**Respiratory Syncytial Virus Vaccine (ABRYSVO)**  
**Mini-Monograph**  
**VA Pharmacy Benefits Management Services, Medical Advisory Panel, and VISN Pharmacist Executives**  
**Aug 2023**

Abbreviations: MOA=mechanism of action; RSV=respiratory syncytial virus; n=number of patients; IR/1000PY=Incidence rate per 1000 person years; RSV-LRTD= RSV confirmed lower respiratory tract infection; TBD=to be determined; VANF=VA National Formulary; GBS=Guillain-Barre syndrome

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| Results | ABRYSVO reduced risk of developing RSV-associated LRTD with ≥ 3 symptoms by 89% for season 1 (2 vs. 18 cases) and 79% during a partial season 2 (3 vs. 14 cases). **Overall VE of 84% over 1.5 seasons after a single dose (5 vs. 32 cases) [95% CI 60, 95]**  
Significant benefit also shown in subgroups (≥ 65 yrs., ≥ 70 yrs., those with ≥ 1 comorbidity)  
**VE for medically attended RSV-LRTD was 81%** over 1.5 seasons after a single dose  
**Only 4 hospitalizations due to RSV (vaccine 1, placebo 3)** (non-significant result)  
Co-administration with influenza vaccine met non-inferiority criteria, although titers were somewhat lower and clinical significance of this is unknown |
| Limitations | Low number of cases, short follow-up to assess immune-persistence in subsequent years  
Low number of patients at highest risk for RSV complications and low numbers of hospitalizations during trial. Efficacy in higher risk patients unknown |
| Summary | A single dose of ABRYSVO provided moderate to high efficacy in reducing RSV-LRTD (and medically attended) but benefit on hospitalization or death or benefit in highest risk populations are unknown. |

*RSV-LRTD: at least 2 or 3 signs or symptoms (cough, wheezing, sputum production, shortness of breath or tachypnea) lasting > 1 day with PCR confirmed RSV. CDC uses 3 signs/symptoms for comparison to efficacy endpoints.*
### Safety

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<td>History of severe allergic reaction to ABRYSVO or any component of the product</td>
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<td>Prevention and management of allergic reactions, syncope (after administration) Those who are immunocompromised may have a diminished response</td>
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| Adverse reactions (AE) | Solicited AEs in RENOIR (ABRYSVO vs. placebo):  
- Injection site pain (11% vs. 6%)  
- Fatigue (16% vs. 14%)  
- Myalgia (10% vs. 8%)  
- Headache (13% vs. 12%)  
- Arthralgia (8% vs. 7%)  
Severe reactogenicity events (Grade 3) in 1% of vaccine vs. 0.7% of control subjects  
Serious AEs (SAEs) in 4% of each group  
Three inflammatory neurologic events within 42 days of vaccination:  
- 1 case of Guillain-Barre syndrome (GBS) 14 days post vaccination  
- 1 case of Miller Fisher syndrome (GBS variant) 10 days after vaccination and  
- 1 worsening of pre-existing undifferentiated polyneuropathy at 21 days post-vaccination  
Numerical imbalance in atrial fibrillation was noted within 30 days post-vaccination (10 vs. 4 cases), which will be monitored post-marketing |

### Drug and Formulary Alternatives

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| RSV vaccine, adjuvanted (ABRYSVO) | F | FDA approved for patients aged 60 years and older as a single dose  
ACIP recommended those ≥ 60 years of age may receive a single dose based on shared decision making between patient and provider | Data only through mid-season 2 |
| RSV vaccine, adjuvanted (AREXVY) | F | FDA approved for patients aged 60 years and older as a single dose  
ACIP recommended those ≥ 60 years of age may receive a single dose based on shared decision making between patient and provider | Adverse events may be higher than ABRYSVO, possibly due to adjuvant  
Lack of data regarding consequences of co-administration with other adjuvanted or reactogenic vaccines |

### Conclusions/Projected Place in Therapy

- RSV is associated with an estimated 60,000-160,000 hospitalizations and 6,000-10,000 deaths each year in adults aged 65 years and older. Certain conditions, increase the risk for severe disease and hospitalization.  
- ABRYSVO demonstrated moderate to high efficacy reducing the incidence of RSV-LRTD and medically attended RSV-LRTD in adults aged 60 years or older; clinical trials thus far have not been powered to show a difference in RSV requiring hospitalization or death. In addition, those at highest risk (multiple comorbidities, immunocompromised, frail) were not included or underrepresented in the phase 3 trial, so efficacy in those populations is unclear.
In June of 2023, the ACIP voted to recommend that adults ≥ 60 years may receive a single dose of an RSV vaccine, using shared clinical decision making. ACIP noted the vaccine had moderate to high efficacy over 1 full and a 2nd partial season with an acceptable safety profile but felt more evidence from post-marketing surveillance was needed for potential immune-mediated diseases (such as Guillain-Barre) and atrial fibrillation. More data is needed in the highest risk patients, more data on hospitalization and death, and durability of response over multiple seasons.

Unlike routine recommendations, those based on SDCM do not target all persons in a particular age or risk group.

The decision to vaccinate should be based on a discussion between health care provider and patient, which may be guided by the individual’s risk for disease and their characteristics, values and preferences; the provider’s clinical discretion; and the characteristics of the vaccine.

As part of this discussion, the risk for severe RSV disease should be considered. Those most likely to benefit include those with chronic medical conditions such as:
- Chronic lung disease (asthma or COPD)
- Cardiovascular disease (such as CHF or coronary artery disease)
- Moderate/severe immunocompromise
- Diabetes mellitus
- Neurologic or neuromuscular condition
- Kidney or liver disease
- Hematologic disorders
- Other factors include
  - Residence in a nursing home or other long-term care facility
  - Frailty
  - Advanced age
  - Other underlying conditions that a healthcare provider determines might increase severe RSV risk

ACIP recommends that co-administration with other adult vaccines during the same visit is ACCEPTABLE but note data is only available for administration with flu vaccines, and administering with other vaccines might increase local or systemic reactogenicity.

Another RSV vaccine, AREXVY, by GlaxoSmithKline was also FDA approved in 2023. ACIP does not distinguish between products in their recommendations.

References
1. Respiratory syncytial virus vaccine, adjuvanted (ABRYSVO) [prescribing information]. Pfizer: May 2023
7. Evidence to recommendation tables for RSV vaccines in older adults: ACIP Evidence to Recommendations for Use of Pfizer Bivalent RSVpreF Vaccine (ABRSYVO) in Older Adults | CDC