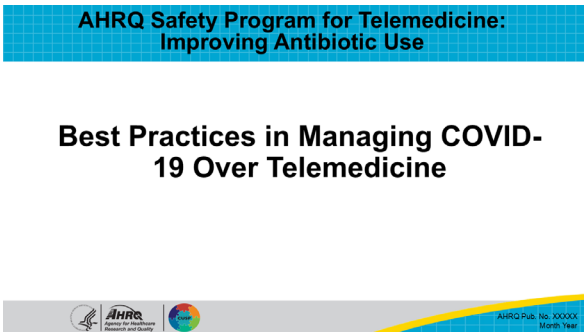
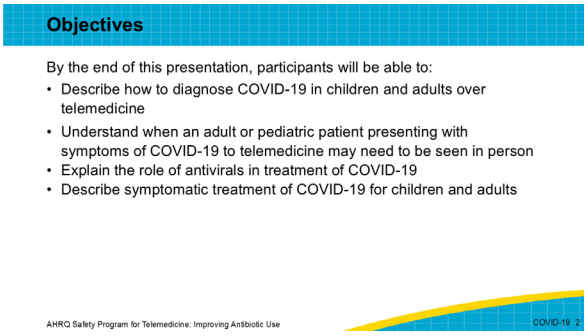
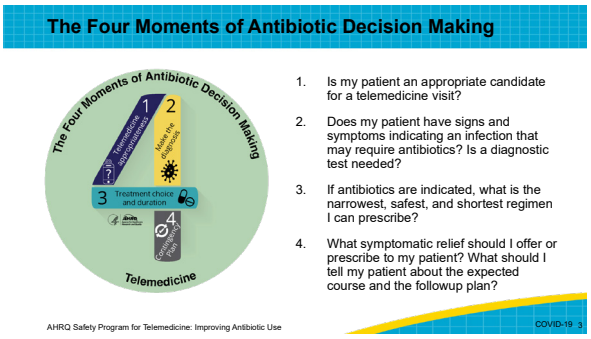
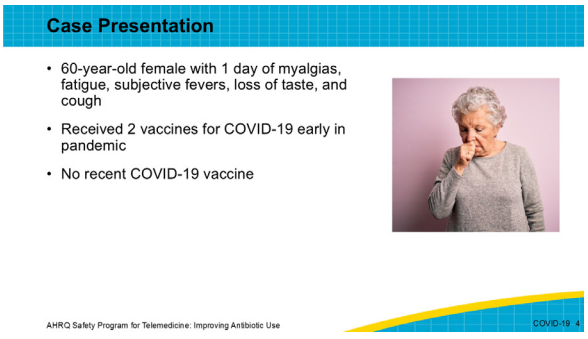
Best Practices in Managing COVID-19 Over Telemedicine

Slide Title and Commentary	Slide Number and Slide
Best Practices in Managing COVID-19 Over Telemedicine SAY: Welcome to the presentation titled, “Best Practices in Managing COVID-19 Over Telemedicine.”	**Slide 1** 
Objectives SAY: This presentation will use a clinical case–based format to discuss the approach to managing COVID-19. 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	**Slide 2** 

Slide Title and Commentary	Slide Number and Slide
The Four Moments of Antibiotic Decision Making SAY: This presentation will review a clinical case using the Four Moments of Antibiotic Decision Making framework. Briefly, this framework consists of the following moments: Moment 1: Is my patient an appropriate candidate for a telemedicine visit? Moment 2: Does my patient have signs and symptoms indicating an infection that may require antibiotics? Is a diagnostic test needed? Moment 3: If antibiotics are indicated, what is the narrowest, safest, and shortest regimen I can prescribe? Moment 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? As with other presentations in this series, we will be limiting discussion to adults and children 3 years of age and older.	**Slide 3** 
Case Presentation SAY: Let's start with a case. You log into your telemedicine portal to see a 60-year-old woman with no past medical history who reports 1 day of myalgias, fatigues, subjective fevers, loss of taste, and cough. It is March. While she had received two vaccines for COVID-19 early in the pandemic, she has not received any COVID-19 vaccine since. What should you recommend?	**Slide 4** 

