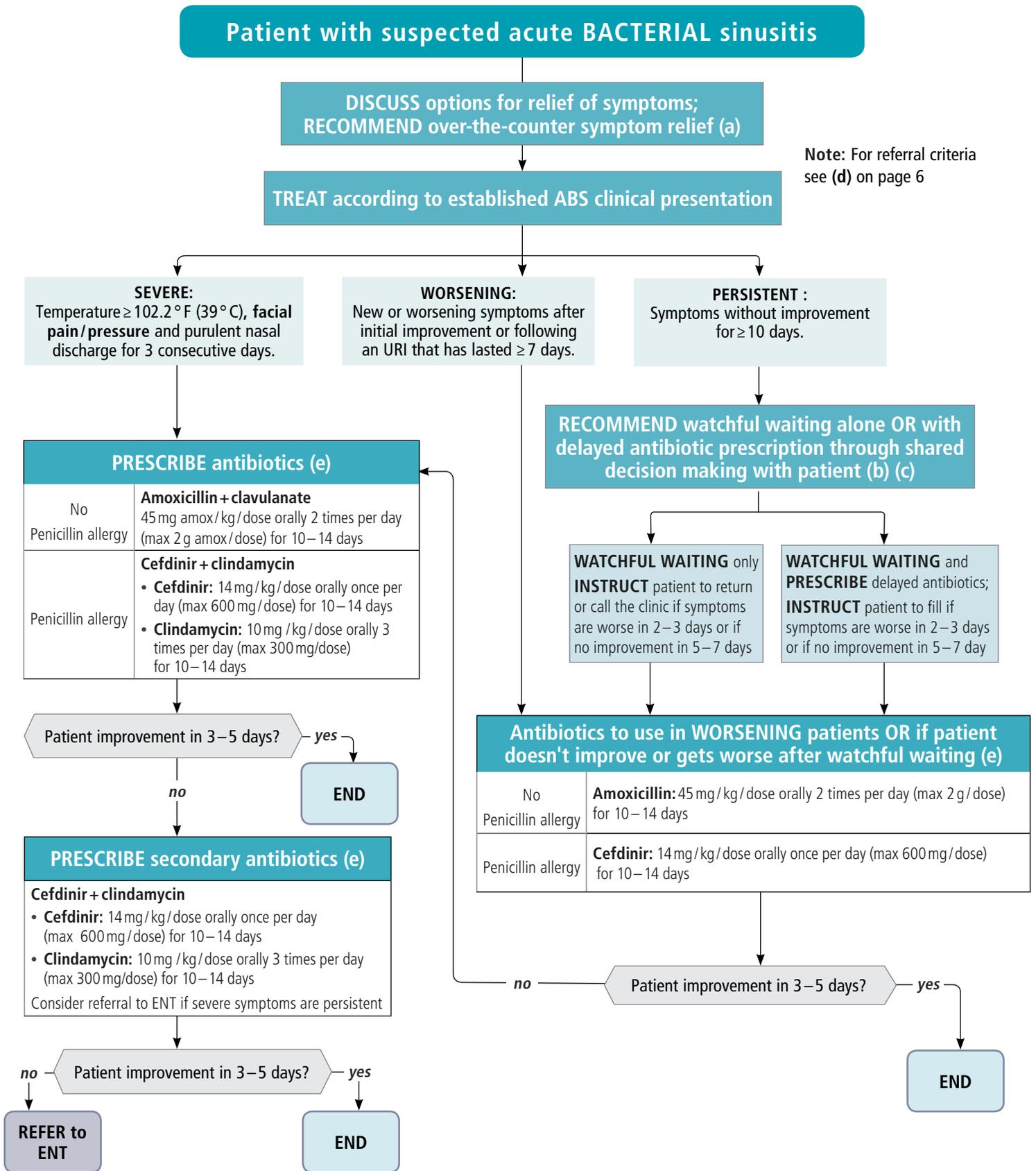
Refer patients to an ENT that meet ANY of the following criteria:

- Seriously ill and/or immunocompromised
- Continued clinical deterioration despite extended courses of antimicrobial therapy
- Recurrent bouts of acute sinusitis with clearing between episodes

(e) Antibiotic resistance

Do not prescribe azithromycin or trimethoprim/sulfamethoxazole due to high rates of resistance.

▶ ALGORITHM 3: TREATMENT OF SUSPECTED ABS IN CHILDREN, AGES 1-18 YEARS



ALGORITHM NOTES — PEDIATRIC

(a) Symptom relief

Often in sinusitis, the pain is due to mechanical obstruction. Although data are limited, adjunctive symptomatic therapy can be offered.^{ROS} Certain therapies are not to be used in young children. Refer to *Upper Respiratory Infections: Symptom Relief Checklist; Ages 0-12 (English) / (Spanish)*

Possible therapies include:

- **Analgesics:** Acetaminophen and NSAIDs to help relieve pain or fever.
- **Topical intranasal corticosteroids:** May relieve facial pain and nasal congestion, although benefit may be small.
- **Decongestant nasal spray:** Do not use in children < 4 years of age. Has no demonstrated benefit in pediatric patients.
- **Nasal saline irrigation:** May improve quality of life and decrease symptoms, particularly for those with frequent sinusitis. **NOTE:** If the patient uses a pot for nasal saline irrigation, be sure to counsel on appropriate solutions to use (store bought sterile saline or water; avoid tap water unless boiled prior to use) and cleaning (after each use) to prevent amoebic meningitis.
- **Oral decongestants:** Do not use in children < 4 years of age. May be offered if no contraindications exist (such as hypertension) based on clinical experience, although unclear benefit. Limited data suggest that pseudoephedrine is more effective than phenylephrine at reducing nasal congestion.^{HOR, HAT}
- **Oral antihistamines:** May be offered based on clinical experience, although unclear benefit. May worsen congestion by drying the nasal mucosa. May be beneficial for patients who have a significant allergic component.
- **Oral steroids:** Not recommended.
- **Opioids:** Not recommended.

