

AHRQ Safety Program for Telemedicine: Improving Antibiotic Use

Best Practices in Managing Acute Sinusitis in Children and Adults Over Telemedicine

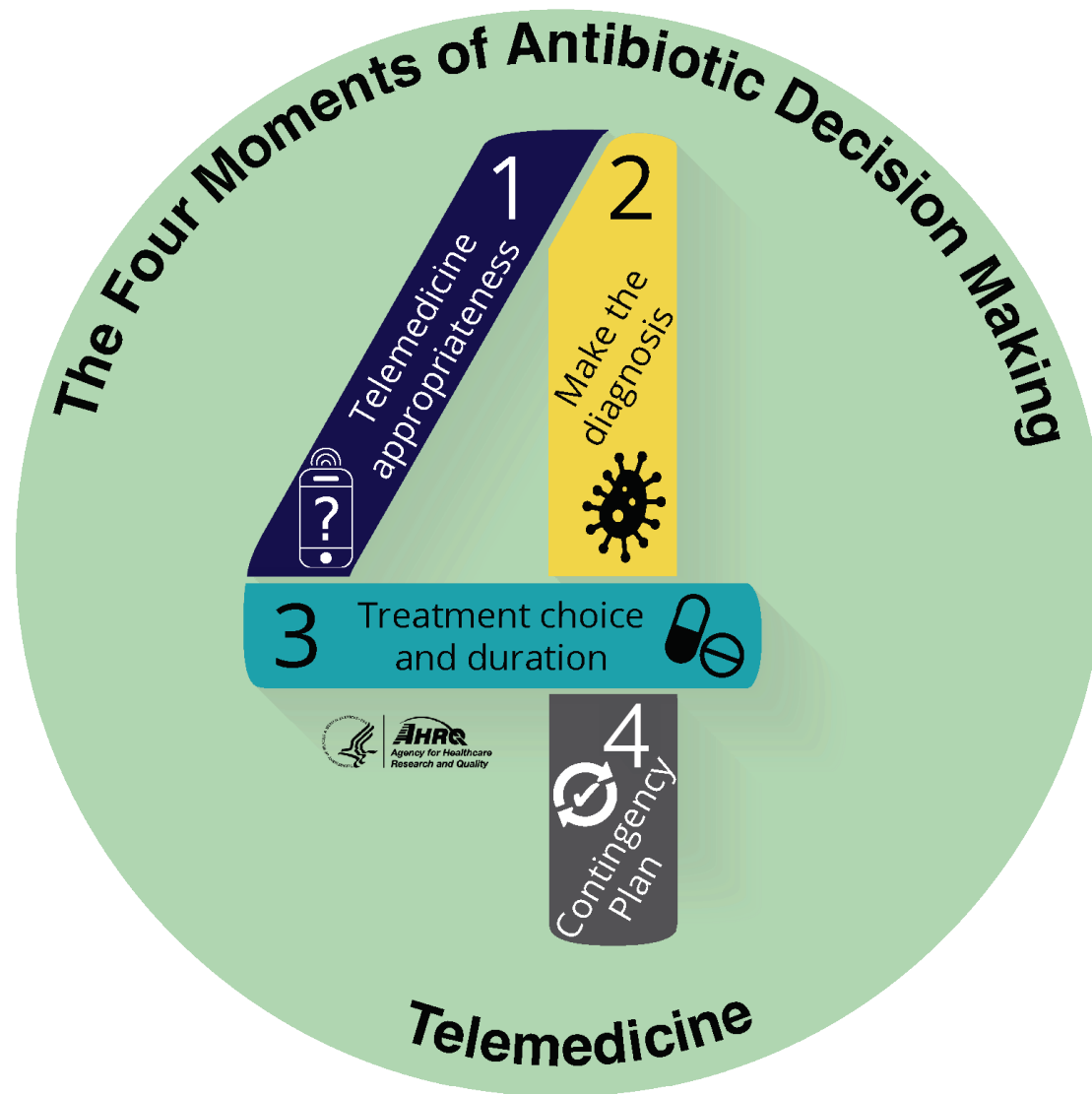


Objectives

By the end of this presentation, participants will be able to—

- Explain how to diagnose acute sinusitis in children and adults over telemedicine
- Describe when to treat acute sinusitis with antibiotics in children and adults
- Describe the nonantibiotic management of acute sinusitis in children and adults
- Learn when a patient presenting with symptoms of acute sinusitis may need to be evaluated in person