Slide Title and Commentary	Slide Number and Slide
Moment 1: Telemedicine Appropriateness – 1 SAY: Let's start with Moment 1, which again is, "Is my patient an appropriate candidate for a telemedicine visit?" This moment identifies patients who likely should be referred for an in-person evaluation based on the clinical presentation. When evaluating a patient for COVID-19, the amount of circulating SARS-CoV-2, which causes COVID-19, is important to keep in mind. If there is a high local prevalence of COVID-19 or the patient has had a COVID-19 exposure, and the patient has common signs and symptoms of COVID-19 such as fever, cough, loss of taste or smell, or other respiratory symptoms, myalgia, fatigue, or headache, the probability that the patient has COVID-19 is high enough that they should perform an at-home COVID-19 test.	**Slide 5** **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?  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 5
COVID-19 Statistics SAY: The numbers of patients becoming seriously ill or dying from COVID-19 have decreased since the SARS-CoV-2 pandemic began in the United States in 2020. However, patients do continue to acquire and get sick from COVID-19. COVID-19 continues to spread and appears to spread more easily than influenza. Websites from the U.S. Centers for Disease Control and Prevention as well as state and local health departments list up-to-date data about COVID-19 prevalence.	**Slide 6** **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 AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 6
COVID-19 Presentation SAY: The most common symptoms of COVID-19 are fever, headache, sore throat, myalgias, fatigue, cough, headache, and rhinorrhea. Shortness of breath, vomiting, and diarrhea are also common. Loss of taste and smell also happens frequently with COVID-19. These symptoms can be quite difficult to distinguish from other respiratory viral infections such as influenza, so understanding whether COVID-19 as well as influenza or other respiratory viruses are circulating in the patient's community can be helpful.	**Slide 7** **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 AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 7

Slide Title and Commentary	Slide Number and Slide
Moment 1: Telemedicine Appropriateness – 2 SAY: COVID-19 can be suspected in patients presenting with common symptoms, especially when the virus is known to be circulating in the patient's community. 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. However, there are some patient groups that may require an in-person visit.	**Slide 8** **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  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 8
Moment 1: Telemedicine Appropriateness – 3 SAY: There are a range of symptoms for patients with COVID-19. These include asymptomatic infection—that is, a patient tests positive for SARS-CoV-2 using a virologic test but has no symptoms of COVID-19. Mild illness includes those with signs and symptoms of COVID-19, such as fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhea, or loss of taste and smell, but no shortness of breath or dyspnea. Moderate illness includes some evidence of lower respiratory disease during clinical assessment or imaging, but a normal oxygenation. Severe illness includes those who have decreased oxygenation, increased respiration rate, or lung infiltrates of at least 50 percent. Critical illness includes those with respiratory failure, septic shock, or multiple organ dysfunction. Patients with asymptomatic disease or mild disease could be evaluated over telemedicine. Patients with moderate illness, or some shortness of breath, should be evaluated in person for a full exam. Patients with severe or critical illness should be referred for emergency care.	**Slide 9** **Moment 1: Telemedicine Appropriateness – 3[4-6]** | Severity	Description	Triage
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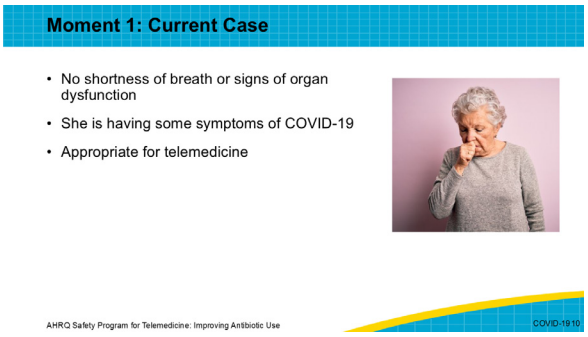
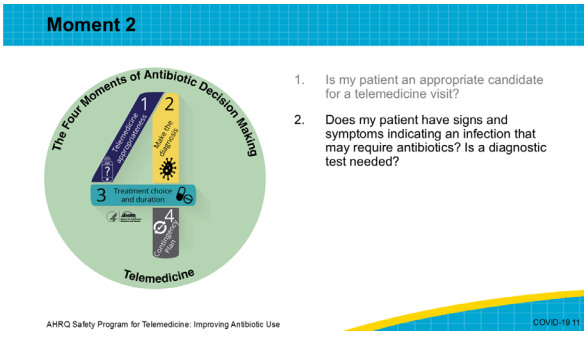
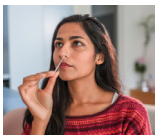
Asymptomatic infection	Tested positive, no symptoms	Telemedicine
Mild illness	Signs and symptoms but no shortness of breath	Telemedicine
Moderate illness	Lower respiratory disease but no hypoxia	In-person evaluation
Severe illness	Decreased oxygenation, tachypnea, or 50% infiltrate	Emergency care
Critical illness	Respiratory failure, sepsis, or organ dysfunction	Emergency care	 AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 9

