Projected Public Health Benefits of Nirsevimab for RSV Prevention in Infants in Greece

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Key Takeaways

- ***45,454 MALRTIs → 16,520 with nirsevimab (−64%)***
- ***2,716 hospitalizations → 868 (−68%)***
- ***€20.4 million saved (mainly from avoided hospitalizations)***

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OBJECTIVE

- This study evaluates the public health impact of introducing nirsevimab into the Greek national immunization program for Respiratory Syncytial Virus (RSV) prevention in all infants, compared to the current standard of care (SoC), palivizumab in eligible infants.

BACKGROUND

- RSV is a leading cause of acute lower respiratory infections, especially in infants under 12 months, and places a considerable burden on pediatric services during seasonal epidemics.[1]

METHODS

- A **static population-level** model was developed to estimate the reduction in RSV-related outcomes in infants over their first RSV season. The season considered is November - March with a peak in January.
- Data inputs were sourced from Greek epidemiological datasets and international published literature when local data were not available. Cost data were obtained from Diagnosis-Related Groups (DRG) tariffs. Key model inputs are summarized in Table 1.
- Efficacy estimates were based on pivotal clinical trials for nirsevimab and meta-analysis of RCTs for palivizumab.

Target population and risk stratification:

The model stratified the target population into three groups for RSV-related LRTDs: **Late preterm and term infants** [≥35 weeks gestational age (wGA)], **Preterm infants** (29 to <35 wGA, ineligible for palivizumab), **Palivizumab eligible infants**: ≤28 wGA and ≤12 months; 29-35 wGA and ≤6 months; or ≤24 months with bronchopulmonary dysplasia, congenital heart disease, immunodeficiency, or down syndrome.

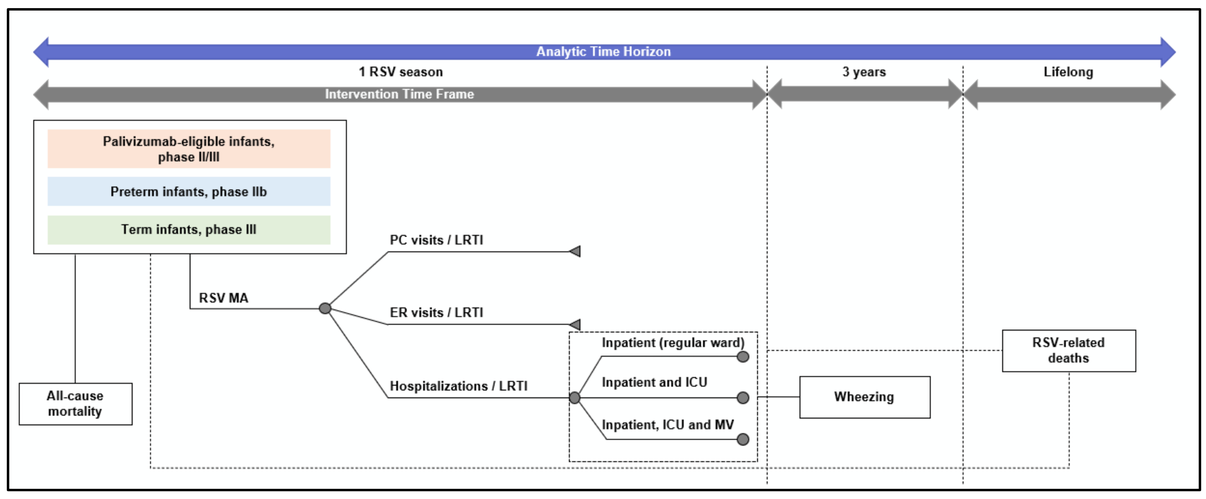
Vaccination strategy:

SoP: Monthly palivizumab administered during RSV season for eligible infants only. No prophylaxis for preterm and term infants.

Nirsevimab: Single dose administered at birth for infants born during RSV season or at season start for those born before the season.

Coverage rate inputs were based on current RSV market data for palivizumab and internal market projections for nirsevimab.

