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In reply, please refer to:
File:

December 27, 2023

MEDICAL ADVISORY: MATERNAL RSV VACCINATION AND INFANT RSV MONOCLONAL ANTIBODY FOR YEAR-ROUND RSV PREVENTION IN INFANTS IN HAWAI'I

- RSV protection is recommended year-round in Hawai'i; Hawai'i Department of Health in collaboration with the Hawai'i RSV Prevention Committee and CDC recommend prevention of RSV for ***all*** infants through either maternal vaccination or administration of Beyfortus (Nirsevimab, Sanofi and Astra Zeneca) to the infant.
- Beyfortus is a monoclonal antibody providing passive immune protection from RSV. It is recommended for all infants under 8 months who are unable to benefit from maternal vaccination. Beyfortus should be administered within the 1st week after birth, preferably during birthing hospitalization, to achieve optimal prevention of RSV in infants. Infants with prolonged birth hospitalizations related to prematurity or other causes should receive nirsevimab shortly before or promptly after hospital discharge.
- Abrysvo (RSV preF vaccine, Pfizer) is recommended for all pregnant individuals between 32 weeks and 0 days through 36 weeks and 6 days' gestation.
- Beyfortus is available for VFC and private purchase, however there are significant supply shortages during the 2023/2024 period. Due to the current shortage of Beyfortus, providers should strongly encourage maternal vaccination to protect young infants from RSV infection.
- Some high-risk populations* < 20 months of age should receive a second dose of Beyfortus to protect them during their 2nd RSV season. Synagis (Palivizumab, SOBI) is recommended for this population if Beyfortus is not available.

Dear Healthcare Providers,

Respiratory Syncytial Virus (RSV) continues to be the leading cause of hospitalization among U.S. infants. In 2023, two new medications were approved by the Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention (CDC) to provide RSV protection for infants: Abrysvo (RSVpreF Vaccine, Pfizer), a vaccine given to pregnant patients to create maternal antibodies that are passed to the newborn, and Beyfortus (Nirsevimab, Sanofi and Astra Zeneca), a monoclonal antibody administered to infants. Due to a shortage of Beyfortus during the 2023-2024 RSV season, providers are strongly advised to encourage vaccination of pregnant patients with Abrysvo.

*Note that risk factors for severe RSV disease in <8-month-old infants are not the same as those for 8-19 month infants – see Additional Resources below for detailed risk factors.

Abrysvo (RSVpreF Vaccine, Pfizer) for Maternal Vaccination:
In September 2023, the CDC's Advisory Committee on Immunization Practices (ACIP) recommended RSV vaccination of pregnant women between 32 weeks and 0 days through 36 weeks and 6 days' gestation with Abrysvo. Abrysvo must be given ≥14 days prior to delivery in order to provide full protection to the infant. Maternal antibodies provide passive immune protection to infants for several months. Abrysvo is included in the Vaccines for Children (VFC) program for pregnant people under 19 years of age who meet VFC requirements. Abrysvo vaccine is not recommended for infants, children or nonpregnant teens.

There are currently no recommendations for additional doses of Abrysvo during subsequent pregnancies, and this is being actively researched.

Arexvy (RSVpreF3 Vaccine, GSK) is **NOT** approved or recommended for use in pregnant people or children.

Beyfortus (Nirsevimab, Sanofi and Astra Zeneca):
Beyfortus is a monoclonal antibody designed to provide protection of infants and young children at increased risk of severe RSV lower respiratory tract disease. In August 2023, the ACIP approved Beyfortus for all infants younger than 8 months born to patients who did not receive Abrysvo ≥14 days prior to delivery, and some children ages 8-19 months who are at increased risk of severe RSV disease; however, there is currently a significant supply shortage. There are some clinical conditions when use of Beyfortus is still indicated even if maternal vaccination with Abrysvo was received ≥14 days prior to delivery – see Additional Resources for detailed information.

Beyfortus is administered as a single intramuscular injection providing protection for at least 150 days (5 months) and has been approved by CDC to be included in the VFC Program for eligible infants and children. Beyfortus is manufactured in either 50mg or 100mg doses in single-dose prefilled syringes. The chart below provides dosing guidelines. The use of two 50mg doses is not recommended to provide a 100mg total dose.

