

AHRQ Safety Program for Telemedicine: Improving Antibiotic Use

Best Practices in Managing Respiratory Syncytial Virus Over Telemedicine

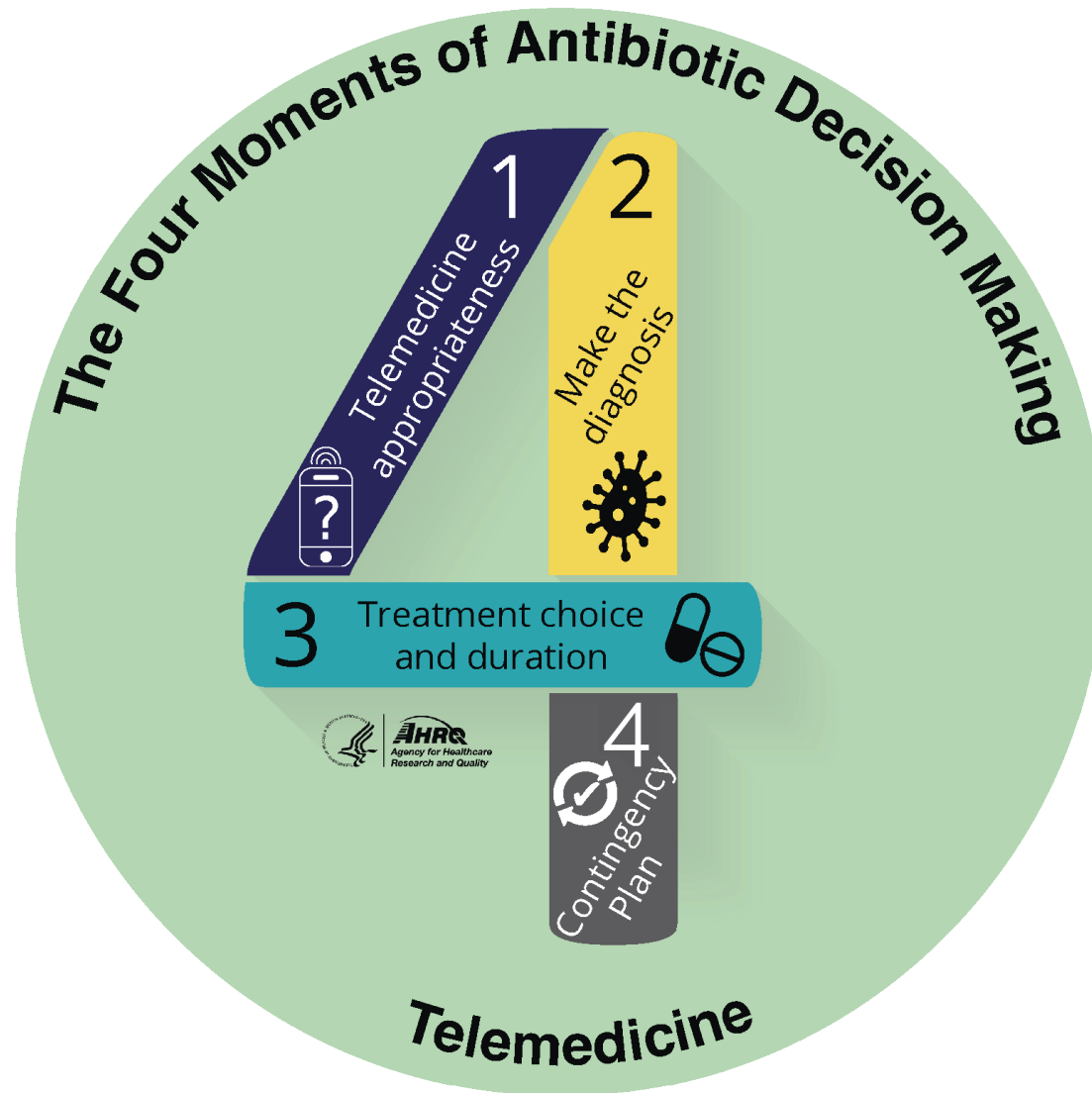


Objectives

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

- Describe how to assess for respiratory syncytial virus (RSV) in children and adults over telemedicine
- Explain treatment options for RSV for children and adults
- Explain why antibiotics are not indicated for RSV
- Learn about RSV vaccination recommendations 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: Adult