Slide Title and Commentary	Slide Number and Slide
Moment 1: Current Case SAY: Ask the patient focused questions to determine if she has had mild shortness of breath, which would require an in-person exam, or severe shortness of breath or signs of organ dysfunction, which would require emergency care. In a brief assessment of the patient, there are no symptoms of shortness of breath or other signs or symptoms that would warrant an in-person evaluation or emergency department referral. Even if the practice uses a triage protocol to determine whether patients with symptoms of COVID-19 might be appropriate for telemedicine, the clinician may want to reconfirm these responses. The answer to Moment 1, “Is my patient an appropriate candidate for a telemedicine visit?” is “Yes.”	**Slide 10** 
Moment 2 SAY: Moment 2 asks: “Does my patient have signs and symptoms indicating an infection that may require antibiotics? Is a diagnostic test needed?”	**Slide 11** 

Slide Title and Commentary	Slide Number and Slide
Moment 2: Additional Signs and Symptoms – 1 SAY: Next, gather some additional history and perform a virtual physical examination. Questions to ask include the following: How long has she had these symptoms? Is she aware of any exposures to anyone with COVID-19, and if so, when? What were her symptoms at the beginning of the illness, and what are her symptoms now? Does she have a headache, and if so, what does it feel like? Has she noticed any wheezing? Does she have a sore throat? Is her cough productive? Has she taken her temperature? Does she notice any change in her sense of taste or sense of smell?	**Slide 12** **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?  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 12
Moment 2: Additional Signs and Symptoms – 2 SAY: The patient states that the symptoms started yesterday. Four days ago, she spent the afternoon with her adult son, who has since been diagnosed with COVID-19. Of note, incubation periods for COVID-19 have ranged from 3–4 days for more recent variants. There hasn't been much of a change in symptoms over the last day: she has myalgias and feels like she has a fever. She also has a mild frontal headache that got better with acetaminophen. She has noticed that her sense of taste is decreased and she does have a mild sore throat, but she is able to eat and drink normally. Her cough is dry. She does not feel short of breath, just tired.	**Slide 13** **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  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 13

Slide Title and Commentary	Slide Number and Slide
Moment 2: Virtual Physical Examination SAY: When evaluating a patient via telemedicine, components of a virtual physical exam can be completed with help from the patient. Refer to other presentations in the Toolkit to Improve Antibiotic Use in Telemedicine for suggestions about how to perform the virtual physical exam, such as the presentation titled, "Best Practices in Managing Viral Upper Respiratory Tract Infections (the Common Cold) Over Telemedicine." In this virtual physical exam, her nasal mucosa are pinkish red with no discharge, bleeding, or swelling, her oral mucosal membranes are moist, and her oropharynx is erythematous. There is no visible dyspnea or increased work of breathing. She is speaking in full sentences. She has no retractions. Her respiratory rate is 12 breaths per minute.	**Slide 14** **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  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 14
Moment 2: Diagnostic Testing – 1 SAY: In patients with COVID-19, diagnostic testing is important. It is always best to have the patient perform diagnostic testing for COVID-19 if possible. In patients with a clear exposure or consistent symptoms in the setting of a local outbreak where COVID-19 diagnostic testing is not available, COVID-19 could potentially be diagnosed without testing. However, in most cases, diagnostic testing is indicated to help patients make decisions about isolation and to aid in treatment decisions. Over-the-counter, point-of-care COVID-19 tests are available at many pharmacies, drugstores, grocery stores, and other locations. Many patients seen over telemedicine for COVID-19 can easily acquire these tests. Make sure the test is not expired. Patients can check the FDA website because the expiration date on the package may have been extended.	**Slide 15** **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  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-19 15

Slide Title and Commentary	Slide Number and Slide
Moment 2: Diagnostic Testing – 2	**Slide 16**

SAY:

