

Cost-effectiveness analysis of maternal immunization with RSVpreF vaccine for prevention of Respiratory Syncytial Virus among infants in Spain

Authors: Javier Álvarez Aldean¹; Irene Rivero Calle²; Rosa Rodríguez Fernández³; Susana Aceituno Mata⁴; Alba Bellmunt⁴; Miriam Prades⁴; Amy W. Law⁵; Alejandra López-Ibáñez de Aldecoa⁶; Cristina Méndez⁶; María L. García Somoza⁶; Javier Soto⁷; Virginia Lozano⁶

Affiliation:

1. Hospital Costa del Sol, Marbella, Málaga, Spain
2. Hospital Clínico Universitario de Santiago de Compostela, A Coruña, Spain
3. Hospital Gregorio Marañón, Madrid, Spain
4. Outcomes'10 S.L., Castellón de la Plana, Castellón, Spain
5. Pfizer, Inc., New York, United States
6. Pfizer S.L.U, Alcobendas, Madrid, Spain
7. Former Pfizer S.L.U employee, Madrid, Spain

Corresponding author:

Alba Bellmunt

Market Access, Outcomes'10, Avda Vicente sos banyat, s/n Espaitec 2, 3^a planta,
12006, Castellón, Spain

Email: abellmunt@outcomes10.com

SUPPLEMENTARY MATERIAL

Supplementary Table S1. Relative rate of RSV by age and term status

Term status	Age (months)			Reference
	0 - <3	3 - <6	6 - <12	
Full term (≥ 37 wGA)	1.0	1.0	1.0	
Late preterm (32-36 wGA)	1.7	2.5	1.7	
Early preterm (28-31 wGA)	0.5	2.4	6.8	Rha et al. 2020[1]
Extreme preterm (≤ 27 wGA)	0.5	2.4	6.8	

wGA: week of gestational age

Supplementary Table S2. Distribution of RSV cases by calendar month

Calendar month	Distribution of RSV cases	Reference
January	39.2%	
February	15.8%	
March	6.4%	
April	1.3%	
May	0.1%	
June	0.3%	
July	0.1%	
August	0.1%	
September	0.0%	
October	0.8%	
November	7.6%	
December	28.3%	

ISCIII: Instituto de Salud Carlos III; RSV: respiratory syncytial virus

Supplementary Table S3. General infant mortality rate (per 1,000 live births) by age

Age (months)	Infant mortality rate [3]
<1	1.87
1- <2	0.3
2 - <3	0.11
3 - <4	0.07
4 - <5	0.07
5 - <6	0.07
6 - <7	0.06
7 - <8	0.05

8 - <9	0.05
9 - <10	0.03
10 - <11	0.02
11 - <12	0.03

Supplementary Table S4. Variables and probability distributions used in the probabilistic model

Variable	Distribution	Alpha	Beta
Disease incidence			
RSV Hospitalization	Beta	428.00	7,198.00
RSV ED encounters		687.00	6,939.00
RSV PC encounters		991.00	6,635.00
RSV-related mortality	Beta	154.00	110,075.00
Maternal vaccine effectiveness	Beta	18.02	4.02
Disutility due to			
RSV Hospitalization	Beta	5.74	359.26
RSV ED encounters		2.24	362.76
RSV PC encounters		2.24	362.76
		Mean	SE
Direct costs of disease			
RSV Hospitalization	Log-Normal	3,487.35	154.80
RSV ED encounters		408.00	12.50
RSV PC encounters		486.00	20.85

ED: emergency department; PC: primary care; RSV: respiratory syncytial virus; SE: standard error

REFERENCES

1. Rha B, Curns AT, Lively JY, Campbell AP, Englund JA, Boom JA, et al. Respiratory Syncytial Virus-Associated Hospitalizations Among Young Children: 2015-2016. *Pediatrics*. 2020;146(1).
2. Instituto de Salud Carlos III. Vigilancia en salud pública-RENAVE. Temporada 2018-2019. Disponible en: https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Paginas/Temporada_Gripe_2018-19.aspx. Accedido en junio, 2023.
3. “Statistics National Institute (INE)”, <https://www.ine.es/>, 2019.