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

(1) Overview material	*Provide a structured abstract that includes the guideline's release date, status (original, revised, updated), and print and electronic sources.*
Release Date	December 2009
Status	All policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.
Available in Electronic Format	www.pediatrics.org/cgi/doi/10.1542/peds.2009-2345
Available in Print Format	**Empty**
Bibliographic citation	doi:10.1542/peds.2009-2345
Contact Information	**Empty**
Adapted From Another Guideline	**Empty**
(2) Focus	*Describe the primary disease/condition and intervention/ service/ technology that the guideline addresses. Indicate any alternative preventive, diagnostic or therapeutic interventions that were considered during development.*
Primary disease or condition	**Empty**
Alternative Strategies Available	**Empty**
Comparable Guideline	This statement updates and replaces the 2003 AAP statement and the 2006 Red Book and is consistent with the 2009 Red Book recommendations. Pediatrics 2009;124:000
(3) Goal	*Describe the goal that following the guideline is expected to achieve, including the rationale for development of a guideline on this topic.*
Goal	Ensure optimal balance of benefit and cost from this expensive intervention.
Rationale	**Empty**
Outcomes or Performance Measures Considered	**Empty**
(4) Users/Setting	*Describe the intended users of the guideline (e.g., provider types, patients) and the settings in which the guideline is intended to be used.*
Users	**Empty**
Care Setting	**Empty**
(5) Target population	*Describe the patient population eligible for guideline recommendations and list any exclusion criteria.*
Population Target	Pediatric patients who are at increased risk of severe disease
Eligibility	Pediatric patients who are at increased risk of severe disease
Inclusion criteria	Pediatric patients who are at increased risk of severe disease
Exclusion criteria	**Empty**
(6) Developer	*Identify the organization(s) responsible for guideline development and the names/credentials/potential conflicts of interest of individuals involved in the guideline's development.*
Name of Developer	**Empty**
Name of Committee	COMMITTEE ON INFECTIOUS DISEASESJoseph A. Bocchini Jr, MD, Chairperson Henry H. Bernstein, DO John S. Bradley, MD Michael T. Brady, MD Carrie L. Byington, MD Margaret C. Fisher, MD Mary P. Glode, MD Mary Anne Jackson, MD Harry L. Keyserling, MD David W. Kimberlin, MD Walter A. Orenstein, MD Gordon E. Schutze, MD Rodney E. Willoughby, MD
Committee Expertise	**Empty**
(7) Funding source/sponsor	*Identify the funding source/sponsor and describe its role in developing, and/or reporting the guideline. Disclose potential conflict of interest.*
Source of Funding	**Empty**
Name of Developer	**Empty**
Role Of Sponsor	**Empty**
Conflict Of Interest	**Empty**

(8) Evidence collection	*Describe the methods used to search the scientific literature, including the range of dates and databases searched, and criteria applied to filter the retrieved evidence.*
Description of Evidence Collection	**Empty**
Number of Source Documents	**Empty**
Evidence Time Period	**Empty**
Criteria for Selecting Evidence	**Empty**
(9) Recommendation grading criteria	*Describe the criteria used to rate the quality of evidence that supports the recommendations and the system for describing the strength of the recommendations. Recommendation strength communicates the importance of adherence to a recommendation and is based on both the quality of the evidence and the magnitude of anticipated benefits or harms.*
Recommendation Grading Criteria	**Empty**
Evidence Quality Rating Scheme	**Empty**
Recommendation Strength Rating Scheme	**Empty**
(10) Method for synthesizing evidence	*Describe how evidence was used to create recommendations, e.g., evidence tables, meta-analysis, decision analysis.*
Description of Evidence Combination	**Empty**
Methods To Reach Judgment	**Empty**
(11) Pre-release review	*Describe how the guideline developer reviewed and/or tested the guidelines prior to release.*
External Review	**Empty**
Pilot testing	**Empty**
Formal Appraisal	**Empty**
(12) Update plan	*State whether or not there is a plan to update the guideline and, if applicable, an expiration date for this version of the guideline.*
Expiration	**Empty**
Scheduled Review	**Empty**
(13) Definitions	*Define unfamiliar terms and those critical to correct application of the guideline that might be subject to misinterpretation.*
Definitions	All policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.
Term - Meaning	
(14) Recommendations and rationale	*State the recommended action precisely and the specific circumstances under which to perform it. Justify each recommendation by describing the linkage between the recommendation and its supporting evidence. Indicate the quality of evidence and the recommendation strength, based on the criteria described in 9.*
Recommendation	* Criteria 1. Infants with CLD (Page 4, Column 1, Paragraph 3) - *Conditonal* - 1.1 Infants with CLD
Decision Variable	Chronological Age
Decision Variable	CLD
Decision Variable	Receives medical therapy
Decision Variable	Onset of RSV
Action	should receive a maximum of 5 doses.
Action	**Empty**
Reference	4. The IMpact-RSV Study Group. Palivizumab, a humanized respiratory syncytial virus monoclonal antibody, reduces hospitalization from respiratory syncytial virus infection in high risk infants.Pediatrics.1998;102(3):531–537
Reason	The primary benefit of immuno prophylaxis is a decrease in the rate of RSV associated hospitalization.