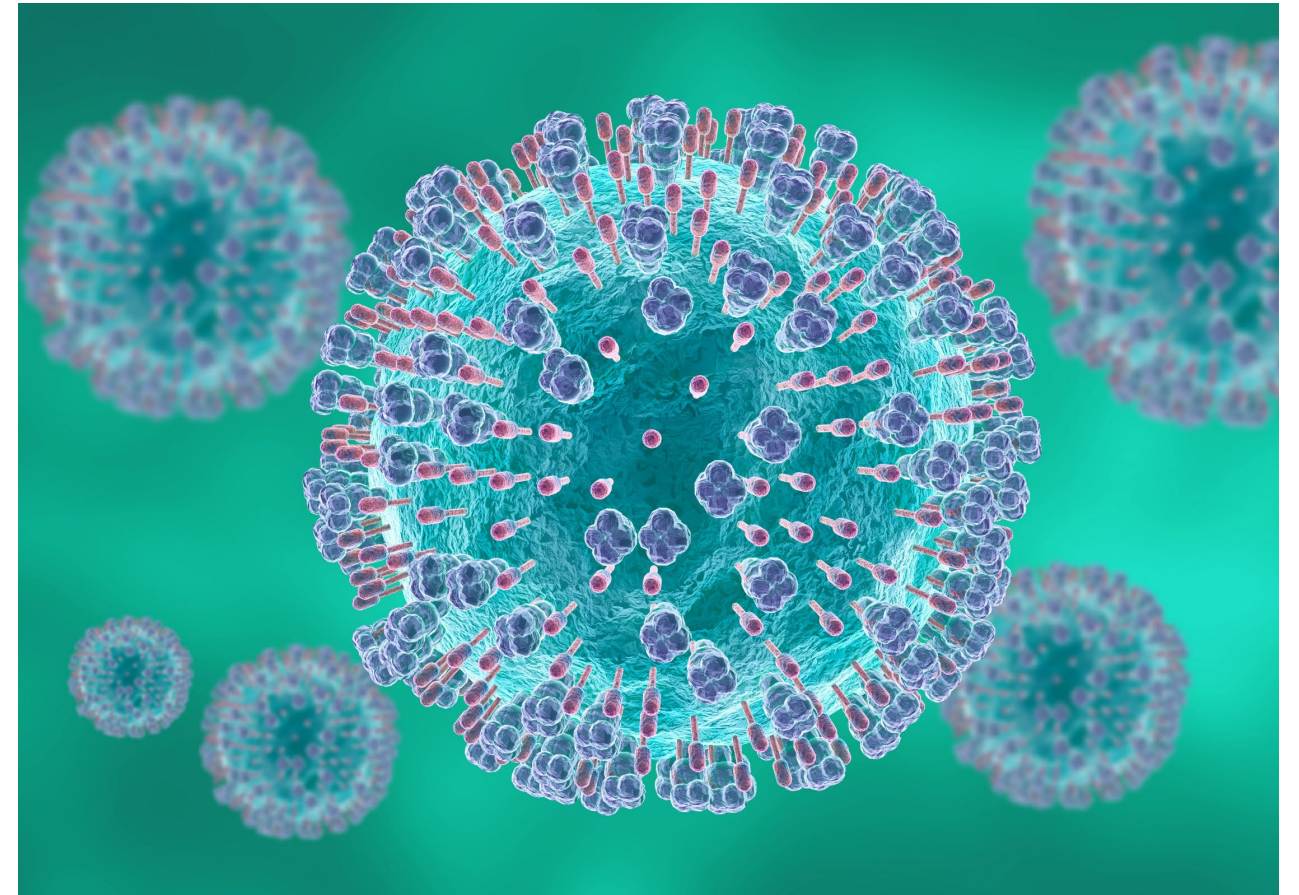
- 59-year-old male with 2 days of rhinorrhea, cough, and low-grade fevers
- Recently taking care of his 2-month-old granddaughter
- Granddaughter was diagnosed with RSV and needed to be hospitalized yesterday
- Inquiring if he should be receiving antibiotics



