Update on RSV Seasonality and Palivizumab Prophylaxis in Alaska

Introduction
Palivizumab (Synagis®) is a monoclonal antibody that reduces respiratory syncytial virus (RSV) hospitalization risk in certain high-risk children (Redbook: 2009 Report of the Committee on Infectious Diseases, American Academy of Pediatrics [AAP]). Recommendations for administration of palivizumab in the United States were recently updated in the 2009 Redbook, and include a 5-month administration recommendation.

2009 Redbook Recommendations
Palivizumab should be administered monthly between November 1 and April 1 to high-risk infants and children in the United States who meet the following criteria during the RSV season (the last two bullets represent new recommendations):

1. children aged <24 months with chronic lung disease or hemodynamically significant cardiac disease;
2. infants <29 weeks gestation who are aged <12 months;
3. infants 29–32 weeks gestation who are aged <6 months;
4. infants 32–35 weeks gestation who are aged <3 months with 1 or more of the following risk factors: sibling <5 years, daycare attendance; and
5. infants <35 weeks gestation with congenital airway anomalies or neuromuscular disease who are aged <12 months.

The Redbook update also includes an Alaska-specific recommendation based on the higher rates of RSV hospitalization and seasonality observed in the YK Delta. It states that health care providers in the region may wish to use local RSV hospitalization data to “assist in determining the onset and offset of RSV season for the appropriate timing of palivizumab administration”.

Alaska RSV Seasonality Data
1. Three hospital databases were queried for children aged <3 years who were hospitalized with laboratory-confirmed RSV infection. The Alaska RSV season onset and offset were defined as the first and last of two consecutive weeks, respectively, with RSV being detected in ≥2 specimens and >10% of all submitted specimens.

   - **YK Delta Hospitalization Data, 1994–2009**
     Season onset started as early as the second week of September and season offset ended as late as the second week of June. The median season length was 27.5 weeks (compared with 17.5 weeks in the contiguous United States; Figure 1).

   - **Providence Alaska Medical Center, 2006–2009**
     Season onset started as early as the second week of November and season offset ended as late as the second week of April.

   - **Alaska Native Medical Center, 2006–2009**
     Season onset started as early as the fourth week of November and season offset ended as late as the fourth week of May.

2. The Alaska Medicaid hospitalization database was queried from 2004–2009 for children aged <2 years with an approved claim for bronchiolitis/RSV pneumonia hospitalization (ICD-9: 466.1, 480.1). In general, bronchiolitis hospitalizations increased during Oct-Nov, peaked Feb-Mar, and declined in June regardless of race (Figure 2). Hospitalization seasonality varied yearly, and was similar in southcentral, northern, and southwestern Alaska.

Discussion
Prolonged RSV seasonality occurs not just in the YK Delta but throughout Alaska, affecting Alaska Native and non-Native children alike. Therefore, prolonged administration of palivizumab is warranted for high-risk children statewide. Based on available data, we advise that the appropriate timing for monthly administration of palivizumab to high-risk children in Alaska should be between October 15 and May 15.

Compared to the standard AAP recommendations, the Alaska Medicaid policy recognizes two additional risk factors for Alaska infants 32–35 weeks gestation and allows for six (rather than five) doses of palivizumab for high-risk beneficiaries.

Recommendations
1. Providers should use Alaska-specific RSV seasonality data to determine the appropriate timing of palivizumab administration for all of their high-risk pediatric patients.
2. Providers should add the following risk factors to the 2009 Redbook list of risk factors for Alaska infants 32–35 weeks gestation: crowded living environment (i.e., ≥3 people per child’s bedroom or ≥7 people per household) and lack of running water.
3. Providers caring for Medicaid beneficiaries should be aware that the new Medicaid palivizumab administration policy does not cover the entire time-period between October 15 and May 15 and plan doses accordingly.

Alaska Medicaid Palivizumab Coverage
Based on the 2009 Redbook recommendations, Alaska-specific RSV epidemiology, and Medicaid resource limitations, the Division of Health Care Services has developed a new palivizumab coverage policy for at-risk beneficiaries. From October 15 through May 14, Alaska Medicaid will pay for up to three monthly doses of palivizumab (until 90 days of age) for children meeting criteria 1 below (Box), and up to six monthly doses for children meeting criteria 2, 3, or 4 below (Box). These policy provisions will apply to future years unless a revised policy is otherwise indicated.

Box: Alaska RSV Prophylaxis Risk Criteria, 2009

1. **Gestational age at birth 32 to <35 weeks:** born during RSV season or <90 days prior (after July 17), and having at least one of the following: an AAP risk factor listed in the 2009 Redbook, a crowded living environment (<3 people per child’s bedroom, >7 peopel per household) or a lack of running water at home.
2. **Gestational age 29 to <32 weeks:** <6 months old at the start of the RSV season (born after April 15).
3. **Gestational age <29 weeks (or <35 weeks with an indicated congenital anomaly):** who are <12 months old at the start of the RSV season (i.e., born after October 15 the previous year).
4. **Children with congenital heart disease or chronic lung disease:** <24 months old at the start of the RSV season (born after October 15 two years prior).

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