AHRQ Safety Program for Telemedicine: Improving Antibiotic Use

Best Practices in Managing Influenza Over Telemedicine

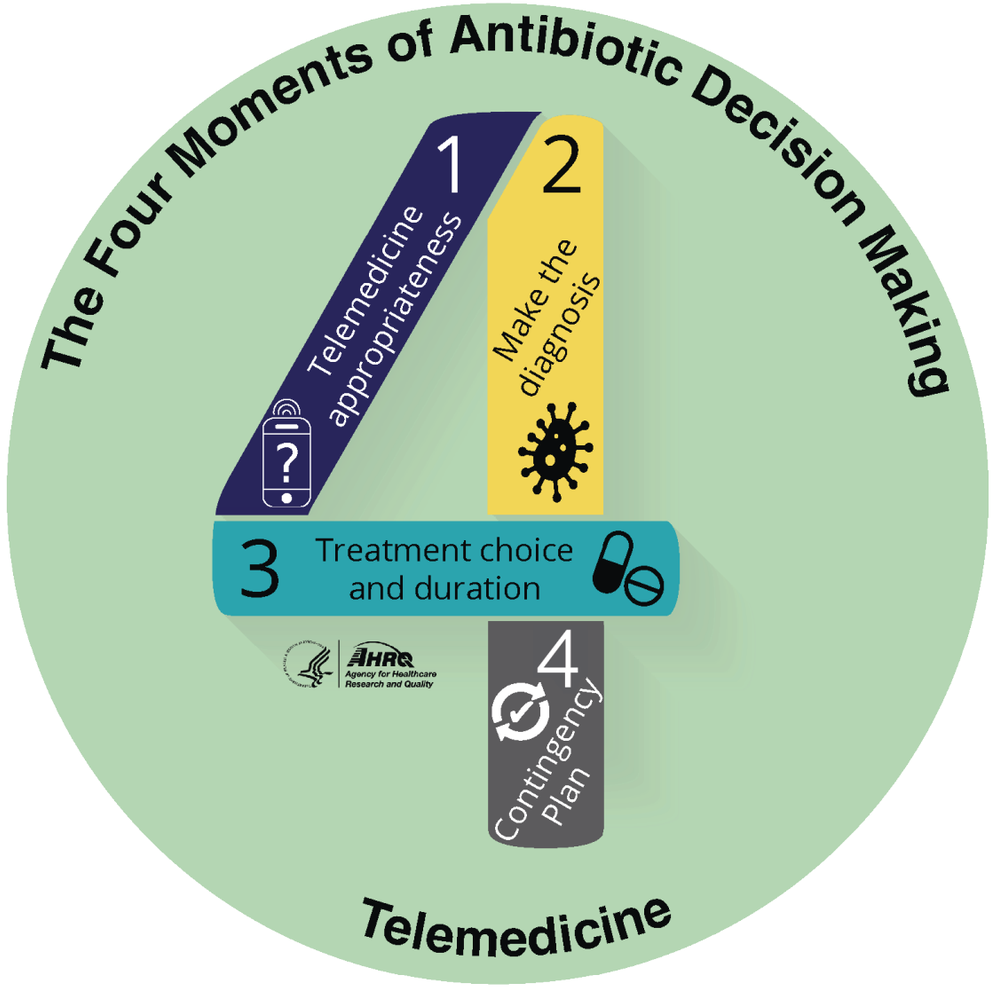
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Objectives

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

- Describe how to diagnose influenza in children and adults over telemedicine
- Understand when a patient presenting with symptoms of influenza over telemedicine may need to be seen in person
- Explain the role of antivirals in treatment of influenza
- Describe symptomatic treatment of influenza for children and adults
- Learn about recommendations for influenza vaccination for children and adults

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?

Case Presentation

- A 35-year-old male with no past medical history presents via telemedicine with 2 days of myalgias, subjective fevers, and cough
- Patient did not get vaccinated for influenza this year
- It is currently February



Moment 1: Telemedicine Appropriateness

- When evaluating a patient for influenza, keep in mind the following:
  - Time of the year
  - Amount of circulating influenza[1,2]
- Current influenza information can be found at https://www.cdc.gov/fluview/overview/fluview-interactive.html



FLUVIEW interactive

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Outpatient Respiratory Illness Activity Map Determined by Data Reported to ILINet

This system monitors visits for respiratory illness that includes fever plus a cough or sore throat, also referred to as ILI, not laboratory confirmed influenza and may capture patient visits due to other respiratory pathogens that cause similar symptoms.