RSV Epidemiology¹

- RSV is a respiratory virus that causes seasonal outbreaks
 - November to April in the north
 - Some southern states and Puerto Rico: May to September
- Direct contact is the most common route of transmission
 - Can also spread through large droplets

<https://www.cdc.gov/rsv/hcp/clinical-overview/index.html>



RSV Infection in Adults

- Common symptoms in adults²
 - Cough (<95%)
 - Nasal congestion or rhinorrhea (<78%)
 - Sore throat (<64%)
 - Fever (<50%)
- May progress to lower respiratory tract symptoms²
 - Elderly (≥ 75 years)
 - Severe immune compromise (e.g., solid organ transplant, neutropenia, prolonged corticosteroid use)
 - Underlying cardiac disease (e.g., congestive heart failure)
 - Underlying lung disease (e.g., asthma, chronic obstructive pulmonary disease)
- <1% of adults require hospitalization³⁻⁴

Moment 1: Telemedicine Appropriateness (Adults)

- Is my patient an appropriate candidate for a telemedicine visit?
 - <75 years⁵
 - Relatively mild respiratory symptoms
 - No severe immune compromise
- Proceed with a telemedicine evaluation



Moment 2: Patient History and Physical Exam (Adults)

Does my patient have signs and symptoms indicating an infection that may require antibiotics?

- Well appearing without tachycardia or tachypnea
- Recent RSV exposure
- Normal respiratory rate without increased work of breathing
- No indication for antibiotics



Moment 2: Diagnostic Testing (Adults)

Is a diagnostic test needed?

- **No respiratory viral testing necessary** for this patient who would be unlikely to qualify for antiviral therapy (e.g., for influenza or COVID-19)



Moment 2: Diagnostic Testing (Adults) – 2

If a decision is made to perform diagnostic testing:

- Two methods for RSV testing, both of which involve swabbing the nasopharynx or throat
 - RT-PCR (sensitivity 85–100%)⁶⁻⁷
 - Rapid antigen testing (sensitivity $\leq 70\%$)⁸⁻⁹
 - Rapid antigen testing available for at-home use with RSV, influenza A, influenza B, COVID-19¹⁰



Moment 3: Role of Antibiotics (Adults)

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

- **No antibiotics** are indicated for RSV infections
- Ribavirin is an option for adult patients with hematologic malignancies after an in-person evaluation¹¹



Moment 4: Symptomatic Relief (Adults)¹²⁻¹⁵

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?

- Acetaminophen and/or nonsteroidal anti-inflammatory drugs
- Intranasal decongestants, oral decongestants, antihistamine-decongestant combinations, and antihistamine-decongestant-analgesic combinations can be offered but have limited benefit
- Albuterol (only for patients with airflow obstruction)

Moment 4: Expectations & Followup Plan (Adults)

- Symptoms worst on day 3–5 of illness
- Symptoms last for up to two weeks
- Viral shedding ~3–8 days
- Seek in-person care if—
 - High fever (above 102°F)
 - Confusion
 - Wheezing
 - Shortness of breath
 - Not improving or worsening symptoms



RSV Vaccine (Adults)¹⁶⁻¹⁹

Vaccine	Age Range (years)	Pregnant Women
RSVPreF3 (Arexvy)	75 and older 50–74 with risk factors*	No
RSVPreF (Abrysvo)	75 and older 50–74 with risk factors*	Single dose weeks 32–36 of pregnancy between Sep–Jan
mRNA-1345 (Mresvia)	75 and older 50–74 with risk factors*	No

*Risk factors: chronic heart or lung disease, immune compromise, end stage renal disease, diabetes with complications, cirrhosis, neuromuscular conditions causing impaired airway clearance, severe obesity (BMI≥40 kg/m²), nursing home resident, etc.

- One-dose vaccine
- Preferred to receive vaccine in late summer or early fall but it is not an annual vaccine
- Also recommended for immunocompromised patients ≥18 years (solid organ transplant, stem cell transplant, primary immunodeficiency, hematologic malignancy, chemotherapy, B-cell depletion, HIV)

Case Presentation: Children

- 2-year-old girl born full-term presents in November with 3 days of rhinorrhea, “noisy” breathing, and low-grade fever
- Drinking fluids without difficulty
- Playing
- Father would like to know if his daughter needs antibiotics



RSV Infection in Children²⁰⁻²¹

- Most common cause of lower respiratory tract infection (i.e., bronchiolitis) in children <1 year
 - Upper respiratory infection may progress to wheezing, increased work of breathing, or apnea
- Hospitalization rates highest among infants <6 months
 - Hospitalization in older children usually limited to those with underlying medical problems (e.g., severe asthma, neurologic disease, immunodeficiency)
- Almost all children are infected by 2 years of age; reinfection common
- Infection of infants most often follows infection of older siblings

Moment 1: Telemedicine Appropriateness (Children)

Is my patient an appropriate candidate for a telemedicine visit?

