AHRQ Safety Program for Telemedicine: Improving Antibiotic Use

Best Practices in Managing COVID-19 Over Telemedicine

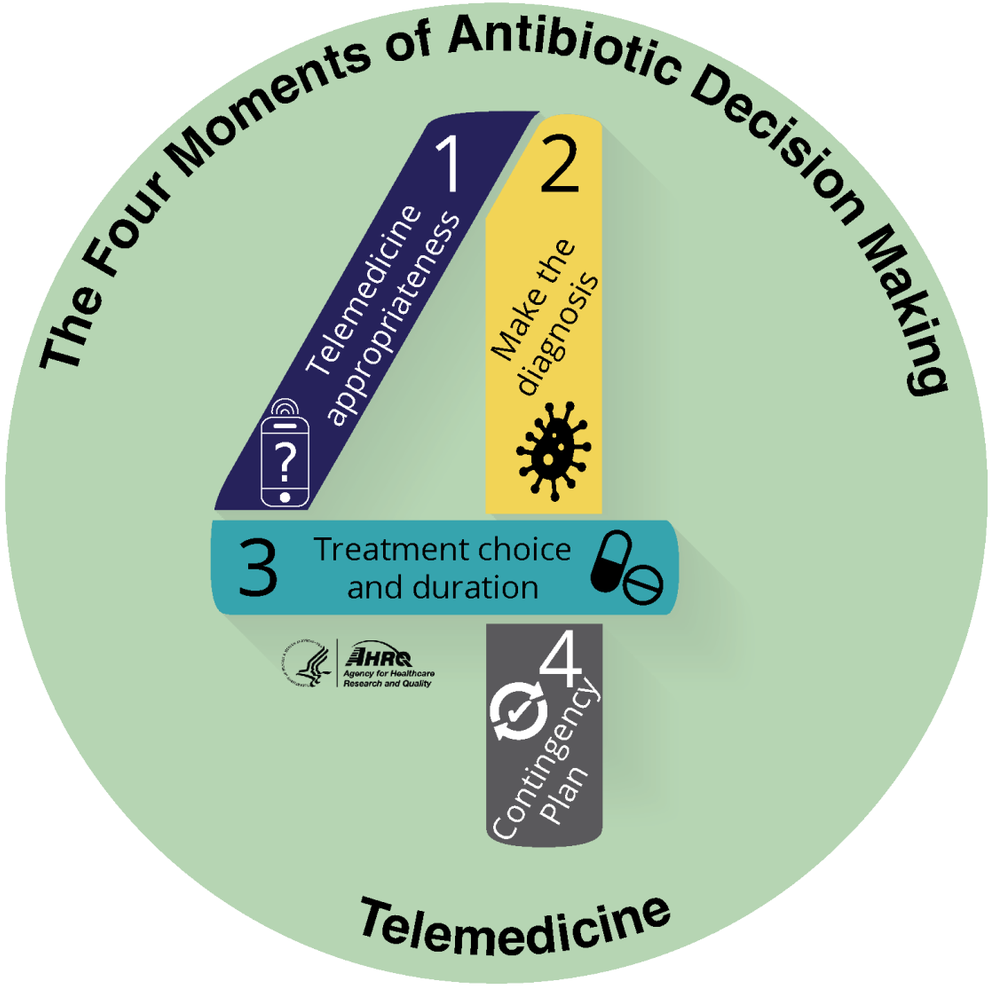
AHRQ Pub. No. 26(27)-0021
October 2026

Objectives

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

- Describe how to diagnose COVID-19 in children and adults over telemedicine
- Understand when an adult or pediatric patient presenting with symptoms of COVID-19 to telemedicine may need to be seen in person
- Explain the role of antivirals in treatment of COVID-19
- Describe symptomatic treatment of COVID-19 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

- 60-year-old female with 1 day of myalgias, fatigue, subjective fevers, loss of taste, and cough
- Received two vaccines for COVID-19 early in pandemic
- No recent COVID-19 vaccine



Moment 1: Telemedicine Appropriateness – 1[1]

- Likelihood of COVID-19?
- Amount of circulating SARS-CoV-2?
- Exposure to COVID-19?
- Signs and symptoms of COVID-19?
- At-home COVID-19 test?