Influenza Statistics

- Between 3 and 11 percent of the United States population develop symptomatic influenza in a typical season[3]
  - Most develop a mild illness while a subset of people develop severe influenza
- 100,000–710,000 hospitalizations in the United States annually
- 4,900–51,000 deaths in the United States annually[4]

Influenza Diagnosis

- Most common influenza symptoms
  - Fever
  - Headache
  - Sore throat
  - Myalgias
  - Cough
  - Rhinorrhea



- An acute onset of a cough and fever has a positive predictive value of at least 70 percent if influenza is circulating[5]

Influenza Diagnosis, Continued

- Suspect influenza in patients with typical symptoms when influenza is prevalent in the community, usually October–May
- Look up prevalence of influenza circulating in the community[2]



Moment 1: When To Come in for an In-Person Visit

- Some patient groups require more workup and need to be evaluated in person[1]
  - Patients at high risk of worsening chronic medical conditions
  - Patients at higher risk of increased complications
  - Infants and young children under the age of 3
  - Patients with severe symptoms



Note About Influenza Vaccinations[6]

- Getting vaccinated is the best way to prevent influenza and its complications
- Vaccine effectiveness ranges from 40 to 60 percent
- When vaccinated patients get influenza, cases tend to be less severe

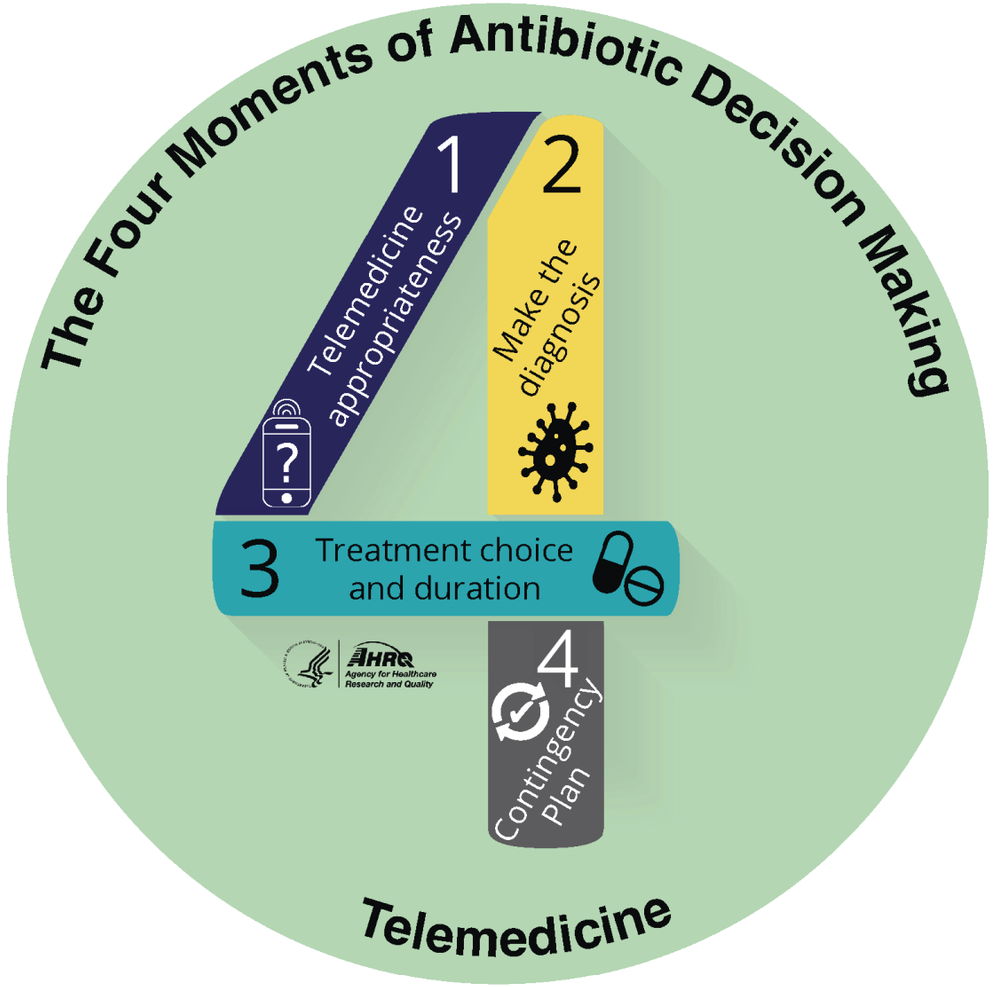


Moment 1: Possible Complications

- If concern for altered mental status or shortness of breath, emergency attention is required
- If fever >102 degrees Fahrenheit, in-person evaluation is required



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: Evaluate For Signs and Symptoms

- Length of symptoms?
- Symptoms at the beginning of the illness and symptoms now?
- Headache?
- Wheezing?
- Sore throat?
- Productive cough?



Moment 2: Additional Signs and Symptoms Answers

- Patient states that symptoms began 2 days ago and haven't changed much:
  - Still has myalgias, feels feverish
  - Mild frontal headache, improved with acetaminophen
  - No shortness of breath or wheezing
  - Mild sore throat
  - Dry cough



Moment 2: Virtual Physical Examination

- Patient positions himself so that you can see the inside of his nares, mouth, and oropharynx
  - Nasal mucosa pinkish red with no discharge, bleeding, or swelling
  - Oral mucosal membranes are moist
  - Oropharynx is erythematous



Moment 2: Virtual Physical Examination – Pulmonary

- No visible dyspnea or increased work of breathing
- Speaking in full sentences
- Consider having patient remove shirt if in a private location
- No retractions
- Respiratory rate is 12 breaths per minute



Moment 2: Diagnostic Testing[1]