The Four Moments of Antibiotic Decision Making



1. Is my patient an appropriate candidate for a telemedicine visit?
2. Does my patient have signs and symptoms indicating an infection that may require antibiotics? Is a diagnostic test needed?
3. If antibiotics are indicated, what is the narrowest, safest, and shortest regimen I can prescribe?
4. What symptomatic relief should I offer or prescribe to my patient? What should I tell my patient about the expected course and the followup plan?

A Case

- A 40-year-old female with no past medical history presents with 3 days of headache, cough, subjective fever, and copious nasal discharge.
- She feels miserable and hasn't had an infection like this before.
- She's looking for immediate symptom relief.



Moment 1: Telemedicine Appropriateness – 1

- Diagnostic criteria for sinusitis are not widely used in clinical practice and do not help distinguish viral from bacterial sinusitis.¹
- Common symptoms include—
 - Purulent nasal discharge
 - Facial congestion or fullness
 - Facial pain or pressure
 - Fever
 - Hyposmia or anosmia



Central Nervous System Involvement



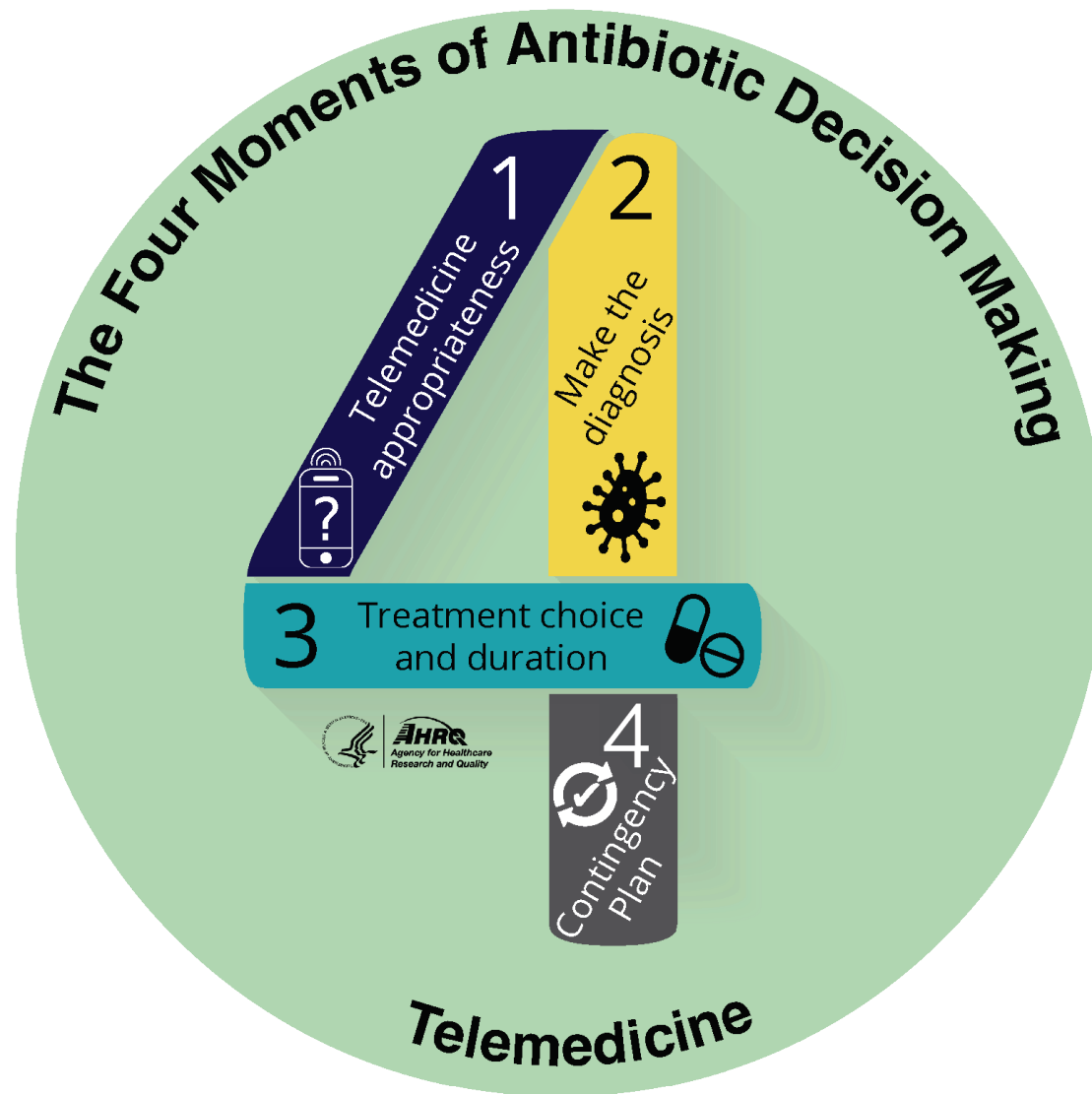
- Ask focused questions to ascertain if the patient may have extension of the sinusitis into the central nervous system (CNS) or orbits.
- Signs of CNS extension
 - Confusion
 - Unilateral weakness
 - Proptosis
 - Limited ocular movements
 - Acute vision changes
- Patients with these symptoms are not appropriate for telemedicine