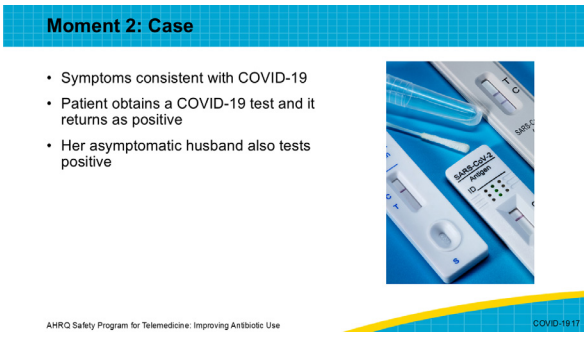
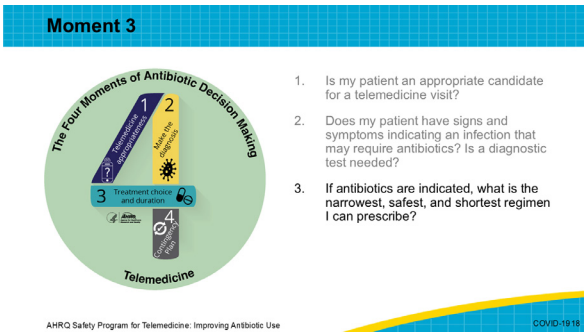
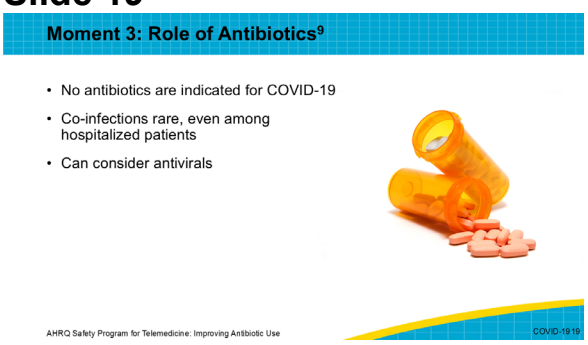
Most over-the-counter point-of-care tests available to patients are rapid antigen tests. These look for the presence of viral antigens with a nasal or nasopharyngeal swab and are helpful in diagnosing current infections. Patients can use these in their own home by following the instructions on the package insert. These tests are relatively easy to use, and results are typically available in 15 to 30 minutes. Point-of-care COVID-19 antigen tests are highly specific, but sensitivity may be low, particularly early in the infection, with certain variants, or among asymptomatic patients. If there is a high index of suspicion for infection, the patient should repeat the test in 24 hours or perform a nucleic acid amplification test.

There are some over-the-counter point-of-care combination tests that patients can use in the home to test for COVID-19 and influenza A or B or even respiratory syncytial virus or RSV. If both influenza and COVID-19 are being considered, a combined test may be a good option for patients to use at home.

COVID-19 nucleic acid amplification tests are also available but not over the counter. Patients typically have to be referred for this testing, such as to a clinic. These are available both as point-of-care and laboratory-based tests. These tests test for the presence of RNA and can help diagnose current infection. Many patients may have detectable RNA for up to 90 days after an infection, so these tests may not be particularly helpful if the patient has recently recovered from COVID-19. Nucleic acid amplification tests can use nasal, nasopharyngeal, oropharyngeal, sputum, or saliva samples. Sensitivity is high for laboratory-based tests and moderate-to-high for point-of-care tests. Nucleic acid amplification tests are highly specific.

Consider asking patients to perform or complete a COVID-19 test prior to a telemedicine visit where COVID-19 is being considered.

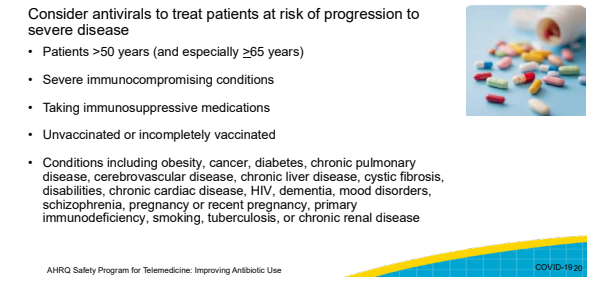


Slide Title and Commentary	Slide Number and Slide
Moment 2: Case SAY: Getting back to the patient, her symptoms and exposure are highly consistent with COVID-19. She has a COVID-19 point-of-care test kit available, and her test result is positive. She lives with her husband who also undergoes point-of-care testing although he has no symptoms. Her husband tests positive as well.	**Slide 17** 
Moment 3 SAY: Let's discuss Moment 3, "If antibiotics are indicated, what is the narrowest, safest, and shortest regimen I can prescribe?"	**Slide 18** 
Moment 3: Role of Antibiotics SAY: Antibiotics are not indicated to treat COVID-19. Co-infections with bacteria are very rare even among hospitalized patients. The patient in this presentation does not need antibiotics. However, it is worth considering whether she might need antiviral treatment for COVID-19.	**Slide 19** 