COVID-19 Statistics[2-3]

- Deaths from COVID-19 have declined since the pandemic
- People still become ill from COVID-19
- Websites from the CDC and state and local health departments provide up-to-date information about COVID-19 prevalence

COVID-19 Presentation[1-2]

- Most common symptoms: fever, headache, sore throat, myalgias, fatigue, cough, headache, and rhinorrhea
- Also common: shortness of breath, vomiting, diarrhea
- Loss of taste or smell may occur
- Difficult to distinguish these symptoms from other viral respiratory infections, especially influenza

Moment 1: Telemedicine Appropriateness – 2

- Suspected in patients with symptoms consistent with COVID-19, especially when virus may be circulating
- Many patients with COVID-19 can be evaluated over telemedicine
- To decrease the likelihood of transmission of COVID-19 to others in the clinic, it may even be preferred for many COVID-19 patients to present via telemedicine



Moment 1: Telemedicine Appropriateness – 3[4-6]

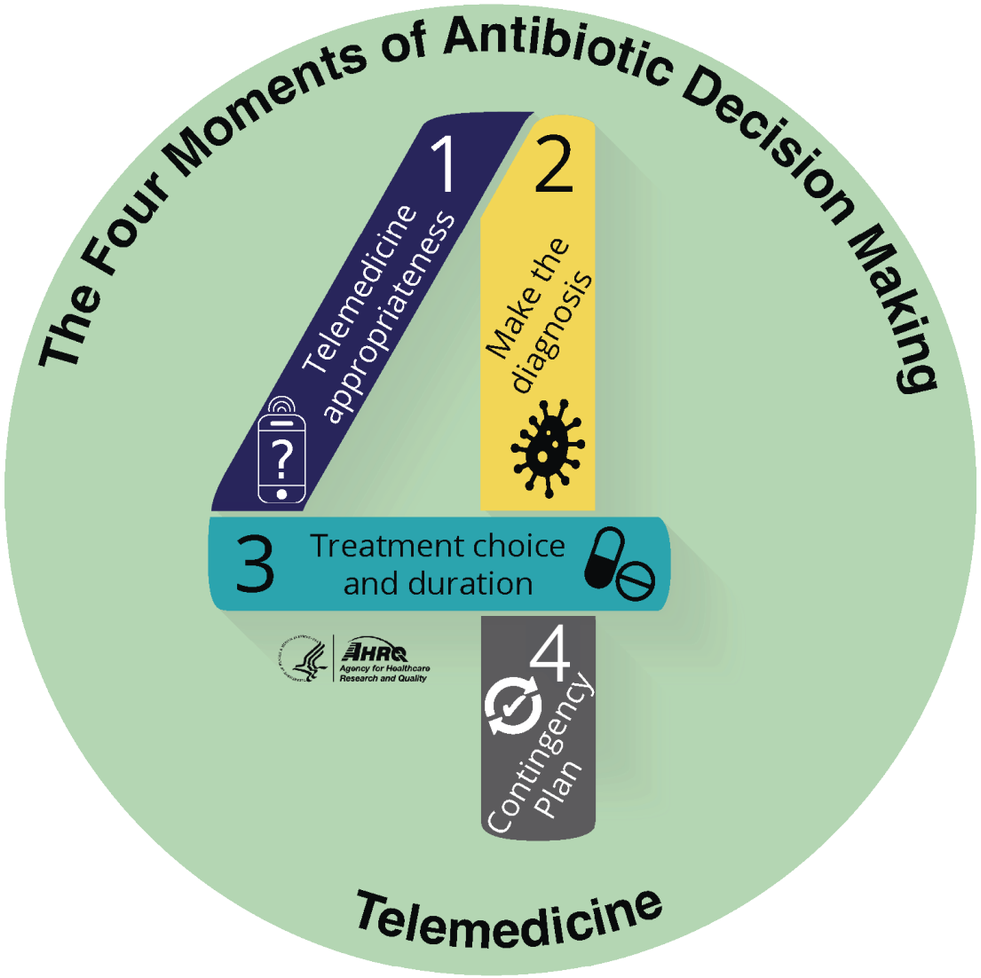
Severity	Description	Triage
Asymptomatic infection	Tested positive, no symptoms	Telemedicine
Mild illness	Signs and symptoms but no shortness of breath	Telemedicine
Moderate illness	Lower respiratory disease but no hypoxia	In-person evaluation
Severe illness	Decreased oxygenation, tachypnea, or 50% infiltrate	Emergency care
Critical illness	Respiratory failure, sepsis, or organ dysfunction	Emergency care

