Cost-Effectiveness Analysis of RSVPreF3 OA Vaccine in Sweden for Adults Aged ≥ 60 Years

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Vaccinating adults ≥75 years and adults 60-74 with underlying medical conditions with **the adjuvanted RSVPreF3 vaccine is cost-effective** and can **reduce the RSV burden** in **Sweden.**

Digital poster
Supplemental data

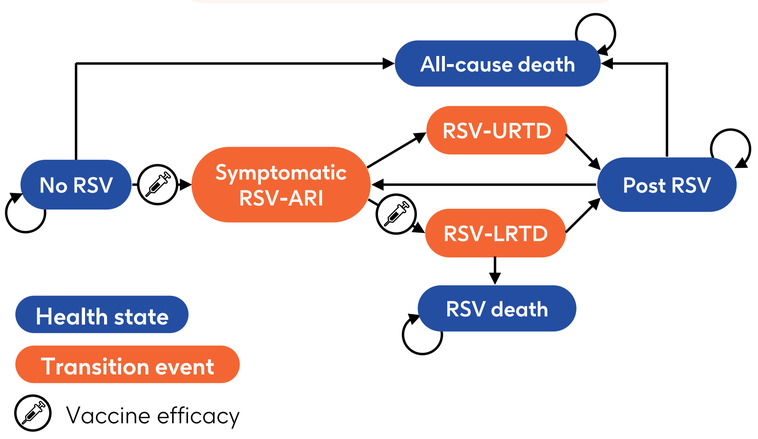
SCAN ME

Aims

This study aims to assess the cost-effectiveness of the adjuvanted RSVPreF3 vaccine, the first approved preventive intervention for RSV in older adults aged ≥60 years in Sweden.

Study design

Static Markov model design



A monthly-cycle static Markov model

- Adults aged **60-74** years who have underlying medical conditions
- Adults aged **≥75** years from general population

Strategies vaccination *vs.* no vaccination

Healthcare system perspective

Time horizon: 5 years

Cost per dose: 2,311 kr

Vaccination coverage:
Adults from general population, 75-84y: 74%
≥85y: 75%
Underlying medical conditions 60-74y: 20%

Discount rates: 3% for costs and utilities

Willingness to pay: 500,000 kr/QALY

Results

Vaccinating population aged ≥75 years as well as 60-74 years with underlying medical conditions averts significant RSV burden, is a cost-effective strategy and provides QALY gains

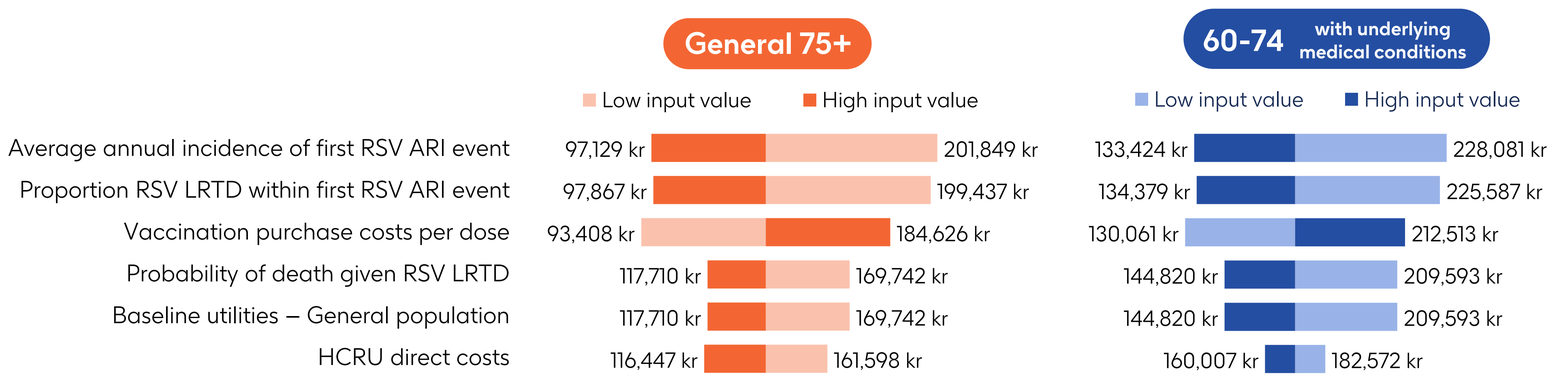
	Averted ARI cases	Averted LRTD cases	Averted hospitalisations	Averted ICU	Averted deaths	Doses administered
General 75+	77,305	68,815	13,638	1,500	1,500	839,257
60-74 with underlying medical conditions	20,130	15,021	1,909	100	210	217,618

	Vaccination costs (kr)	Averted direct costs (kr)	QALYs gained	ICER (kr/QALY)
General 75+	2,142,622,764	960,276,332	8,505	139,017
60-74 with underlying medical conditions	555,579,775	137,670,129	2,440	171,287

Number needed to vaccinate (NNV) to prevent one case of each outcome for both age groups

	ARI cases	LRTD cases	Hospitalisations	ICU	Deaths
General 75+	11	15	150	559	559
60-74 with underlying medical conditions	11	14	114	2,166	1,036

Annual incidence rate of first ARI and proportion of RSV LRTD drive the impact on ICER in univariate sensitivity analysis of the adjuvanted RSVPreF3 vaccine vs no vaccination



Background

- Respiratory syncytial virus (RSV) infections pose a significant health burden among adults aged ≥60 years in high income countries[1].
- International data show an annual incidence of 3-7% in healthy older adults, and 4-10% for risk groups, such as those with underlying cardiopulmonary diseases[2].
- The adjuvanted RSVPreF3 vaccine has been approved for the prevention of RSV-LRTD in individuals 50 years of age and older in Europe[3].