Beyfortus Dosing:

Dose	Indications
50mg	Infants <8 months old, weight <5kg (11 lbs)
100mg	Infants <8 months old, weight ≥5kg (≥11 lbs)
200mg (administer two 100mg injections on same day at different sites)	Infants and Children 8–19 months with increased risk of severe RSV disease*

*Note that risk factors for severe RSV disease in <8-month-old infants are not the same as those for 8-19 month infants – see Additional Resources below for detailed risk factors.

Synagis (Palivizumab, SOBI):
Synagis is a monoclonal antibody, but the duration of protection is only 30 days, which is why monthly dosing is indicated during the RSV season for infants at high risk for severe RSV infection. While Beyfortus was recommended to replace Synagis, the current shortage of Beyfortus has prompted the CDC and American Academy of Pediatrics (AAP) to recommend continuing Synagis for high-risk patients aged 8 through 19 months during their second RSV season. If Beyfortus becomes available, and the infant or child has received less than 5 monthly doses, the child should receive a 200mg dose of Beyfortus no later than 30 days after the last dose of Synagis. There is no recommended minimum interval between dosing of Synagis and Beyfortus. No further doses of Synagis will be required.

Synagis is not included in the VFC program, and prior insurance authorization is needed according to AAP guidelines for use.

Hawai’i RSV Seasonality:
Hawai’i has a unique pattern of RSV circulation that does not fit a classic “seasonal” pattern. Epidemiologic data reveals RSV peak incidence in Hawai‘i often extends from the beginning of August through the end of March but can vary considerably from year to year, and circulation generally continues with at least low to moderate incidence even when the U.S. mainland season has ended. Based on review of RSV trends in Hawai’i from 2017 to present, the Hawai’i Department of Health (HDOH), in collaboration with the CDC and Hawai’i RSV Prevention Committee (a Hawai’i based committee consisting of local pediatric subspecialties, community physicians and pharmacies from the major healthcare systems), recommend year-round administration of Beyfortus and Abrysvo.

Beyfortus Recommendations for Hawai’i:
The Hawai’i Department of Health, in collaboration with CDC and the Hawai’i RSV Prevention Committee, recommends the following:

- Year-round immunization of every newborn, preferably before hospital discharge, with Beyfortus if the individual giving birth to the infant has not been vaccinated with Abrysvo ≥14 days prior to delivery.
    - If a birthing hospital dose of Beyfortus is not available, give Beyfortus within 1 week of birth.
    - See Additional Resources for specific clinical situations when Beyfortus is recommended even if maternal RSV vaccination was given ≥14 days prior to delivery (e.g., maternal immunocompromise, infant placed on ECMO, etc.), and for recommendations regarding timing of dose in preterm infants requiring admission to the neonatal intensive care unit.
- A second dose of Beyfortus should be administered to infants/children 8-19 months old who are at continued increased risk for severe RSV disease*. In addition to being

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between the ages of 8-19 months old, there should be at least 6 months between their 1st and 2nd dose. Currently, there is not enough data to recommend a 3rd dose for high-risk individuals.

During Times of Beyfortus Shortage:
The Hawai'i Department of Health recognizes that demand may exceed supply, especially with recommending the initial vaccination of all infants <8 months of age and the current significant national manufacturing shortage. The following recommendations are to be implemented when there is a shortage of Beyfortus:

For Pregnant Individuals:

- Strongly encourage vaccination with Abrysvo during 32 weeks and 0 days through 36 weeks and 6 days' gestation as this protects their newborn after birth, by transferring antibodies to their unborn child. Maternal antibodies can provide passive immune protection to infants that lasts several months, significantly decreasing the risk of severe RSV infection during the first months of life. In addition, Abrysvo provides protection against RSV for the pregnant individual as well.
- Beyfortus is not recommended for most infants born to women who received Abyrsvo ≥14 days prior to birth.
- There are currently no Abrysvo supply concerns or manufacturing shortages.

For Infants age <8 months:

- Recommend Beyfortus for infants born to patient who did not receive maternal RSV vaccine ≥14 days prior to birth, or if special clinical circumstances that impede the efficacy of Abrysvo (see Additional Resources).
- Prioritize in the following manner:
    - those at increased risk for severe RSV disease (see Additional Resources)
    - American Indian and Alaska Native
- Follow AAP recommendations on the use of Synagis for infants aged <8 months when the appropriate dose of Beyfortus is not available.

For infants and children 8 months–19 months of age at continued increased risk for severe RSV disease*:

- Prioritize Beyfortus for the following patients:
    - Those living in remote regions or in communities known to have high rates of RSV among older infants and toddlers, such as those children outside of Oahu who would require air transportation to receive a higher level of medical care for RSV infection.
    - American Indian and Alaska Native children who are not Synagis-eligible.
- Utilize Synagis for palivizumab-eligible children.

