# Policy Statement—Modified Recommendations for Use of Palivizumab for Prevention of Respiratory Syncytial Virus Infections

## TARGET POPULATION

<table>
<thead>
<tr>
<th>Decidable (Y or N)</th>
</tr>
</thead>
</table>

### Eligibility

#### Inclusion Criterion
- Pediatric patients who are at increased risk of severe disease

#### Exclusion Criterion

## RECOMMENDATIONS

### Recommendation

* Criteria 1. Infants with CLD (Page 4, Column 1, Paragraph 3)

**Conditional:** 1.1 Infants with CLD

- **IF**
  - Chronological Age
    - **Value:** < 24 months
  - CLD
    - **Value:** TRUE
  - Receives medical therapy
    - **Value:** TRUE
  - Onset of RSV
    - **Value:** If Southeast Florida - July 1 If Location = North-central or southwest Florida - 9/15 Else 11/1

- **THEN**
  - should receive a maximum of 5 doses.

### Evidence Quality:

**Quality of Evidence = I**

The efficacy of palivizumab has been evaluated in 2 multicenter, placebo controlled, randomized clinical trials, both of which used a primary endpoint of reduction in hospitalization attributable to RSV infection. The RSV-IMpact trial evaluated children 24 months of age or younger with CLD who required continuing medical therapy (supplemental oxygen, bronchodilator, or diuretic or corticosteroid therapy) within the previous 6 months.
and children born at 35 weeks’ gestation or less who were 6 months of age or younger at the start of the RSV season. Prophylaxis resulted in a 55% overall decrease in the rate of RSV-related hospitalization (10.6% and 4.8% in recipients of placebo versus palivizumab, respectively [P .001]).

**Strength of Recommendation:** Strength of Recommendation = A

**Reason:** The primary benefit of immuno prophylaxis is a decrease in the rate of RSV associated hospitalization.

**Logic:** If (Chronological Age < 24 months) AND (CLD = TRUE AND Receives medical therapy = TRUE) AND (Onset of RSV <= 6 months) Then May benefit from prophylaxis Receive a maximum of 5 doses

**Conditional:** 1.2 Severe CLD

<table>
<thead>
<tr>
<th>IF Conditional 1.1</th>
<th>Decidable</th>
<th>Vocab</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value:</strong> TRUE</td>
<td>Received Synagis Prior Year</td>
<td></td>
</tr>
<tr>
<td><strong>Value:</strong> TRUE</td>
<td>Severe CLD</td>
<td></td>
</tr>
</tbody>
</table>

**THEN**

may benefit from prophylaxis during a second RSV season.

Individual patients may benefit from decisions made in consultation with neonatologists, pediatric intensivists, pulmonologists, or infectious disease specialists (AI).

**Evidence Quality:** Quality of Evidence = III (Evidence from opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.)"Data are limited regarding the effectiveness of palivizumab during the second year of life."

**Strength of Recommendation:** Strength = C

**Reason:** The primary benefit of immuno prophylaxis is a decrease in the rate of RSV associated hospitalization. Patients with the most severe CLD who continue to require medical therapy may benefit from prophylaxis during a second RSV season.

**Logic:** If Conditional 1.1 = TRUE AND Received Synagis Prior Year = TRUE AND
Severe CLD Then May benefit from prophylaxis during a second RSV season. Individual patients may benefit from decisions made in consultation with neonatologists, pediatric intensivists, pulmonologists, or infectious disease specialists (AI).

Recommendation
* Criteria 2. Infants Gestational Age < 32 weeks (Page 4, Column 2, Paragraph 2)

**Conditional:** 2.1 Infants born at 28 weeks’ gestation or earlier may benefit from prophylaxis during the RSV season whenever that occurs during the first 12 months of life.

**IF**
Gestational Age

**Value:** <= 28 Weeks
Chronological Age

**Value:** < 12 Months
Onset of RSV

**Value:** TRUE

**THEN**
May benefit from prophylaxis
Receive maximum of 5 doses
Receive all 5 doses

Evidence Quality:

Strength of Recommendation:

Reason:

Logic: If (Gestational Age <= 28 Weeks) AND (Chronological Age < 1 year) AND (Onset of RSV) Then May benefit from prophylaxis Receive maximum of 5 doses Receive all 5 doses

**Conditional:** 2.2 Infants born at 29 to 32 weeks’ gestation (31 weeks 6 days) may benefit most from prophylaxis up to 6 months of age.
**IF**

<table>
<thead>
<tr>
<th>Decidable</th>
<th>Vocab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational Age</td>
<td></td>
</tr>
<tr>
<td>Value: &gt;= 29 weeks AND &lt;= 32 weeks</td>
<td></td>
</tr>
<tr>
<td>Chronological Age</td>
<td></td>
</tr>
<tr>
<td>Value: &lt;= 6 months</td>
<td></td>
</tr>
<tr>
<td>Onset of RSV</td>
<td></td>
</tr>
<tr>
<td>Value: If Location = Southeast Florida Then July 1 ElseIf Location = North-central or southwest Florida Then September 15 Else Then November 1</td>
<td></td>
</tr>
</tbody>
</table>