Conclusions

A **substantial health burden** could be **avoided by vaccinating Swedish adults** ≥75 years and adults 60-74 with underlying medical conditions with the adjuvanted RSVPreF3 vaccine.

This intervention is **cost-effective** for both considered populations.

Abbreviations

ARI: acute respiratory infection, **ICU**: intensive care unit, **HCRU**: health care resource use, **LRTD**: lower respiratory tract disease, **NNV**: number needed to vaccinate, **RSVPreF3** : respiratory syncytial virus prefusion F, **RSV**: respiratory syncytial virus, **URTD**: upper respiratory tract disease, **QALY**: quality-adjusted life year, **WTP**: willingness-to-pay, **y**: years

References

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2. Falsey AR et al., *N Engl J Med*, 2005;352(17): 1749-59.
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Disclosures

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Conflicts of interest: KM is employed by GSK. EZ is employed by GSK and holds financial equities in GSK. LD was employed by GSK at the time of study conduct (LD is now employed by Otsuka Pharma Scandinavia, Stockholm, Sweden). The authors declare no other financial and non-financial relationships and activities.

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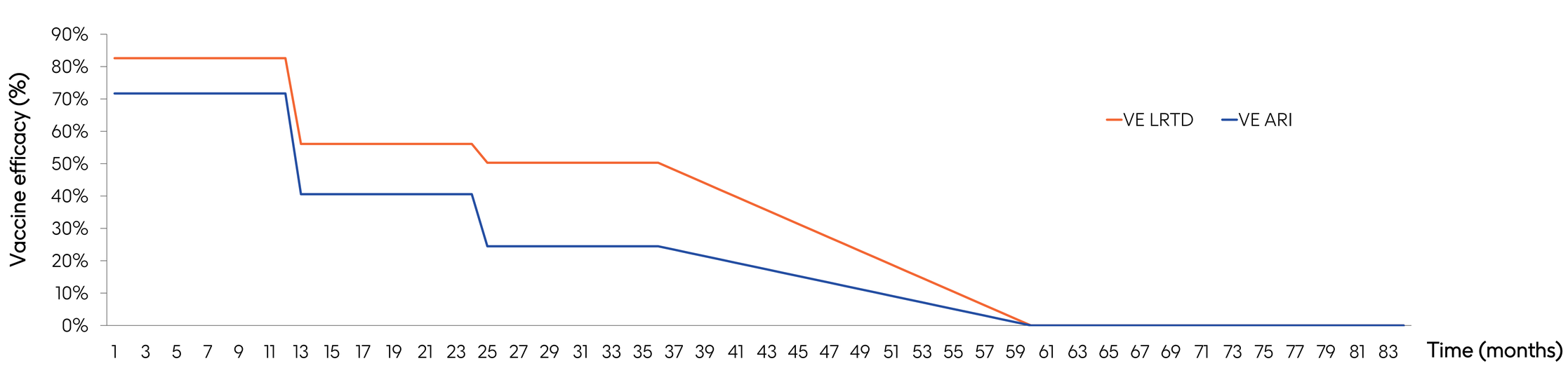
Supplementary Material

Assumptions used in the RSV model		
Average annual incidence of first RSV ARI event	General	Comorbid
60-64 years	5.67%	5.67%
65-69 years	5.67%	5.67%
70-74 years	5.67%	5.67%
75-79 years	5.67%	5.67%
80-84 years	5.67%	5.67%
85-89 years	5.67%	5.67%
90-109 years	5.67%	5.67%
Reference	Korsten et al [1]	
Proportion RSV LRTD within first RSV ARI event	General	Comorbid
60-64 years	47.6%	47.6%
65-69 years	47.6%	47.6%
70-74 years	47.6%	47.6%
75-79 years	47.6%	47.6%
80-84 years	47.6%	47.6%
85-89 years	47.6%	47.6%
90-109 years	47.6%	47.6%
Reference	Papi et al [2]	
Proportion of hospitalisations per RSV LRTD event	General	Comorbid
60-64 years	6.1%	12.7%
65-69 years	6.1%	12.7%
70-74 years	6.1%	12.7%
75-79 years	20.8%	30.0%
80-84 years	20.8%	30.0%
85-89 years	31.8%	45.8%
90-109 years	31.8%	45.8%
Reference	Osei-Yeboah et al, Fleming et al, Statens Serum Institut [3-5]	
General population - Coverage	General	Comorbid
First Dose, 60-64 years	61%	20%
First Dose, 65-69 years	61%	20%
First Dose, 70-74 years	61%	20%
First Dose, 75-79 years	74%	20%
First Dose, 80-84 years	74%	20%
First Dose, 85-89 years	75%	20%
First Dose, 90-109 years	75%	20%
Reference	Assumption	
Case-fatality rate	General	Comorbid
60-64 years	11%	11%
65-69 years	11%	11%
70-74 years	11%	11%
75-79 years	11%	11%
80-84 years	11%	11%
85-89 years	11%	11%
90-94 years	11%	11%
95-99 years	11%	11%
100+ years	11%	11%
Reference	Hedberg et al [6]	

Model Vaccine Efficacy



Abbreviations

ARI: acute respiratory illness, **RSV**: respiratory syncytial virus, **LRTD**: lower respiratory tract disease, **VE**: vaccine efficacy.

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