- Prevalence of influenza is low, patient's symptoms are nonspecific, and patient is not immunocompromised: testing for influenza is not necessary because a false positive test result is more likely than a true positive.
- High local prevalence of influenza: testing for influenza is not needed since patients who meet criteria for treatment can receive empiric therapy.

Moment 2: Diagnostic Testing Continued[1]

Patient Considerations	When Influenza Is Circulating Locally	During Low Influenza Activity
High-risk patient including those with immunocompromising conditions present with influenzalike illness, pneumonia, or nonspecific respiratory illnesses for whom testing will influence management	Consider	Not necessary
Patients who present with acute onset of a respiratory condition and either exacerbation of chronic conditions or a potential complication of influenza and testing will influence management	Consider	Not necessary
Patients not at high risk for complications who present with influenzalike illness, pneumonia, or nonspecific respiratory illness if you would consider treating the patient with antivirals or providing prophylaxis to household contacts at risk of complications from influenza	Consider	Not necessary
Patients in whom there is a question about whether they may have COVID-19 or influenza, and in whom treatment decisions may be made for either COVID-19 or influenza based on the results	Consider	Not necessary
Patients who have symptoms and history that are classic for influenza	Not necessary	Consider
Acute onset of respiratory symptoms with or without fever, especially if immunocompromised or high risk, and if testing will influence management	Not necessary	Consider

Moment 2: Referral for Testing

- Timing is key for effective influenza treatment
- Consider treating without testing if—
  - It is possible the patient has influenza and the patient is at risk of complications, or
  - Patient is highly likely to have influenza and has significant symptoms[7]
- Refer for testing, have patient acquire a test, or send to your physical clinic if you have one
  - Nasopharyngeal sample obtained with a flocked swab
  - Specimen preferably should be collected within 3 days of symptom onset
  - At-home testing available



Types of Diagnostic Tests[8]

- Rapid influenza direct antigen diagnostic tests (for viral antigens)
  - Very specific, moderately sensitive
  - 10–15 minutes
  - Better at detecting influenza A than influenza B
  - Many available as point-of-care tests
- Rapid molecular assays (for viral nucleic acids)
  - Very specific and sensitive
  - 15–30 minutes
  - Many available as point-of-care tests
  - Some available over the counter for at-home use to detect influenza A and B and COVID-19[9]

