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# The potential public health impact of the adjuvanted respiratory syncytial virus prefusion F protein vaccine among older adults in Italy: preliminary results of a Markov model analysis

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**RSV vaccination of older adults offers the potential to substantially reduce the RSV burden in Italy, and this evidence may help policy makers and clinicians make informed decisions about RSV vaccination among older adults in Italy.**

## Introduction

**Respiratory syncytial virus** (RSV) is a **highly contagious respiratory virus** that has a substantial impact on the health of older adults (OA) aged ≥65 years, particularly for those with underlying comorbidities such as chronic obstructive pulmonary disease (COPD) and asthma, who are at risk of severe outcomes if infected.[1]

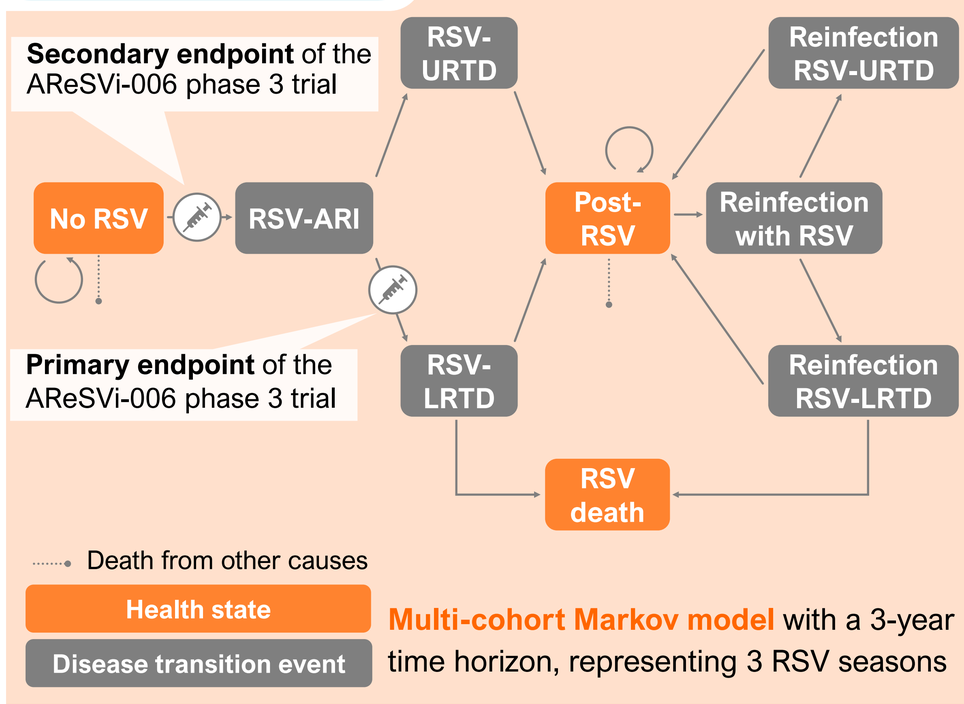
RSV infection in OA in Italy is estimated to lead to >291,000 RSV-associated acute respiratory infections, >26,000 hospitalizations, and >1,800 deaths each year,[2] but **the burden of RSV is underestimated due to lack of surveillance and underreporting**.

## Objectives

**Estimation of public health impact of the adjuvanted RSVPreF3 OA vaccine[3] in comparison with no vaccination in OA in Italy**

- In the **influenza vaccination target population** (≥65-year-olds)[4]
- **Two scenario analyses were performed to explore the impact of different vaccination coverage (VC) rates:**
  - **Scenario 1:** VC rate was assumed to be the same as for influenza vaccines in the 2022-2023 season (≥65-year-olds: 56.7%)[5]
  - **Scenario 2:** VC rate was assumed to be the optimal target for influenza vaccines (≥65-year-olds: 95.0%)[4]

## Methods

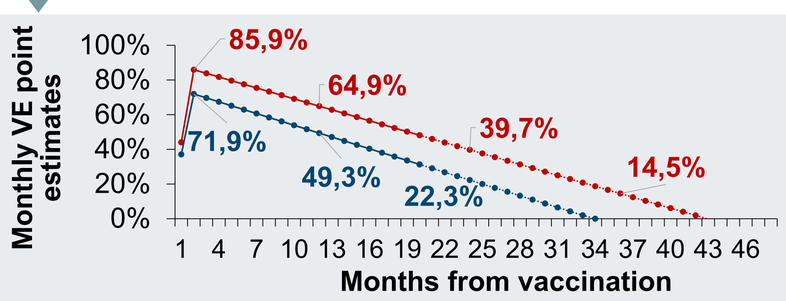



**Multi-cohort Markov model** with a 3-year time horizon, representing 3 RSV seasons

### Adaptation to the Italian healthcare setting

Demographic, epidemiologic, and cost data were sourced from **published literature**