Slide Title and Commentary	Slide Number and Slide
Moment 3: Treatment in Adults – 1	**Slide 20**

SAY:

For adults or children who are at high risk of progressing to severe disease, several antiviral options may reduce the risk of hospitalization and death. The Infectious Diseases Society of America and American College of Physicians Treatment Guidelines recommend using antivirals to treat certain groups of outpatients to prevent progression to severe disease, hospitalization, or death. Risk of severe disease increases in patients over the age of 50, but is particularly increased in those at least 65 years of age. Patients who have severe immunocompromising conditions or are taking immunosuppressive medications are also at risk. Adult patients who have not received a COVID-19 vaccine or were incompletely vaccinated, or who had last been vaccinated long before are also at risk. Certain conditions also increase the risk of progression to severe disease. In adults, these conditions include those listed on this slide.



Slide Title and Commentary	Slide Number and Slide
Moment 3: Treatment in Adults – 2	**Slide 21**

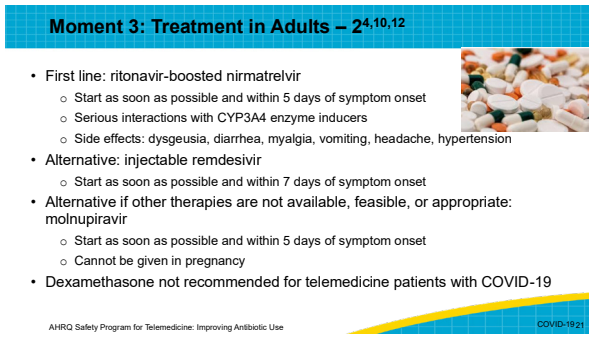
SAY:

For adults who are at high risk of progressing to severe COVID-19, consider starting treatment. The Infectious Diseases Society of America recommends that the first choice be ritonavir-boosted nirmatrelvir, and that it be started as soon as possible and within 5 days of symptom onset. Consider drug-drug interactions when starting this medication, as ritonavir can cause serious interactions with CYP3A4 enzyme inducers. Common side effects include dysgeusia, diarrhea, myalgia, vomiting, headache, and hypertension.

If ritonavir-boosted nirmatrelvir is not possible, injectable remdesivir may be an option. It should be started as soon as possible and within 7 days of symptom onset.

Molnupiravir is considered an alternative therapy for use in adults when preferred therapies are not available, feasible, or clinically appropriate. Molnupiravir should be started as soon as possible within 5 days of symptom onset. Please note that this medication should not be given in pregnancy or breastfeeding, and men of reproductive potential who are sexually active with women of childbearing potential should be counseled to use a reliable method of contraception during treatment and for at least 3 months after the last dose of molnupiravir.

Note that dexamethasone is specifically NOT recommended in treatment of COVID-19 in outpatients including those seen over telemedicine.

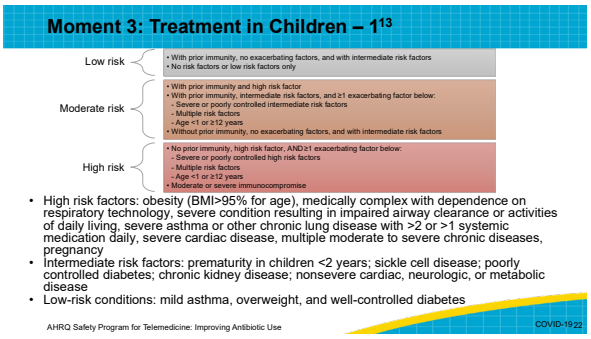


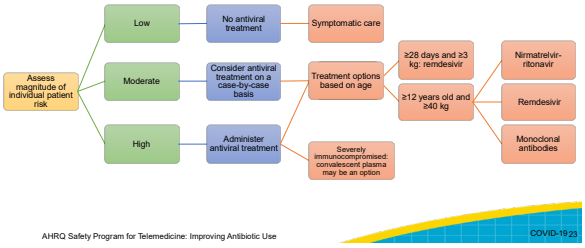
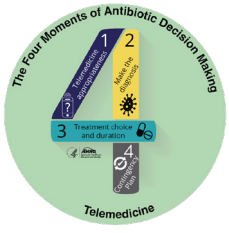
Slide Title and Commentary	Slide Number and Slide
Moment 3: Treatment in Children – 1	**Slide 22**