Types of Diagnostic Tests, Continued[8]

- Laboratory-based molecular tests
  - Also check other respiratory viral pathogens
  - 45 minutes–hours
  - Conducted in a lab
  - If point-of-care testing is unavailable and making diagnosis is important
- Viral cultures and influenza serologies not helpful

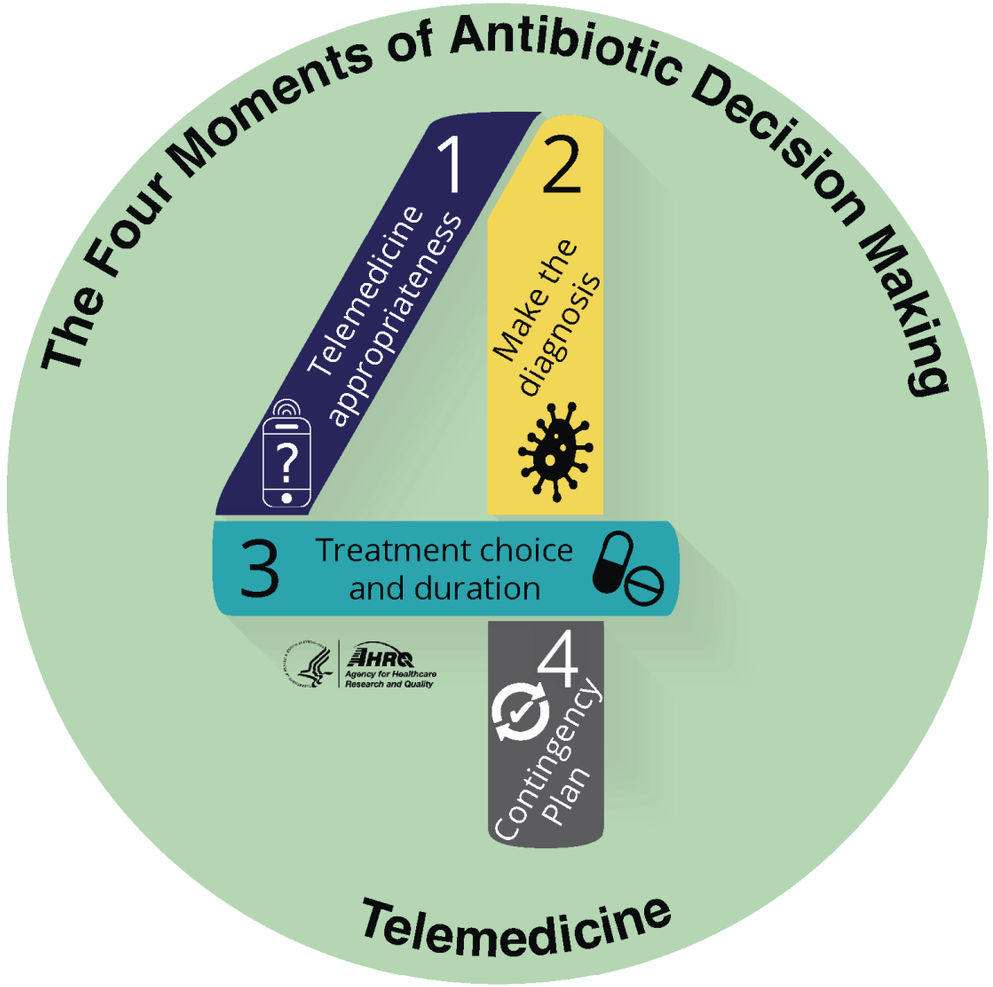


Moment 2: Our Patient

- 35-year-old previously healthy male
- Symptoms are highly consistent with influenza during time of high prevalence
- Household contacts are not high risk
- Does not work in healthcare
- Diagnostic testing is not necessary



Moment 3



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?

Moment 3: Antibiotics Indicated?