- Risk factors for an in-person consultation
 - <6 months of age
 - Practice-specific criteria for age at which you see young children in person (for example, under 2 or 3 years)
 - Underlying lung disease (e.g., chronic lung disease, bronchopulmonary dysplasia, cystic fibrosis, severe asthma)
 - Congenital heart disease
 - Trisomy 21
 - Immunocompromised patients (e.g., severe combined immunodeficiency, leukemia, or hematopoietic cell or lung transplant)
- You proceed with the patient's evaluation

Moment 2: Patient History (Children)

Does my patient have signs and symptoms indicating an infection that may require antibiotics? Is a diagnostic test needed?

- Careful re-review of information in the triage form
- Review of hydration and activity level
- Review of signs of respiratory distress



Moment 2: Physical Exam (Children)

- No tachypnea
- No head bobbing
- No nasal flaring
- No extra use of neck or chest muscles (i.e., retractions)



Moment 2: Diagnostic Testing (Children)

- If it is RSV season and the child is presenting with symptoms suggestive of RSV infection, the likelihood that the child has RSV is high, **so testing is unnecessary**



Moment 2: Diagnostic Testing (Children) – 2

- For previously healthy young children with bronchiolitis, testing for RSV does not impact management
 - Test patients with immune compromise because they may qualify for ribavirin



Moment 3: Role of Antibiotics (Children)

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

- No indication for antibiotics



Moment 4: Symptomatic Relief (Children)

What symptomatic relief should I offer or prescribe to my patient?

- Hydration goals²²
 - 1–3 years old: 4 cups of fluids per day
 - 4–8 years old: 5 cups of fluids per day
 - ≥7–8 years old: 7–8 cups of fluids per day
- Supportive care
 - Nasal saline drops or spray followed by bulb suctioning for younger infants
 - Ibuprofen or acetaminophen
 - Cool-mist humidifiers for cough and congestion
- Not helpful
 - Avoid cough and cold medicines and multi-ingredient products for children <6 years because of potential harm (e.g., apnea and serious overdoses)²³
 - Steroids, inhalers, chest physiotherapy

Moment 4: Expectations & Followup Plan (Children)

What should I tell my patient about the expected course and the followup plan?

- Symptoms worst on day 3–5 of illness; symptoms can linger for up to 2 weeks
- Return to care if—
 - High fever (above 102°F)
 - Lethargy
 - Refusal to drink fluids
 - Wheezing
 - Shortness of breath



Monoclonal Antibodies²⁴⁻²⁶

Monoclonal Antibody	Recommended for
Nirsevimab (brand name Beyfortus) ²⁴	All infants whose mothers were not vaccinated during pregnancy regardless of RSV risk factors
Clesrovimab (brand name Enflonsia) ²⁵	Select infants at increased risk meeting AAP criteria (if nirsevimab is unavailable)

- All infants <8 months born during RSV season or entering first RSV season should receive one dose of nirsevimab or clesrovimab if the mother did not receive RSV vaccination during pregnancy
- Infants 8–19 months at increased risk for severe RSV should receive a second dose of nirsevimab upon entry into their second RSV season (including those who received clesrovimab instead of nirsevimab in their first RSV season)²⁶

<https://www.cdc.gov/rsv/infants-young-children/index.html>

Take-Home Messages

- ✓ RSV can cause infection in adults but most adults are not at risk for severe disease
- ✓ RSV can also cause significant disease in infants, particularly those <6 months or with underlying risk factors for severe illness
- ✓ Antibiotics are not indicated for RSV infections
- ✓ Supportive care is the cornerstone of treatment
- ✓ Offer the RSV vaccine to elderly patients and pregnant women meeting criteria

Disclaimer

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