**CLD**

**THEN**

<table>
<thead>
<tr>
<th>Decidable</th>
<th>Vocab</th>
</tr>
</thead>
<tbody>
<tr>
<td>May benefit from prophylaxis</td>
<td></td>
</tr>
<tr>
<td>Receive maximum of 5 doses</td>
<td></td>
</tr>
<tr>
<td>Receive all 5 doses</td>
<td></td>
</tr>
</tbody>
</table>

**Evidence Quality:**

**Strength of Recommendation:**

**Reason:**

**Logic:**

If (Gestational Age >= 29 weeks AND Gestational Age <= 31 weeks 6 days) AND (Chronological Age < 6 months) AND (Onset of RSV = TRUE) Then May benefit from prophylaxis Receive maximum of 5 doses Receive all 5 doses

**Recommendation**

* Criteria 3. Infants Gestational Age > 32 & < 35 weeks (Page 4, Column 2, Paragraph 3)

**Conditional:** 3.1 Prophylaxis may be considered for infants from 32 through less than 35 weeks’ gestation (defined as 32 weeks 0 days through 34 weeks 6 days) who are born less than 3 months before the onset or during the RSV season and for whom at least 1 of the 2 risk factors is present.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attends Childcare</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td>Other children &lt; 5 years in household.</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td>Onset of RSV Season</td>
<td></td>
<td>If Location = Southeast Florida Then July 1 ElseIf Location = North-central or southwest Florida Then September 15 Else Then November 1</td>
</tr>
</tbody>
</table>

**Evidence Quality:**

**Strength of Recommendation:**

**Reason:** Epidemiologic data suggest that RSV infection is more likely to occur and more likely to lead to hospitalization for infants in this gestational-age group when at least 1 of the following 2 risk factors is present:

**Logic:** If (Gestational Age >= 32 weeks AND Gestational Age <= 35 weeks) AND (Chronological Age <= 90 Days) AND (Onset of RSV Season) AND (Attends Childcare = TRUE OR Other children < 5 years in household = TRUE) Then Prophylaxis may be considered Receive prophylaxis only until they reach 3 months of age Receive a maximum of 3 monthly doses.

**Recommendation**

*Criteria 4. Infants with congenital abnormalities of the airway or neuromuscular disease.*

**Conditional:** 4.1 Immunoprophylaxis may be considered for infants who have either significant congenital abnormalities of the airway or a neuromuscular condition that compromises handling of respiratory tract secretions.

**IF**

Chronological Age

**Value:** < 1 Year

Congenital abnormalities of the airway

**Value:** TRUE
Neuromuscular condition

THEN
Immunoprophylaxis may be considered

Receive a maximum of 5 doses of palivizumab during the first year of life

Evidence Quality:

Strength of Recommendation:

Reason:
Logic: If Chronological Age < 1 Year AND (Congenital abnormalities of the airway = TRUE) OR Neuromuscular condition = TRUE) Then Immunoprophylaxis may be considered Receive a maximum of 5 doses during the first year of life

Recommendation
* Criteria 5. Infants and children with CHD:
  Conditional: 5.1 Infants and children with CHD: Children who are 24 months of age or younger with hemodynamically significant cyanotic or acyanotic CHD may benefit from palivizumab prophylaxis.5

IF
Chronological Age

Value: \(\leq 24\) Months

CHD

Value: TRUE

CHD Medication

Value: TRUE

Pulmonary hypertension

Value: TRUE

Cyanotic heart disease

Value: TRUE

THEN
may benefit from palivizumab prophylaxis

Evidence Quality:
Strength of Recommendation:

Reason:

Logic: If (Chronological Age <= 24 months) AND (CHD = TRUE) AND (CHD Medication = TRUE OR Pulmonary hypertension = TRUE OR Cyanotic heart disease = TRUE) Then may benefit from palivizumab prophylaxis

Conditional: 5.2 After surgical procedures that use cardiopulmonary bypass

IF Conditional 5.1

Value: TRUE Surgical procedure that use cardiopulmonary bypass

Value: TRUE THEN a postoperative dose of palivizumab (15 mg/kg) should be administered as soon as the patient is medically stable (AI).

Evidence Quality:

Strength of Recommendation:

Reason: a mean decrease in palivizumab serum concentration of 58% was observed after surgical procedures that use cardiopulmonary bypass

Logic: If Conditional 5.1 = TRUE AND Surgical procedure that use cardiopulmonary bypass Then A postoperative dose of palivizumab (15 mg/kg) should be administered as soon as the patient is medically stable (AI).

Conditional: 5.3 Infants with CHD not at increased risk

IF with hemodynamically insignificant heart disease (eg, secundum atrial septal defect, small ventricular septal defect, pulmonic stenosis, uncomplicated aortic stenosis, mild coarctation of the aorta, and patent ductus arteriosus); with lesions adequately corrected by surgery, unless they continue to require medication for congestive heart failure;
with mild cardiomyopathy who are not receiving medical
therapy for the condition.