Moment 1: Telemedicine Appropriateness – 2

- Assess if the patient has had altered mental status or shortness of breath **NO**
 - These symptoms would warrant emergency attention
- Assess if the patient has a fever >102 degrees Fahrenheit **NO, temperature 100.4 degrees**
 - These symptoms would warrant an in-person visit for a more thorough exam
- Ask about history of recurrent sinusitis **NO**
 - Recurrent sinusitis would warrant an in-person visit for a more thorough exam



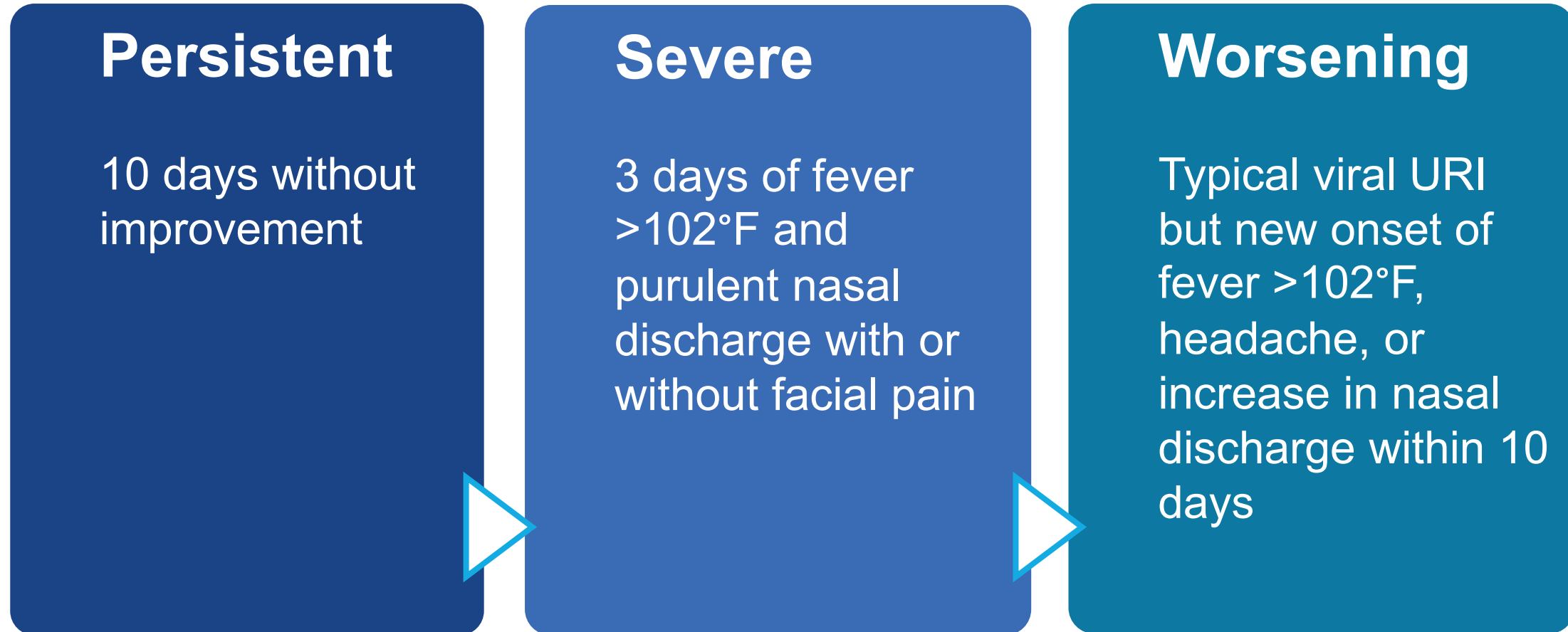
Moment 2



1. Is my patient an appropriate candidate for a telemedicine visit?
2. Does my patient have signs and symptoms indicating an infection that may require antibiotics? Is a diagnostic test needed?

Moment 2: Need for Antibiotics²⁻⁴

- Consider antibiotics if—



Additional Signs and Symptoms Evaluation

- Duration of symptoms?
- Symptoms at the beginning and now?
 - Nasal discharge presence and description?
 - Facial pain or pressure presence and description?