Moment 1: Current Case

- No shortness of breath or signs of organ dysfunction
- She is having some symptoms of COVID-19
- Appropriate for telemedicine



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: Additional Signs and Symptoms – 1

Ask:

- Duration of symptoms?
- Exposures to COVID-19?
- Change in symptoms over time?
- Headache?
- Wheezing?
- Sore throat?
- Productive cough?
- Temperature?
- Change in taste or smell?



Moment 2: Additional Signs and Symptoms – 2[1]

Duration of symptoms? 1 day

Exposures to COVID-19? 4 days ago

Change in symptoms over time? None: myalgias and subjective fever

Headache? Mild frontal

Wheezing? No, has not heard; is not short of breath

Sore throat? Mild

Productive cough? Dry

Temperature? Subjective fever

Change in taste or smell? Taste decrease



Moment 2: Virtual Physical Exam

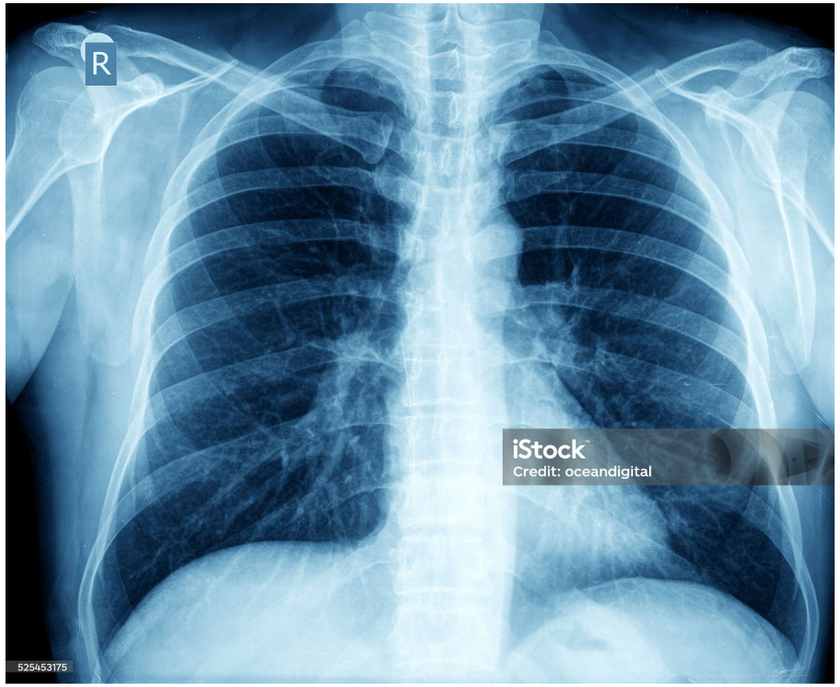
Conduct virtual pulmonary exam

No visible dyspnea or increased work of breathing

Speaking in full sentences

No retractions

Respiratory rate: 12 breaths per minute



Moment 2: Diagnostic Testing – 1[7-8]

Is a diagnostic test needed?

- Empirically treat: if diagnostic testing is unavailable, the patient has a clear exposure or there is a local outbreak, and the patient has consistent symptoms
- Most of the time, diagnostic testing is required to distinguish from influenza and other respiratory infections, aid in treatment decisions, and to make decisions about isolation
- Patients can self-test with an over-the-counter test



Moment 2: Diagnostic Testing – 2[7-8]

Over-the-counter point-of-care tests

- Rapid antigen tests
- Combination rapid antigen tests that test for COVID-19, influenza A, influenza B, and/or RSV