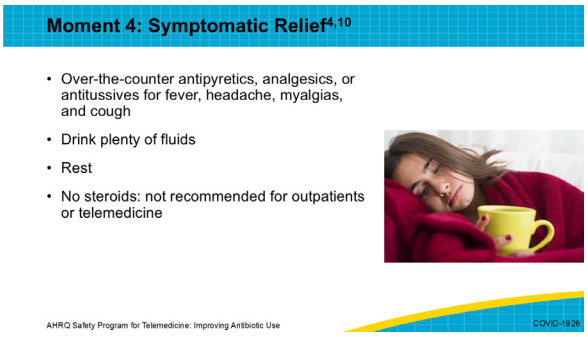
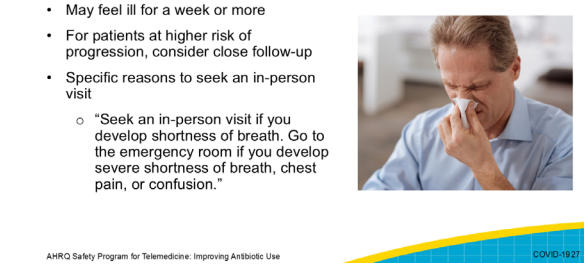
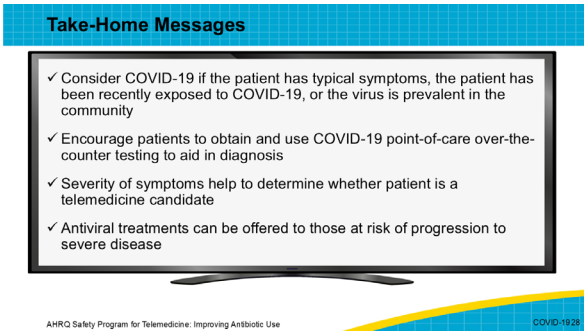
SAY:

In general, most children experience a mild course of illness with COVID-19. Most children with COVID-19 will not require any specific therapy. Children with cardiac disease, neurologic disorders, prematurity in young infants, diabetes, severe obesity, chronic lung disease, feeding tube dependence, and immunocompromised status may be at higher risk for progression to severe disease.

The Pediatric Infectious Diseases Society Pediatric COVID-19 Therapies Taskforce has published a table to aid in identifying children who may be at higher risk of progression to severe COVID-19. Children who are moderately or severely immunocompromised are considered high risk. Children who are not up to date with COVID-19 vaccination and have a high risk factor, along with exacerbating factors, are also considered at high risk. If patients with a high risk factor are up to date with vaccinations, they are considered moderate risk. Patients with prior immunity, an intermediate risk factor, and at least one exacerbating factor are also at moderate risk. Patients without prior immunity, no exacerbating factors, and intermediate risk factors are also at moderate risk. Finally, patients at low risk of progression of COVID include those with no risk factors or low risk factors such as those on the slide, or with prior immunity, no exacerbating factors, and intermediate risk factors.



Slide Title and Commentary	Slide Number and Slide
Moment 3: Treatment in Children – 2 SAY: In patients at low risk of disease progression, the Pediatric Infectious Diseases Society recommends against antiviral treatment for COVID-19. In children at moderate risk of disease progression, the Pediatric Infectious Diseases Society suggests considering antiviral treatment on a case-by-case basis. In children at high risk of disease progression, antiviral therapy could be considered. If you have decided to provide antiviral treatment in a child at moderate or high risk of disease progression, the Pediatric Infectious Diseases Society has published guidelines. In children at least 28 days of age, injectable remdesivir is an option. In children at least 12 years of age who weigh at least 40 kilograms, the preferred treatment is ritonavir-boosted nirmatrelvir within 5 days of symptom onset. If ritonavir-boosted nirmatrelvir is not possible, use remdesivir within seven days of symptom onset, or a monoclonal antibody if available. Molnupiravir is only approved in those at least 18 years of age. Convalescent plasma may be an option for those who are immunocompromised and at high risk for severe COVID-19.	**Slide 23** **Moment 3: Treatment in Children – 2[13]**  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-1923
Moment 3: Our Patient SAY: The patient in this presentation is a 60-year-old healthy patient with mild disease. She has had symptoms for 1 day. Given her age and the fact that she is not up to date with her vaccinations, she is at some risk of progression to more severe disease. She can be offered ritonavir-boosted nirmatrelvir, or if not available, remdesivir.	**Slide 24** **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  AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-1924
Moment 4 SAY: Now we're at Moment 4, which is: "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?"	**Slide 25** **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? AHRQ Safety Program for Telemedicine: Improving Antibiotic Use COVID-1925