Strength of Recommendation	Strength of Recommendation = A
Quality of Evidence	Quality of Evidence = IThe 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 diureticorcorticosteroidtherapywithin 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.4 Prophy4 laxis 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]).
Recommendation	* Criteria 1. Infants with CLD (Page 4, Column 1, Paragraph 3) - *Conditonal* - 1.2 Severe CLD
Decision Variable	Conditional 1.1
Decision Variable	Received Synagis Prior Year
Decision Variable	Severe CLD
Action	may benefit from prophylaxis during a second RSV season.
Action	Individual patients may benefit from decisions made in consultation with neonatologists, pediatric intensivists, pulmonologists, or infectious disease specialists (AI).
Reference	**Empty**
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.
Strength of Recommendation	Strength = C
Quality of Evidence	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."
Recommendation	* Criteria 2. Infants Gestational Age < 32 weeks (Page 4, Column 2, Paragraph 2) - *Conditonal* - 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.
Decision Variable	Gestational Age
Decision Variable	Chronological Age
Decision Variable	Onset of RSV
Action	May benefit from prophylaxis
Action	Receive maximum of 5 doses
Action	Receive all 5 doses
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 2. Infants Gestational Age < 32 weeks (Page 4, Column 2, Paragraph 2) - *Conditonal* - 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.
Decision Variable	Gestational Age
Decision Variable	Chronologial Age
Decision Variable	Onset of RSV
Decision Variable	CLD
Action	May benefit from prophylaxis
Action	Receive maximum of 5 doses
Action	Receive all 5 doses
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**

Recommendation	* Criteria 3. Infants Gestational Age > 32 & < 35 weeks (Page 4, Column 2, Paragraph 3) - *Conditonal* - 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.
Decision Variable	Gestational Age
Decision Variable	Chronological Age
Decision Variable	Attends Childcare
Decision Variable	Other children < 5 years in household.
Decision Variable	Onset of RSV Season
Action	Prophylaxis may be considered
Action	Receive prophylaxis only until they reach 3 months of age
Action	Receive a maximum of 3 monthly doses;
Reference	**Empty**
Reason	Epidemiologic data suggest thatRSV infection is more likely to oc-cur and more likely to lead to hos-pitalization for infants in thisgestational-age group when atleast 1 of the following 2 risk fac-tors is present:
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 4. Infants with congenital abnormalities of the airway or neuromuscular disease. - *Conditonal*- 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.
Decision Variable	Chronological Age
Decision Variable	Congenital abnormalities of the airway
Decision Variable	Neuromuscular condition
Action	Immunoprophylaxis may be considered
Action	Receive a maximum of 5 doses of palivizumab during the first year of life
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 5. Infants and children with CHD: - *Conditonal* - 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
Decision Variable	Chronological Age
Decision Variable	CHD
Decision Variable	CHD Medication
Decision Variable	Pulmonary hypertension
Decision Variable	Cyanotic heart disease
Action	may benefit from palivizumab prophylaxis
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 5. Infants and children with CHD: - *Conditonal* - 5.2 After surgical procedures that use cardiopulmonary bypass
Decision Variable	Conditional 5.1
Decision Variable	Surgical procedure that use cardiopulmonary bypass
Action	a postoperative dose of palivizumab (15 mg/kg) should be administered as soon as the patient is medically stable (AI).
Reference	**Empty**
Reason	a mean decrease in palivizumab serum concentration of 58% was observed after surgical procedures that