Clinic-based tests

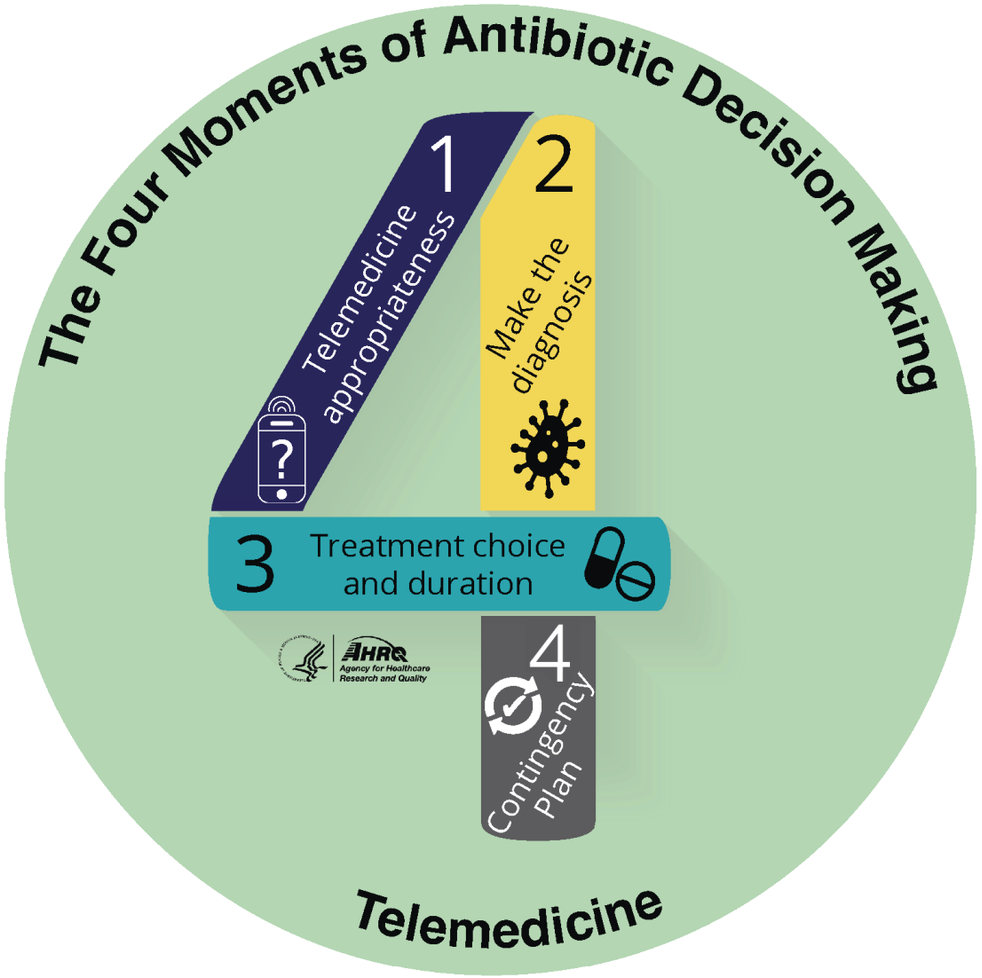
- Nucleic acid amplification tests
- Some point-of-care
- Some laboratory based

Moment 2: Case

- Symptoms consistent with COVID-19
- Patient obtains a COVID-19 test and it returns as positive
- Her asymptomatic husband also tests positive



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: Role of Antibiotics[9]

- No antibiotics are indicated for COVID-19
- Co-infections rare, even among hospitalized patients
- Can consider antivirals



Moment 3: Treatment in Adults – 1[4-5,10-12]

Consider antivirals to treat patients at risk of progression to severe disease



- Patients >50 years (and especially ≥65 years)
- Severe immunocompromising conditions
- Taking immunosuppressive medications
- Unvaccinated or incompletely vaccinated
- Conditions including obesity, cancer, diabetes, chronic pulmonary disease, cerebrovascular disease, chronic liver disease, cystic fibrosis, disabilities, chronic cardiac disease, HIV, dementia, mood disorders, schizophrenia, pregnancy or recent pregnancy, primary immunodeficiency, smoking, tuberculosis, or chronic renal disease

Moment 3: Treatment in Adults – 2[4,10,12]