Slide Title and Commentary	Slide Number and Slide
Moment 4: Symptomatic Relief Treatment SAY: Symptomatic treatment should be offered to all patients, adults and children, presenting with COVID-19. This can include over-the-counter antipyretics, analgesics, or antitussives for fever, headache, myalgias, and cough. Steroids are not recommended for outpatients or telemedicine patients. Patients should drink plenty of fluids and should be encouraged to rest.	**Slide 26** 
Moment 4: Expectations and Followup Plan SAY: Patients should be aware that they will likely feel ill for a week or more. For patients at higher risk for progression to severe disease, consider closely following these patients to ensure their recovery, perhaps through another telemedicine appointment or a patient portal check-in. For all patients, provide specific reasons to seek an in-person appointment. For example, statements such as the following can be considered: “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.” These symptoms may be signs of worsening infection that should be evaluated and treated.	**Slide 27** 
Take-Home Messages SAY: In summary, the most important information to know when considering a diagnosis of COVID-19 is whether the patient has typical symptoms and whether the patient has either been recently exposed to COVID-19 or the virus is prevalent in the patient’s community. COVID-19 testing is available over the counter as point-of-care testing and should be recommended to patients to perform in the home. Severity of symptoms can help determine whether a patient should be evaluated over telemedicine or in person, or seek emergency care. Antiviral treatments should be offered to those at risk of progression to severe disease.	**Slide 28** 

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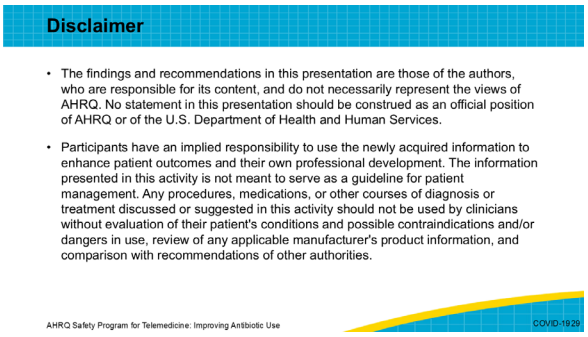
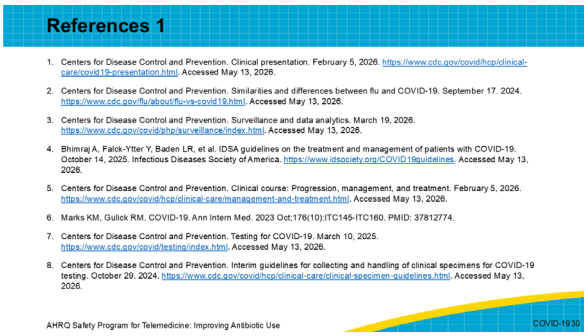
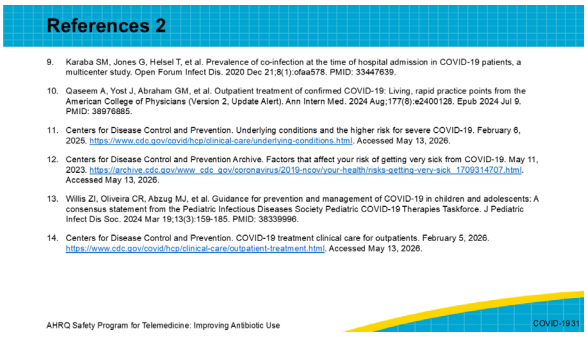
Disclaimer SAY: Please review this disclaimer.	**Slide 29** 
References 1 SAY: Here are the references.	**Slide 30** 
References 2 SAY: Here are the references.	**Slide 31** 

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