	use cardiopulmonary bypass
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 5. Infants and children with CHD: - *Conditonal* - 5.3 Infants with CHD not at increased risk
Decision Variable	with hemodynamically insignificant heart disease (eg, secundum atrial septal defect, small ventricular septal defect, pulmonicstenosis,uncomplicatedaortic stenosis, mild coarctation of the aorta,andpatentductusarteriosus);
Decision Variable	with lesions adequately corrected by surgery, unless they continue to require medication for congestive heart failure;
Decision Variable	with mild cardiomyopathy who are not receiving medical therapy for the condition.
Action	are not at increased risk of RSV and generally should not receive immunoprophylaxis
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 6. Immunocompromised children - *Conditonal* - 6.1 Immunocompromised
Decision Variable	Severe immunodeficiency
Action	May benefit from prophylaxis
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	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).
Recommendation	* Criteria 7. Patients with cystic fibrosis - *Imperative* - 7.1 A recommendation for routine prophylaxis in patients with cystic fibrosis cannot be made
Action	**Empty**
Reference	**Empty**
Reason	**Empty**
Quality of Evidence	insufficient data exist to determine the effectiveness of palivizumab use in this patient population.31. Giusti R. North American Synagis Prophylaxis survey. Pediatr Pulmonol. 2009;44(1): 96–98
Recommendation	* Criteria 8. Special situations - *Conditonal* - 8.1) Breakthrough RSV infection
Decision Variable	Qualifes for prophylaxis
Decision Variable	is receiving palivizumab immuno prophylaxis
Decision Variable	Breakthrough RSV infection
Action	Continue until a maximum number of doses have been administered
Action	3 doses have been administered to infants in the 32 weeks' 0 days' through 34 weeks' 6 days' gestational-age group o
Action	Maximum of 5 doses have been administered to infants with CHD, CLD, or preterm birth before 32 weeks' gestation.
Reference	**Empty**
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).
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 8. Special situations - *Conditonal* - 8.2) Hospitalized infants who qualify for prophylaxis during the RSV season s

Decision Variable	Hospitalized
Decision Variable	Onset of RSV
Action	receive the first dose of palivizumab 48 to 72 hours before discharge or promptly after discharge(CIII).
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 8. Special situations - *Conditonal* - 8.3) Hospitalized during course
Decision Variable	is receiving palivizumab immuno prophylaxis
Decision Variable	hospitalized
Decision Variable	date when the next monthly dose is due should receive that dose as scheduled w
Action	eceive that dose as scheduled while they remain in the hospital (AI).
Reference	**Empty**
Reason	**Empty**
Strength of Recommendation	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 8. Special situations - *Imperative* - 8.4) Infection control
Action	RSVisknowntobetransmittedin the hospital setting and to cause serious disease in infants at high risk. Among hospitalized infants, the major means of reducing RSV transmissionisstrictobservance of infection-control practices, including prompt initiation of precautions for RSV-infected infants.32 If an RSV outbreak occurs .32 If in a high-risk unit (eg, PICU or NICU or stem cell transplantation unit), primary emphasis should be placed on proper infectioncontrolpractices,especiallyhand hygiene. No data exist to support palivizumab use in controlling outbreaks of health care–associateddisease,andpalivizumabuse is not recommended for this purpose (CIII).
Reference	**Empty**
Reason	**Empty**
Quality of Evidence	**Empty**
Recommendation	* Criteria 8. Special situations - *Imperative* - 8.5 Palivizumab does not interfere with response to vaccines.
Action	**Empty**
Reference	**Empty**
Reason	**Empty**
Quality of Evidence	**Empty**
(15) Potential benefits and harms	*Describe anticipated benefits and potential risks associated with implementation of guideline recommendations.*
Health Outcomes	**Empty**
Cost Analysis	**Empty**
Description of Harms and Benefits	**Empty**
Quantification of Harms and Benefits	**Empty**
Alternative Practices Risks	**Empty**
(16) Patient preferences	*Describe the role of patient preferences when a recommendation involves a substantial element of personal choice or values.*
Role of Patient Preferences	**Empty**
(17) Algorithm	*Provide (when appropriate) a graphical description of the stages. and decisions in clinical care described by the guideline.*
Algorithm	**Empty**
Action Steps	**Empty**
Conditional Steps	**Empty**

Alternative Steps	**Empty**
Synchronization Step	**Empty**
(18) Implementation considerations	*Describe anticipated barriers to application of the recommendations. Provide reference to any auxiliary documents for providers or patients that are intended to facilitate implementation. Suggest review criteria for measuring changes in care when the guideline is implemented.*
Implementation Plan	**Empty**
Implementation Strategy	**Empty**
Supporting Documents	**Empty**
Patient Resources	**Empty**
Anticipated Enabler	**Empty**
Anticipated Barrier	**Empty**
Quick Reference Guide	**Empty**
Technical Report	**Empty**