*Note that risk factors for severe RSV disease in <8-month-old infants are not the same as those for 8-19 month infants – see Additional Resources below for detailed risk factors.

Interim Beyfortus Dosing Recommendations During Supply Shortage:

Dose	Indications
50mg	Infants <6 months old, weight <5kg (11 lbs)
100mg	Infants <6 months old, weight ≥5kg (≥11 lbs)
100mg	Infants 6 to <8 months old and weight ≥5kg (≥11 lbs) with increased risk of severe RSV disease*
200mg (administer two 100mg injections on same day at different sites)	Infants and Children 8–19 months with increased risk of severe RSV disease*

Thank you for partnering with us to ensure a safe and healthy community. For Further Clinical Consultation on RSV Immunization Products please contact Hawai‘i Department of Health, Immunization Branch at (808) 286-8349.

Sincerely,

Sarah K. Kemble, MD
State Epidemiologist

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ADDITIONAL RESOURCES:

AAP Recommendations on Palivizumab:
https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-for-use-of-palivizumab-prophylaxis-to-prevent-hospitalization/

AAP Guidance on RSV Prevention Resources for Providers:
https://www.aap.org/en/patient-care/respiratory-syncytial-virus-rsv-prevention/

ACIP Abrysvo Recommendations for Pregnant Individuals:
https://www.cdc.gov/mmwr/volumes/72/wr/mm7241e1.htm

Adverse Event Reporting after Immunization:

- For Beyfortus use the FDA Medwatch: https://www.accessdata.fda.gov/scripts/medwatch/index.cfm
- For Abrysvo use the Vaccine Adverse Event Reporting System (VAERS): https://vaers.hhs.gov/

CDC HAN on Nirsevimab shortage:
https://emergency.cdc.gov/han/2023/han00499.asp

CDC MMWR on Nirsevimab:
https://www.cdc.gov/mmwr/volumes/72/wr/mm7234a4.htm?s_cid=mm7234a4_w

CDC’s List of Who is at High Risk for Disease:
https://www.cdc.gov/rsv/high-risk/infants-young-children.html

Beyfortus can be considered even when maternal RSV vaccination was completed ≥14 days prior to delivery. These circumstances may include, but are not limited to:

- Infants born to pregnant people who may not mount an adequate immune response to RSV vaccination (e.g., people with immunocompromising conditions)
- Infants born to pregnant people who have medical conditions associated with reduced transplacental antibody transfer (e.g., people living with HIV infection)
- Infants who have undergone cardiopulmonary bypass or extracorporeal membrane oxygenation (ECMO), leading to loss of maternal antibodies
- Infants with substantial increased risk for severe RSV disease (e.g., hemodynamically significant congenital heart disease, intensive care admission with a requirement of oxygen at discharge).

*Note that risk factors for severe RSV disease in <8-month-old infants are not the same as those for 8-19 month infants – see Additional Resources below for detailed risk factors.

High Risk Categories for RSV requiring prioritization by Season:

1st Season:

- Premature birth at <29 weeks' gestation
- Chronic lung disease of prematurity
- Hemodynamically significant congenital heart disease
- Severe immunocompromise
- Severe cystic fibrosis (either manifestations of severe lung disease or weight-for-length less than 10th percentile)
- Neuromuscular disease
- Congenital pulmonary abnormalities that impair the ability to clear secretions.
  Reference: CDC HAN https://emergency.cdc.gov/han/2023/han00499.asp.

2nd Season (Additionally, a dose of RSV antibody is also recommended for children between the ages of 8 – 19 months entering their second RSV season who are in at least one of these groups):

- Children who have chronic lung disease from being born premature and are requiring medical therapy for their lung disease
- Children who are severely immunocompromised
- Children with cystic fibrosis who have severe disease
- American Indian and Alaska Native children.
  Reference: CDC MMWR https://www.cdc.gov/mmwr/volumes/72/wr/mm7234a4.htm.

Hawai‘i Department of Health Influenza and Respiratory Surveillance Weekly Report: https://health.hawaii.gov/docd/resources/reports/influenza-reports/.

*Note that risk factors for severe RSV disease in <8-month-old infants are not the same as those for 8-19 month infants – see Additional Resources below for detailed risk factors.