**THEN**
are not at increased risk of RSV and generally should not
receive immunoprophylaxis

**Evidence Quality:**

**Strength of
Recommendation:**

**Reason:**

**Logic:**
If with hemodynamically insignificant heart disease (eg, secundum atrial septal
defect, small ventricular septal defect, pulmonicstenosis, uncomplicated aortic
stenosis, mild coarctation of the aorta, and patent ductus arteriosus); OR with
lesions adequately corrected by surgery, unless they continue to require
medication for congestive heart failure OR with mild cardiomyopathy who are
not receiving medical therapy for the condition. Then are not at increased risk
of RSV and generally should not receive immunoprophylaxis

**Recommendation**
* Criteria 6. Immunocompromised children
  
  **Conditional:** 6.1 Immunocompromised

  **IF**
  Severe immunodeficiency

  **Value:** TRUE

  **THEN**
  May benefit from prophylaxis

**Evidence Quality:** Palivizumab prophylaxis has not been evaluated in randomized trials in
immunocompromised children. Although specific recommendations for
immunocompromised children cannot be made, infants and young children with
severe immunodeficiency (eg, severe combined immunodeficiency or advanced
AIDS) may benefit from prophylaxis (CIII).

**Strength of
Recommendation:**

**Reason:**

**Logic:** If Severe immunodeficiency Then May benefit from prophylaxis
Recommendation  
* Criteria 7. Patients with cystic fibrosis  

**Imperative:**  
7.1 A recommendation for routine prophylaxis in patients with cystic fibrosis cannot be made

**Criteria 7. Patients with cystic fibrosis**

**IF**

**Inclusion Criterion:**  
· Pediatric patients who are at increased risk of severe disease

**Exclusion Criterion:**

**THEN**


**Strength of Recommendation:**  

**Reason:**

**Logic:**

**Cost:**

Recommendation  
* Criteria 8. Special situations  

**Conditional:**  
8.1) Breakthrough RSV infection

**IF**

Qualifies for prophylaxis  
is receiving palivizumab immuno prophylaxis  
Breakthrough RSV infection

**THEN**

Continue until a maximum number of doses have been administered
3 doses have been administered to infants in the 32 weeks’ 0 days’ through 34 weeks’ 6 days’ gestational-age group.

Maximum of 5 doses have been administered to infants with CHD, CLD, or preterm birth before 32 weeks’ gestation.

Evidence Quality:

Strength of Recommendation:

Reason: This recommendation is based on the observation that infants at high risk may be hospitalized more than once in the same season with RSV lower respiratory tract disease and the fact that more than 1 RSV strain often cocirculates in a community (CIII).

Logic: If Is receiving palivizumab immuno prophylaxis = TRUE AND Breakthrough RSV infection = TRUE Then Continue until a maximum number of doses have been administered 3 doses have been administered to infants in the 32 weeks’ 0 days’ through 34 weeks’ 6 days’ gestational-age group. Maximum of 5 doses have been administered to infants with CHD, CLD, or preterm birth before 32 weeks’ gestation.

Conditional: 8.2) Hospitalized infants who qualify for prophylaxis during the RSV season

IF
Hospitalized
Onset of RSV

Value: If Location = Southeast Florida Then July
Else If Location = North-central or southwest Florida Then September 15
Else Then November 1

THEN
receive the first dose of palivizumab 48 to 72 hours before discharge or promptly after discharge (CIII).

Evidence Quality:

Strength of Recommendation:

Reason:

Logic: If Conditional 1.1 - 5.3 = TRUE AND Hospitalized = TRUE AND Onset of RSV = TRUE Then receive the first dose of palivizumab 48 to 72 hours before discharge or promptly after discharge (CIII).
Conditional:  8.3) Hospitalized during course

IF
is receiving palivizumab immuno prophylaxis
hospitalized
date when the next monthly dose is due should receive that dose as scheduled

THEN
receive that dose as scheduled while they remain in the hospital (AI).

Evidence Quality:
Strength of Recommendation:
Reason:
Logic:

Imperative:  8.4) Infection control

IF

Inclusion Criterion:
· Pediatric patients who are at increased risk of severe disease

Exclusion Criterion:

RSV is known to be transmitted in the hospital setting and to cause serious disease in infants at high risk. Among hospitalized infants, the major means of reducing RSV transmission is strict observance of infection-control practices, including prompt initiation of precautions for RSV-infected infants. If an RSV outbreak occurs in a high-risk unit (eg, PICU or NICU or stem cell transplantation unit), primary emphasis should be placed on proper infection control practices, especially hand hygiene. No data exist to support palivizumab use in controlling outbreaks of health care–associated disease, and palivizumab use is not recommended
for this purpose (CIII).

Evidence Quality:

Strength of Recommendation:

Reason:

Logic:

Cost:

**Imperative:** 8.5 Palivizumab does not interfere with response to vaccines.

**IF**

*Inclusion Criterion:*
  · Pediatric patients who are at increased risk of severe disease

*Exclusion Criterion:*

**THEN**

Evidence Quality:

Strength of Recommendation:

Reason:

Logic:

Cost: