

Budget Impact Analysis of RSVpreF Vaccine for Prevention of Respiratory Syncytial Virus (RSV) Disease Among Older Adults in Argentina

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INTRODUCTION

- Respiratory syncytial virus (RSV) is a prevalent virus and a common cause of acute respiratory tract illness (ARI), primarily in children, but is increasingly recognized as a cause of severe respiratory illness in adults, particularly those with underlying risk factors.¹
- Among general population of older adults, the estimated annual incidence of RSV infections ranges from 3% to 7%, increasing to 4% to 10% in high-risk groups in the US.¹

RESULTS								
Table 2: Difference in health outcomes by year								
	Year 1	Year 2	Year 3	Cumulative				
Without vaccination								
Total hospitalizations	12,281	11,696	11,109	35,086				
Total outpatient (ED/PO/HO)	119,611	113,828	108,098	341,538				
Disease related deaths	1,004	971	937	2,912				
With vaccination								
Total hospitalizations	12,260	11,627	10,991	34,878				
Total outpatient (ED/PO/HO)	119,487	113,421	107,544	340,451				
Disease related deaths	1,002	965	927	2,894				
Difference								
Total hospitalizations	-20	-69	-118	-207				
Total outpatient (ED/PO/HO)	-124	-408	-554	-1,086				
Disease related deaths	-2	-6	-10	-18				

- Studies suggest that outcomes associated with RSV hospitalization and influenzahospitalization are similar.²⁻³
- Adults presenting with ARI are not routinely tested for RSV; therefore, there is a lack of burden of disease data in older adults in Argentina.
- RSVpreF vaccine was approved in Argentina for adults aged 60+ for the prevention of RSV-lower respiratory tract disease (LRTD) as well as for pregnant individuals 32 to 36 weeks gestational age for the prevention of LRTD and severe LRTD cause by RSV in infants from birth through 6 months of age.⁴

OBJECTIVE

• To estimate the public health and budget impact (BI) of using the RSVpreF vaccine for prevention of respiratory syncytial virus (RSV) disease in older adults in Argentina.

METHODS

• A 3-year budget impact model estimated the potential impact of RSVpreF from the perspective of the National Institute of Social Services for Retirees and Pensioners (INSSJP-PAMI) which provides social and healthcare services to almost 5 million affiliates, covering 80% of the elderly nationwide.

Figure 1: PAMI population ≥50 yrs (N: 4,632,255)

85-99 yrs10%____

Abbreviations: ED: emergency department, PO: physician office HO: hospital outpatient

Impact on Health Outcomes

• Considering vaccine coverage of 0.5%, 1.5% and 3% (years 1, 2, and 3 respectively), the reduction in RSV hospitalizations was 0.2%, 0.6% and 1.1%, respectively. In total 18 deaths were averted (yr1: 2; yr2: 6; yr3: 10).

Table 3: Difference in total costs in USD

	Year 1	Year 2	Year 3	Cumulative
Total hospitalizations costs	-37,710	-127,836	-219,588	-385,135



 Target population was defined as adults aged ≥60 years with and without underlying comorbidities that increase the risk of severe RSV disease (i.e., obesity, diabetes, chronic pulmonary disease, chronic heart disease, chronic renal disease, immunosuppression).

Table 1: Proportion with risk factor

Age (years)	Without Risk Factors	With Risk Factors
50-64	58.2%	41.8%
65-74	45.3%	54.7%
75-84	40.9%	59.2%
85-99	39.4%	60.6%

- We assumed a low and gradual uptake of the vaccine (0.5%-1.5% and 3% in year 1, 2, and 3, respectively), considering that vaccines outside the National Immunization Program require out of pocket payments will need several years to gain acceptance from patients and physicians. Vaccination rates were assumed to be higher in the elderly with comorbidities.
- Estimated vaccinated cohort was 22,943 in year 1, 69,257 in year 2, and 139,280 in year

Total outpatient (ED/PO/HO) costs	-6,934	-22,725	-31,723	-61,381
Total vaccination costs	411,803	896,144	1,133,529	2,441,476
Total net costs	367,158	745,584	882,218	1,994,960

Abbreviations: USD: United States Dollars, ED: emergency department, PO: physician office HO: hospital outpatient

Impact on Healthcare Costs

• The net 3-year BI of the inclusion of RSVpreF vaccine in PAMI was \$2.0M considering a reduction in medical costs of \$446,516 and total vaccination costs of \$2.4M.

Sensitivity Analysis

 Vaccination rates and vaccine acquisition costs were the most influential parameters in one-way sensitivity analyses. A scenario analysis considering 10-fold in vaccination rates showed 10,045 more cases that required medical attention averted and 136 additional deaths averted with a \$14.2M incremental increase in the costs.

CONCLUSIONS

- Adoption of the RSVpreF vaccine would avert hospitalizations and reduce deaths but would require an increase in the budget for vaccine investment.
- Future analyses employing anticipated data on real-world effectiveness of vaccines will be a key element in assessing the real impact of vaccination on older adults in Argentina.

3; revaccination was not considered in this analysis.

- In the absence of local data, burden of disease parameters were taken from epidemiological studies conducted in the United States.^{3, 5-7}
- Monthly rates of RSV infections were taken from Argentinean epidemiological bulletins.⁸
- Vaccine effectiveness (VE) was based on end of season 1 and end of season 2 clinical trial (RENOIR) endpoints measuring efficacy against medically-attended (MA)-RSV:
- VE vs. hospitalized/emergency department (ED) was based on MA RSV-LRTI with 3+ symptoms; VE vs. physician office (PO)/hospital outpatient (HO) was based on MA-ARI due to RSV.⁹⁻¹⁰
- Costs were from a micro costing study commissioned by Pfizer conducted by Soul Consulting.
- Economic outcomes are expressed in USD (exchange rate 1USD=893.5AR\$, May 2024).

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