 - Headache presence and description?
 - Temperature now and over time?

Additional Signs and Symptoms Answers

- Duration of symptoms? **3 days**
- Symptoms at the beginning and now?
 - Nasal discharge presence and description? **Copious, thick, yellow**
 - Facial pain or pressure presence and description? **Mild, over maxillary sinuses**
 - Headache? **Mild, frontal**
 - Temperature now and over time: **Highest was 100.4 degrees Fahrenheit**

Virtual Physical Exam 1

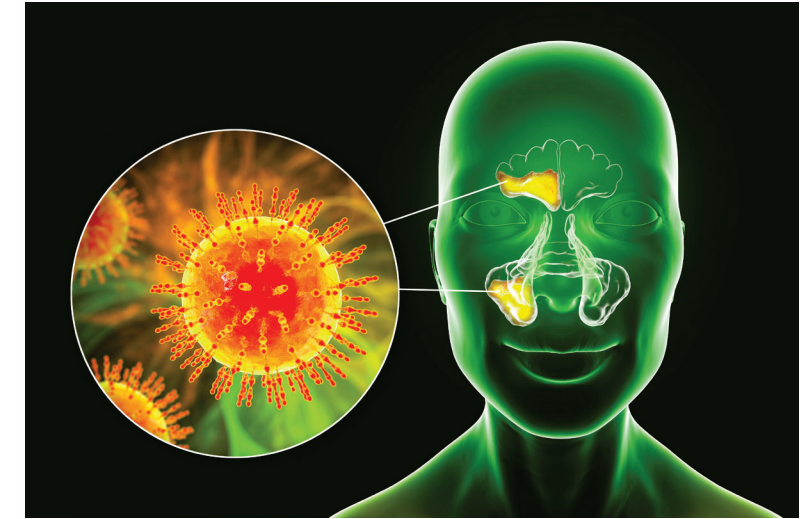
- Ask her to check her temperature and give you the result
- Ask her to move the camera and lighting, as well as her head, so that you can see the following:
 - Nares
 - Mouth
 - Oropharynx
- Ask the patient to gently tap on the frontal, sphenoid, ethmoid, and paranasal sinuses and tell you how it feels
- Observe her breathing and ability to speak in full sentences
- If the patient is in a location where she could remove her shirt, consider asking her to do so you can monitor for retractions
- Count her breaths