- No antibiotics indicated for treatment of uncomplicated influenza
- In rare cases, can develop secondary bacterial pneumonia
- Our patient does not meet criteria for antibiotics



Antiviral Treatment[10]

- Prescribe antiviral medications for patients at high risk of complications
  - Severe or progressive illness
  - Chronic medical conditions or immunocompromise
  - Children <2 years
  - Adults ≥65 years
  - Pregnant women and women within 2 weeks postpartum
- Start antiviral treatment as early as possible, ideally within 48 hours and up to 5 days from symptom onset
  - Reduces risk of complications
  - Will reduce duration of symptoms by 1–2 days
  - In some cases, start treatment prior to testing

Antiviral Treatment, Continued[10]

- Consider antiviral treatment for adults and children who are—
  - Household contacts of those at risk of developing complications
  - Healthcare workers caring for patients at risk of developing complications
  - Previously healthy telemedicine patient with confirmed or suspected influenza
- Antiviral treatment should be initiated within 48 hours of symptom onset

Antiviral Treatment Options[10-12]

- Oseltamivir – oral, 5 days
  - Infants >14 days, children, adults (including pregnant women)
- Zanamivir – inhaled, 5 days, two inhalations twice daily
  - Age 7 years and older
  - Potential increased risk of bronchospasm
- Baloxavir – single oral dose[13]
  - Age 12 years and older
  - Not recommended for severely immunosuppressed patients
  - Resistance may develop
- Paramavir – single intravenous dose
  - Age 6 months and older
  - Not well studied in influenza B



Antiviral Prophylaxis[14]

- Consider in patients with significant immunocompromise or those at high risk of complications who are household contacts of influenza patients
- Administer prophylaxis within 48 hours of exposure to influenza patient