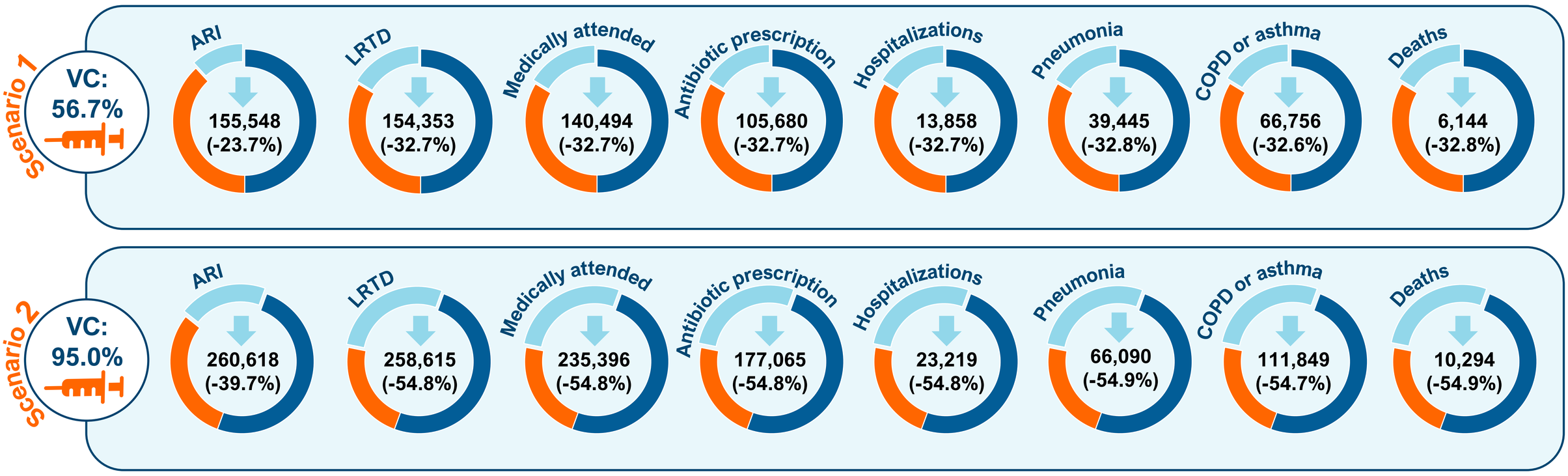
Vaccine efficacy (VE) and waning rates were informed by the **AReSVi-006 phase 3 clinical trial.**[6]




| | Peak VE | Monthly Waning |
|---|---|---|
| RSV LRTD | 88.0% (LB: 65.8%; UB: 99.2%) | -2.1% (LB: -0.1%; UB: -4.3%) |
| RSV ARI | 74.2% (LB: 56.4%; UB: 94.0%) | -2.2% (LB: -0.3%; UB: -4.3%) |

## Results

**The model estimates that, compared to no vaccination, adjuvanted RSVPreF3 OA vaccine would substantially reduce the burden of RSV among Italian adults aged ≥65 years by preventing RSV-LRTD events and their associated complications, hospitalizations, and deaths.**




Based on modelled population size and estimated RSV vaccine coverage, 8,038,611 OA and 13,468,573 OA were assumed to receive RSVPreF3 OA in the vaccinated arm of the analysis.

## Conclusions

- Assuming the same vaccination coverage as for influenza vaccines in the 2022-2023 season, the analysis predicts that, compared to no vaccination, the adjuvanted RSVPreF3 OA vaccine would approximately prevent 32.7% of RSV LRTD cases over 3 years among Italian OA aged ≥65 years, resulting in a €231M cost reduction related to avoided healthcare resource utilization and associated costs.
- The model predicts that vaccinating 95.0% of the Italian OA population with the adjuvanted RSVPreF3 OA vaccine would prevent 54.8% of RSV-LRTD events and their associated hospitalizations vs. no RSV vaccination, amounting to a reduction of €388M in direct clinical costs over the 3 years.
- The number needed to vaccinate (NNV) with a single dose of the adjuvanted RSVPreF3 OA vaccine to prevent one RSV-LRTD event among the Italian OA population is estimated to be 52 over a 3-year time horizon, representing 3 RSV seasons.
- RSV vaccination offers the potential to substantially reduce the RSV burden in Italy, and this evidence may help policy makers and clinicians make informed decisions about RSV vaccination among OA in Italy.

## Abbreviations

**AReSVi006:** AReSVi006 (Adult Respiratory Syncytial Virus) phase III clinical trial; **ARI:** acute respiratory illness; **COPD:** Chronic obstructive pulmonary disease; **VC:** Vaccine Coverage; **LRTD:** lower respiratory tract disease; **OA:** older adults aged ≥65 years; **RSV:** respiratory syncytial virus; **RSVPreF3:** Respiratory Syncytial Virus Prefusion F Protein Vaccine disease; **URTD:** upper respiratory tract disease; **VE:** Vaccine Efficacy

## References

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