Virtual Physical Exam 2

- YOUR OBSERVATIONS
 - Nasal mucosa are erythematous with significant edema bilaterally
 - There is profuse cloudy nasal discharge
 - Oral mucosal membranes are moist
 - Oropharynx is erythematous
 - No visible dyspnea or increased work of breathing
 - Speaking in full sentences
 - No retractions on chest exam
 - Respiratory rate: 12 breaths per minute

Treatment

- 98 percent of cases of sinusitis are VIRAL⁵
 - Treatment is simply symptom relief²
 - Antibiotics are indicated only for a minority of sinusitis cases
- What about children?^{6,7}
 - Most sinusitis in children is viral
 - Bacterial sinusitis is unusual in children under 4 years of age
 - Diagnosis and treatment recommendations are similar as in adults

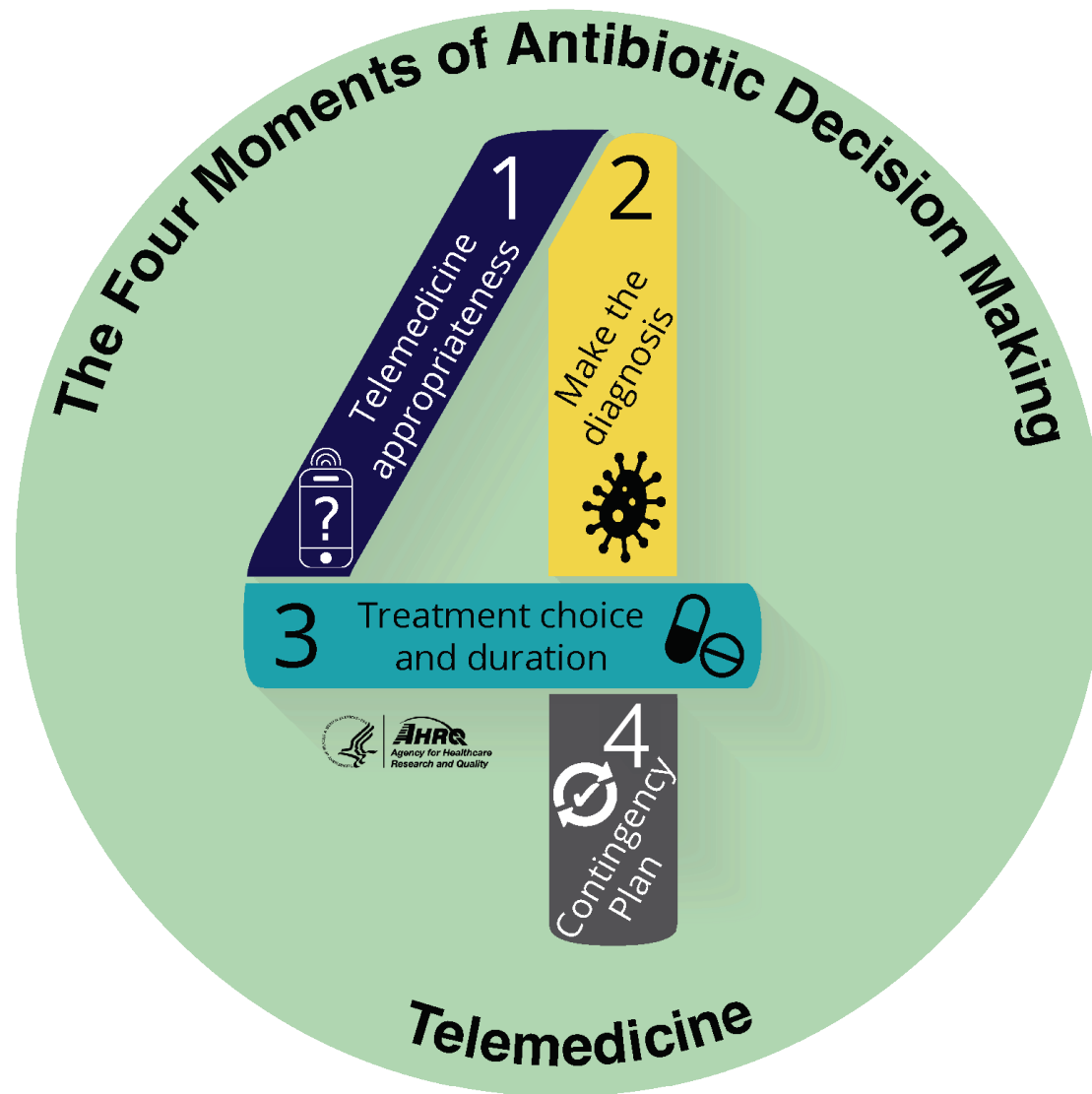


Diagnostic Testing in Sinusitis: Imaging^{4,8}

- Computed tomography (CT): Limited role and extremely rare
 - Considered in patients with symptoms concerning for CNS extension
 - Rarely indicated in children
 - Adds cost, time, and radiation exposure
- Plain films (x rays) of the sinuses are inaccurate



Moment 3



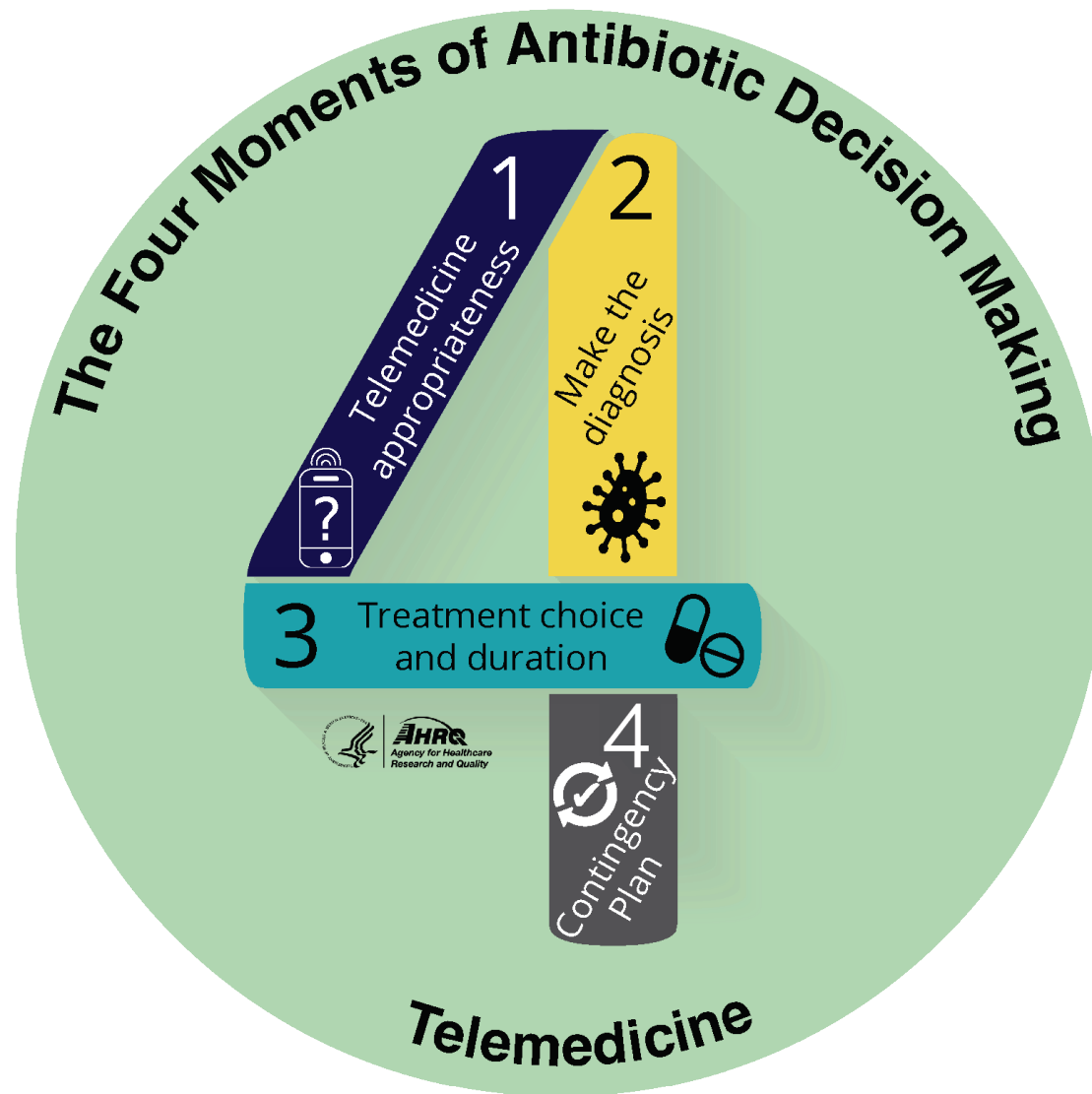
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3. If antibiotics are indicated, what is the narrowest, safest, and shortest regimen I can prescribe?