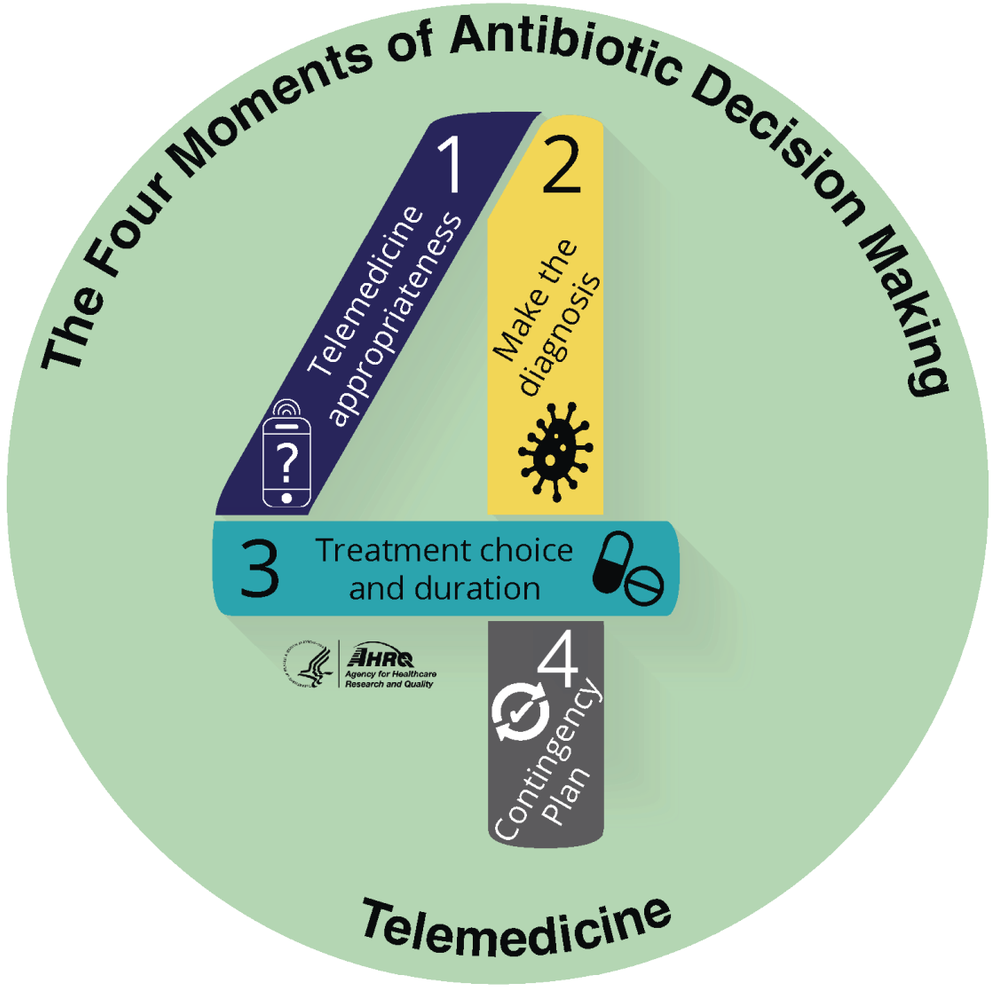


Moment 3: Our Patient

- You discuss starting antiviral therapy: oral oseltamivir for 5 days, inhaled zanamivir for 5 days, or one dose of oral baloxavir



Moment 4



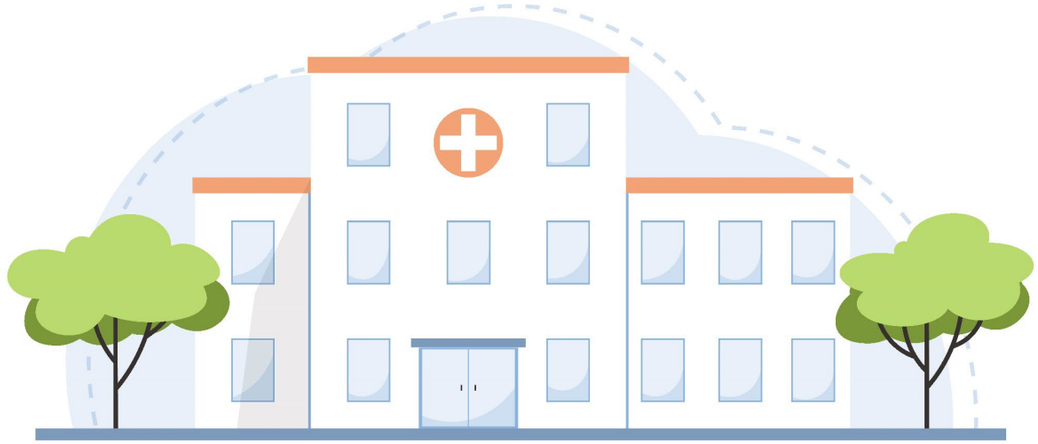
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Moment 4: Influenza Symptomatic Treatment[15-18]

- Some medications may help:
  - Acetaminophen
  - Nonsteroidal anti-inflammatory medications (NSAIDS)
  - Nasal decongestants (less benefit)
  - Oral decongestants (less benefit)
  - Antihistamine-decongestants (less benefit)
  - Antihistamine-decongestant-analgesic combinations (less benefit)
  - Albuterol (only for patients with airflow obstruction)

Moment 4: Expectations and Followup Plan

- May feel ill for a week or more
- Return for in-person evaluation if—
  - Persistent high fever (above 102 degrees Fahrenheit)
  - Severe headache
  - Pain in the face or forehead
  - Severe fatigue
  - Rash
- Emergency department visit:
  - Confusion
  - Difficulty breathing or swallowing



Case Presentation: Influenza Prevention

- Patient asks if he should do anything to prevent influenza



Case Presentation: Influenza Prevention, Continued[19]

- Routine annual influenza vaccination:
  - Recommended for everyone >6 months
  - Children 6 months–8 years should get two doses, unless they received two doses ≥4 weeks apart in the past season
  - Other children and everyone ≥9 should get one dose
  - Adults ≥65 years can receive higher dose or adjuvanted influenza vaccine[20]
  - Egg allergy is not a contraindication



Take-Home Messages

- ✓ When considering a diagnosis of influenza, consider whether influenza is prevalent in the patient's community and whether the patient has typical symptoms
- ✓ Testing should be considered in patients in whom a positive result would lead to treatment
- ✓ See these patients in person: severe or progressing illness, chronic medical conditions, immunocompromised, children under age 2 years, adults age 65 years and older, pregnant women, and women within 2 weeks postpartum

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