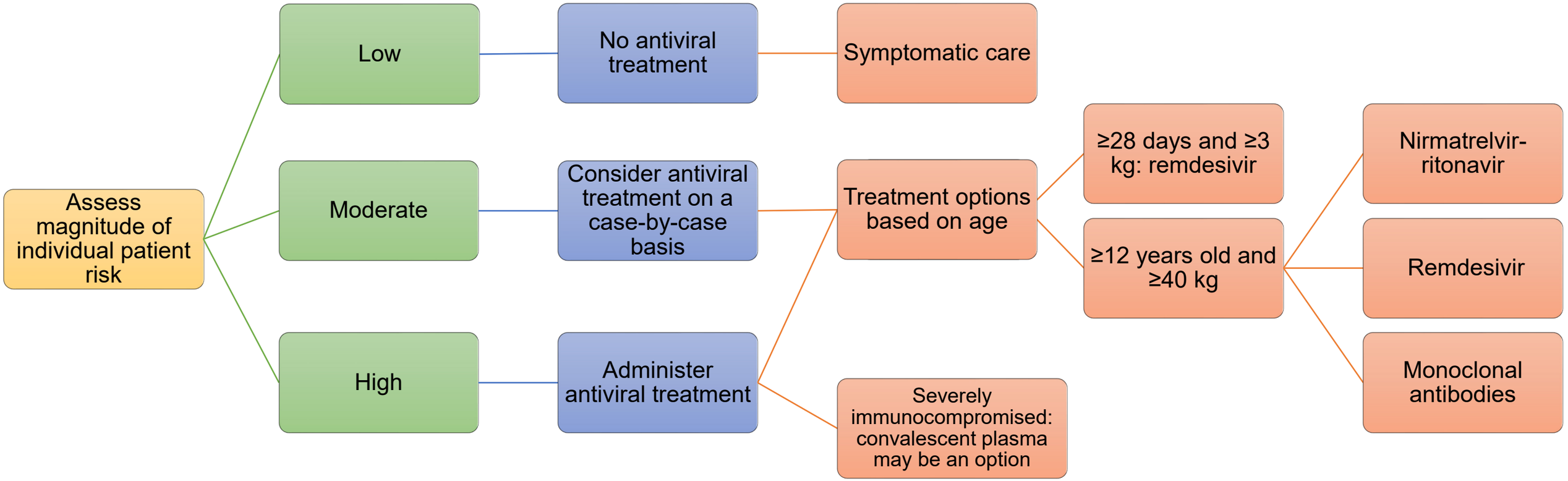
- First line: ritonavir-boosted nirmatrelvir
  - Start as soon as possible and within 5 days of symptom onset
  - Serious interactions with CYP3A4 enzyme inducers
  - Side effects: dysgeusia, diarrhea, myalgia, vomiting, headache, hypertension
- Alternative: injectable remdesivir
  - Start as soon as possible and within 7 days of symptom onset
- Alternative if other therapies are not available, feasible, or appropriate: molnupiravir
  - Start as soon as possible and within 5 days of symptom onset
  - Cannot be given in pregnancy
- Dexamethasone not recommended for telemedicine patients with COVID-19

Moment 3: Treatment in Children – 1[13]

Low risk	• With prior immunity, no exacerbating factors, and with intermediate risk factors • No risk factors or low risk factors only
Moderate risk	• With prior immunity and high risk factor • With prior immunity, intermediate risk factors, and ≥1 exacerbating factor below: - Severe or poorly controlled intermediate risk factors - Multiple risk factors - Age <1 or ≥12 years • Without prior immunity, no exacerbating factors, and with intermediate risk factors
High risk	• No prior immunity, high risk factor, AND ≥1 exacerbating factor below: - Severe or poorly controlled high risk factors - Multiple risk factors - Age <1 or ≥12 years • Moderate or severe immunocompromise

- High risk factors: obesity (BMI>95% for age), medically complex with dependence on respiratory technology, severe condition resulting in impaired airway clearance or activities of daily living, severe asthma or other chronic lung disease with >2 or >1 systemic medication daily, severe cardiac disease, multiple moderate to severe chronic diseases, pregnancy
- Intermediate risk factors: prematurity in children <2 years; sickle cell disease; poorly controlled diabetes; chronic kidney disease; nonsevere cardiac, neurologic, or metabolic disease
- Low-risk conditions: mild asthma, overweight, and well-controlled diabetes