(b) Factors to consider when determining whether to prescribe a delayed antibiotic prescription or have patient return / call for prescription

- Previous experience or outcomes with acute bacterial sinusitis
- Cost of antibiotics
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- Cost of follow-up visit
- Travel plans
- Duration of symptoms
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- Write a prescription that can be filled in the future.
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Refer patients to an ENT that meet ANY of the following criteria:

- Seriously ill and immunocompromised
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(e) Antibiotic resistance

Do not prescribe azithromycin or trimethoprim/sulfamethoxazole due to high rates of resistance.

COUNSELING WITH PATIENTS ABOUT DELAY OF ANTIBIOTICS

Clinicians often find difficulty postponing the prescription of antibiotics, even when clinically desired, due to patient/parent concerns. Several studies have identified strategies for talking with patients/families while still maintaining their satisfaction. Several key concepts have emerged from this research. They are listed below.^{FLE2}

- **Explain to your patients why antibiotics are not needed.**
 - Antibiotics don't work on viruses.
 - Antibiotics can cause harm; only use when needed.
 - Antibiotic usage promotes antibiotic resistance.
- **Give patients an alternative treatment plan.**

Recommend specific over-the-counter or home remedies that are effective for symptomatic relief (e.g. pain).
See symptom relief checklists on page 8.
- **Communicate specific contingency plans to patients.**

If **A** occurs — then execute **B** based on likely events and the patient's specific concerns.
- **Consider delayed antibiotic prescription**
 - Set clear symptom/sign parameters for filling the prescription.
 - Allow patients to contact your office if they have questions.

► MANAGEMENT AND TREATMENT OF ACUTE BACTERIAL SINUSITIS

Watchful waiting and delayed antibiotic prescription

In most instances, sinusitis resolves on its own without antibiotic treatment. A strategy of observation, also known as "watchful waiting" or "active monitoring," should be considered in lieu of immediate antibiotic treatment in specific circumstances in both children^{AAP} and adults.^{ROS} These include:

- Children with persistent acute bacterial sinusitis diagnosis
- Adults with persistent or worsening acute bacterial sinusitis diagnosis

Patients/parents should be instructed to return for prescription or fill a delayed prescription if symptoms fail to improve within 5–7 days or worsen within 2–3 days. Some examples of delayed prescription programs include "safety net antibiotic prescriptions" (SNAP) and "wait-and-see prescriptions" (WASP).

Research indicates the use of delayed prescriptions significantly decreases antibiotic usage in upper respiratory infections including those with sinusitis.^{KIN}

Consider the following steps when choosing to delay antibiotic prescription:

- **Use a shared decision-making** process involving provider and patient or parent. The side bar on the left contains useful strategies for discussing delayed antibiotics with patients.
- **Clearly communicate to patients/parents** the specific signs and symptoms to watch for during observation period and details of recommended treatment of symptoms, including pain management.
- **Ensure a follow-up plan for patients that do not improve.** Have patients return for prescription or give a delayed antibiotic prescription that can be filled if the patient's condition does not improve or worsens. Make sure to include a start date and expiration date on the prescription so that it is only active during the observation window.

► RESOURCES

Intermountain patient / parent resources

Access patient education handouts at Intermountainhealthcare.org. You can order patient education handouts using [Print It!](#) at Intermountain's Design and Print Center for one-stop access and ordering of Intermountain-approved education, such as fact sheets, booklets, and trackers.

["Watchful Waiting" and Delayed Antibiotic Prescriptions](#)

Available in [English](#) and [Spanish](#)

[Upper Respiratory Infection: Symptom relief checklist \(Ages 0-12\)](#)

Available in [English](#) and [Spanish](#)

[Upper Respiratory Infection: Symptom relief checklist \(Ages ≥ 12\)](#)

Available in [English](#) and [Spanish](#)

[Pediatric Dosing Guide: Acetaminophen and Ibuprofen](#)

Available in [English](#) and [Spanish](#)

[Colds and Coughs in Adults: Managing Viral Infections](#)

Available in [English](#) and [Spanish](#)

[Colds and Coughs in Children and Adolescents: Managing Viral Infections](#)

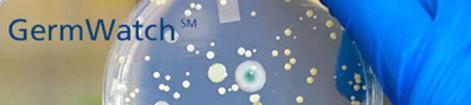
Available in [English](#) and [Spanish](#)



Provider resources

To find this and other CPMs as well as Best Practices Flash Cards, access: [Intermountain Physician/tools and resources/Care Process Models \(CPM\)](#). For local up-to-date information on epidemiology of infectious diseases, access [GermWatch](#).





GermWatch is Intermountain's source for up-to-date information about infectious diseases currently circulating in Utah communities.

For physicians: intermountainphysician.org

For parents and patients: germwatch.org

▶ REFERENCES

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This CPM presents a model of best care based on the best available scientific evidence at the time of publication. It is not a prescription for every physician or every patient, nor does it replace clinical judgment. All statements, protocols, and recommendations herein are viewed as transitory and iterative. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to Eddie Stenehjem, Intermountain Healthcare, Infectious Disease (Eddie.Stenehjem@imail.org).

CPM DEVELOPMENT TEAM

Whitney Buckel, PharmD
 Adam Hersh, MD, PhD
 Jeremy Meier, MD
 Jared Olson, PharmD
 Heidi Porter, PhD (Medical Writer)
 Eddie Stenehjem, MD
 Emily Thorell, MD
 Anthony Wallin, MD
 Park Willis, MD