Moment 3: Choice of Antibiotic Regimen^{2,4}

- ***First-line (adults and children)***
 - **Amoxicillin two to three times a day**
 - **Amoxicillin/clavulanate, twice a day**
 - Mild penicillin allergy in adult or child
 - Cefixime or cefpodoxime WITH clindamycin
 - If rate of penicillin nonsusceptible pneumococcus <20 percent, cefixime or cefpodoxime WITHOUT clindamycin
 - Doxycycline
 - Severe penicillin allergy
 - Adults: Levofloxacin, moxifloxacin, or doxycycline
 - Children: Levofloxacin
- 5- to 7-day treatment course (adults)
- 10-day treatment course (children)
- Macrolides (like azithromycin) are not recommended



Moment 4



1. Is my patient an appropriate candidate for a telemedicine visit?
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Moment 4: Symptomatic Treatment⁹⁻¹¹

- Decongestants
 - Oxymetazoline twice a day x 5 days
 - Pseudoephedrine 12-hour
 - Nighttime decongestant preparation
- Analgesics and antipyretics
- Nasal saline irrigation
- Intranasal corticosteroid
- Do NOT recommend oral phenylephrine



Moment 4: Followup Plan⁴

- Return for in-person evaluation if—
 - **Persistent** symptoms that last 10 days and do not improve
 - **Increasing severity**: Fever of at least 102 degrees Fahrenheit and purulent nasal discharge for at least 3–4 consecutive days
 - Sudden onset of **worsening symptoms** after 5–6 days
- Worsening, severe symptoms warrant a prompt emergency department visit
 - Confusion
 - Severe headaches
 - Unilateral weakness
 - Visual changes



Case Presentation: 1 Week Later...

- Sinus tenderness, but not as severe
- She still has thick nasal discharge
- No longer having fevers
- Symptomatic treatment
 - Decongestants
 - Analgesia



Take-Home Messages

- ✓ 98 percent of sinusitis cases are viral, necessitating symptomatic treatment only
- ✓ Only consider treating sinusitis with antibiotics if symptoms are **persistent, severe, or worsening**
- ✓ Amoxicillin-clavulanate is first line treatment for bacterial sinusitis for children and adults
- ✓ People can experience significant discomfort and disturbance from sinusitis symptoms
- ✓ Suggesting specific pain and congestion relief options is important to support symptom management and confidence in your diagnosis

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