Moment 3: Treatment in Children – 2[13]

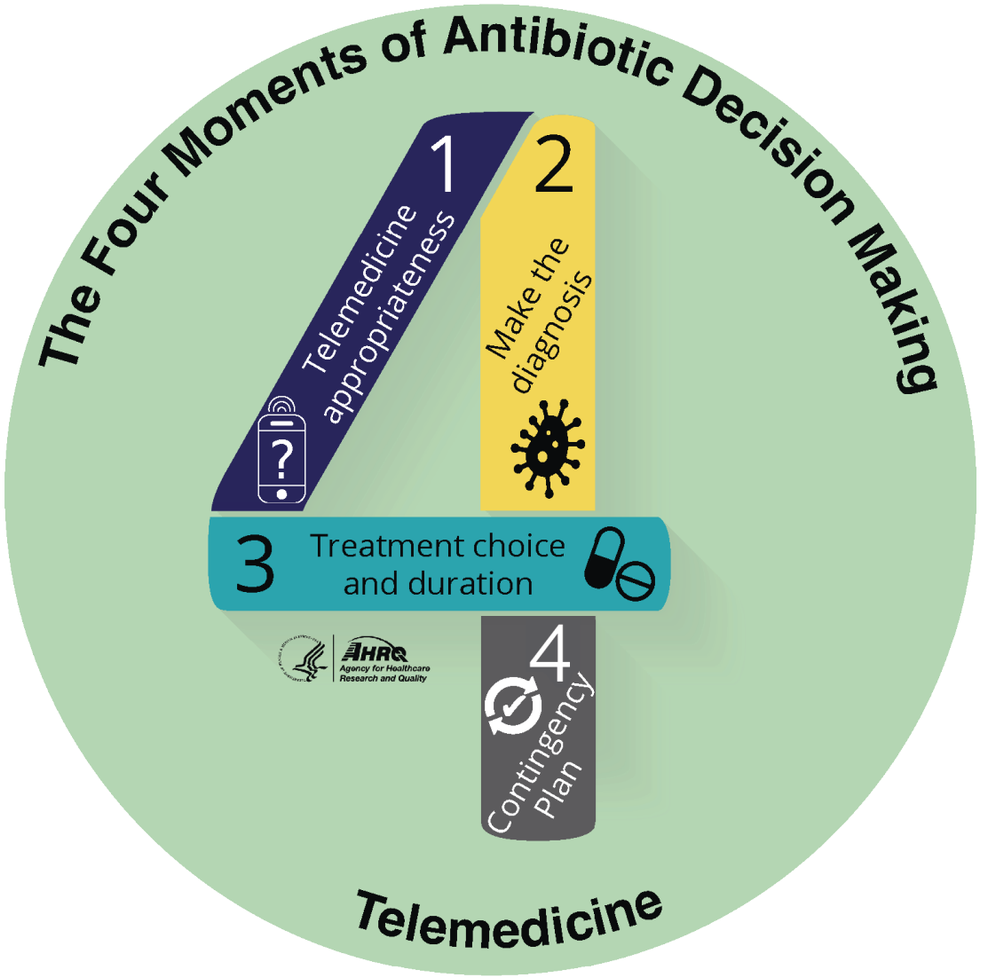


Moment 3: Our Patient[14]

- Patient at risk of progression to more severe disease given age of 60
- Discuss treating with ritonavir-boosted nirmatrelvir, or if not available, remdesivir



Moment 4



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?

Moment 4: Symptomatic Relief[4,10]

- Over-the-counter antipyretics, analgesics, or antitussives for fever, headache, myalgias, and cough
- Drink plenty of fluids
- Rest
- No steroids: not recommended for outpatients or telemedicine



Moment 4: Expectations and Followup Plan

- May feel ill for a week or more
- For patients at higher risk of progression, consider close followup
- Specific reasons to seek an in-person visit
    - “Seek an in-person visit if you develop shortness of breath. Go to the emergency room if you develop severe shortness of breath, chest pain, or confusion.”



Take-Home Messages

- ✓ Consider COVID-19 if the patient has typical symptoms, the patient has been recently exposed to COVID-19, or the virus is prevalent in the community
- ✓ Encourage patients to obtain and use COVID-19 point-of-care over-the-counter testing to aid in diagnosis
- ✓ Severity of symptoms help to determine whether patient is a telemedicine candidate
- ✓ Antiviral treatments can be offered to those at risk of progression to severe disease

Disclaimer

- The findings and recommendations in this presentation are those of the authors, who are responsible for its content, and do not necessarily represent the views of AHRQ. No statement in this presentation should be construed as an official position of AHRQ or of the U.S. Department of Health and Human Services.

- Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested in this activity should not be used by clinicians without evaluation of their patient's conditions and possible contraindications and/or dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.

References – 1

1. Centers for Disease Control and Prevention. Clinical presentation. February 5, 2026. https://www.cdc.gov/covid/hcp/clinical-care/covid19-presentation.html. Accessed May 13, 2026.

2. Centers for Disease Control and Prevention. Similarities and differences between flu and COVID-19. September 17. 2024. https://www.cdc.gov/flu/about/flu-vs-covid19.html. Accessed May 13, 2026.

3. Centers for Disease Control and Prevention. Surveillance and data analytics. March 19, 2026. https://www.cdc.gov/covid/php/surveillance/index.html. Accessed May 13, 2026.

4. Bhimraj A, Falck-Ytter Y, Baden LR, et al. IDSA guidelines on the treatment and management of patients with COVID-19. October 14, 2025. Infectious Diseases Society of America. https://www.idsociety.org/COVID19guidelines. Accessed May 13, 2026.

5. Centers for Disease Control and Prevention. Clinical course: Progression, management, and treatment. February 5, 2026. https://www.cdc.gov/covid/hcp/clinical-care/management-and-treatment.html. Accessed May 13, 2026.

6. Marks KM, Gulick RM. COVID-19. Ann Intern Med. 2023 Oct;176(10):ITC145-ITC160. PMID: 37812774.

7. Centers for Disease Control and Prevention. Testing for COVID-19. March 10, 2025. https://www.cdc.gov/covid/testing/index.html. Accessed May 13, 2026.

8. Centers for Disease Control and Prevention. Interim guidelines for collecting and handling of clinical specimens for COVID-19 testing. October 29. 2024. https://www.cdc.gov/covid/hcp/clinical-care/clinical-specimen-guidelines.html. Accessed May 13, 2026.

References – 2

9. Karaba SM, Jones G, Helsel T, et al. Prevalence of co-infection at the time of hospital admission in COVID-19 patients, a multicenter study. Open Forum Infect Dis. 2020 Dec 21;8(1):ofaa578. PMID: 33447639.

10. Qaseem A, Yost J, Abraham GM, et al. Outpatient treatment of confirmed COVID-19: Living, rapid practice points from the American College of Physicians (Version 2, Update Alert). Ann Intern Med. 2024 Aug;177(8):e2400128. Epub 2024 Jul 9. PMID: 38976885.

11. Centers for Disease Control and Prevention. Underlying conditions and the higher risk for severe COVID-19. February 6, 2025. https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html. Accessed May 13, 2026.

12. Centers for Disease Control and Prevention Archive. Factors that affect your risk of getting very sick from COVID-19. May 11, 2023. https://archive.cdc.gov/www_cdc_gov/coronavirus/2019-ncov/your-health/risks-getting-very-sick_1709314707.html. Accessed May 13, 2026.

13. Willis ZI, Oliveira CR, Abzug MJ, et al. Guidance for prevention and management of COVID-19 in children and adolescents: A consensus statement from the Pediatric Infectious Diseases Society Pediatric COVID-19 Therapies Taskforce. J Pediatric Infect Dis Soc. 2024 Mar 19;13(3):159-185. PMID: 38339996.

14. Centers for Disease Control and Prevention. COVID-19 treatment clinical care for outpatients. February 5, 2026. https://www.cdc.gov/covid/hcp/clinical-care/outpatient-treatment.html. Accessed May 13, 2026.