Figure 1: Model Structure



Abbreviations: PC: Primary Care, ER: Emergency Room, LRTIs: Lower Respiratory Tract Infections, ICU: Intensive Care Unit, MV: Mechanical Ventilation, RSV: Respiratory Syncytial Virus

Table 1: Model Inputs

Parameter	Value
Populational parameters	
Birth Cohort (2024)	71,249[2]
Palivizumab-Eligible Infants	1.92%[3,4]
Preterm Infants non-eligible to palivizumab	5.19%[3]
Term Infants	92.89%
Vaccine prevention efficacy	
Inpatient with palivizumab	56%[5]
Inpatient with nirsevimab (palivizumab eligible infants)	56%[6]
Inpatient with nirsevimab (preterm infants)	83%[7]
Inpatient with nirsevimab (term Infants)	83%[7]
Outpatient with nirsevimab (palivizumab eligible infants)	56%[6]
Outpatient with palivizumab	56%[5]
Outpatient with nirsevimab (preterm infants)	86%[5]
Outpatient with nirsevimab (term Infants)	76%[8]
Coverage Rate	
Nirsevimab	89,5%
Palivizumab (palivizumab-eligible infants only)	90%

CONCLUSIONS

Immunization with nirsevimab in Greece could offer a new effective strategy to reduce RSV-related morbidity and healthcare demand, while maintaining healthcare system sustainability.

Nirsevimab uptake would not only address a critical unmet medical need but also help relieve pressure on Greece's already stretched healthcare system and strengthen its capacity for future challenges.

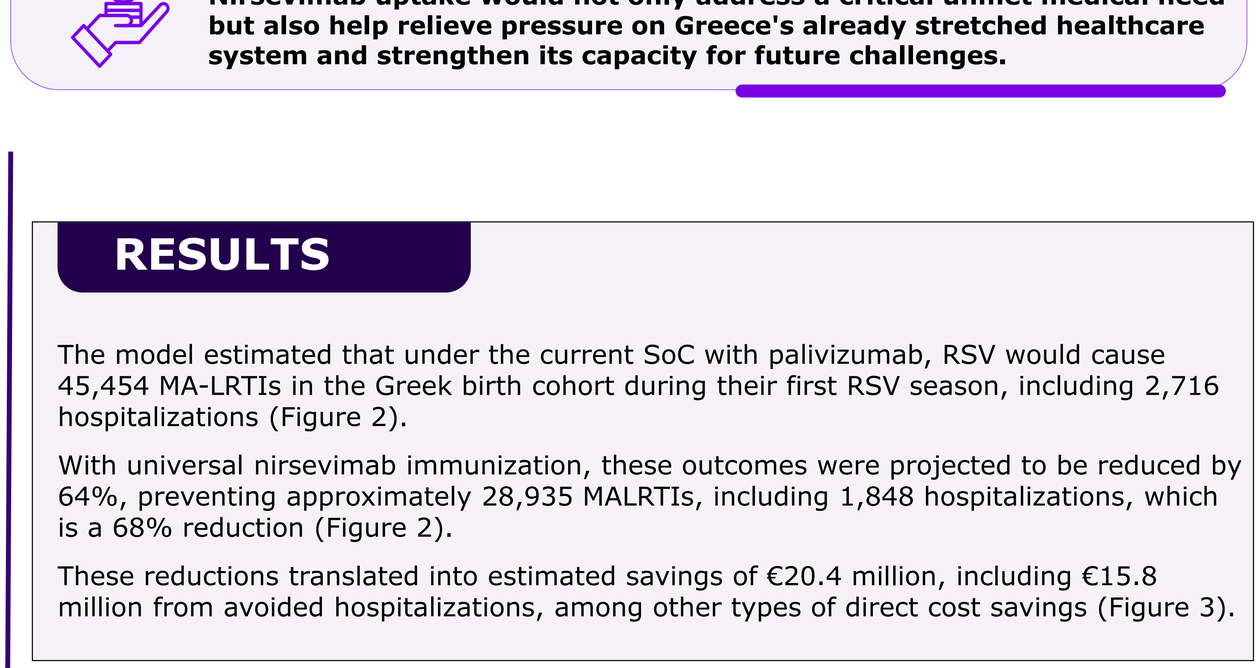
RESULTS

The model estimated that under the current SoC with palivizumab, RSV would cause 45,454 MA-LRTIs in the Greek birth cohort during their first RSV season, including 2,716 hospitalizations (Figure 2).

With universal nirsevimab immunization, these outcomes were projected to be reduced by 64%, preventing approximately 28,935 MALRTIs, including 1,848 hospitalizations, which is a 68% reduction (Figure 2).

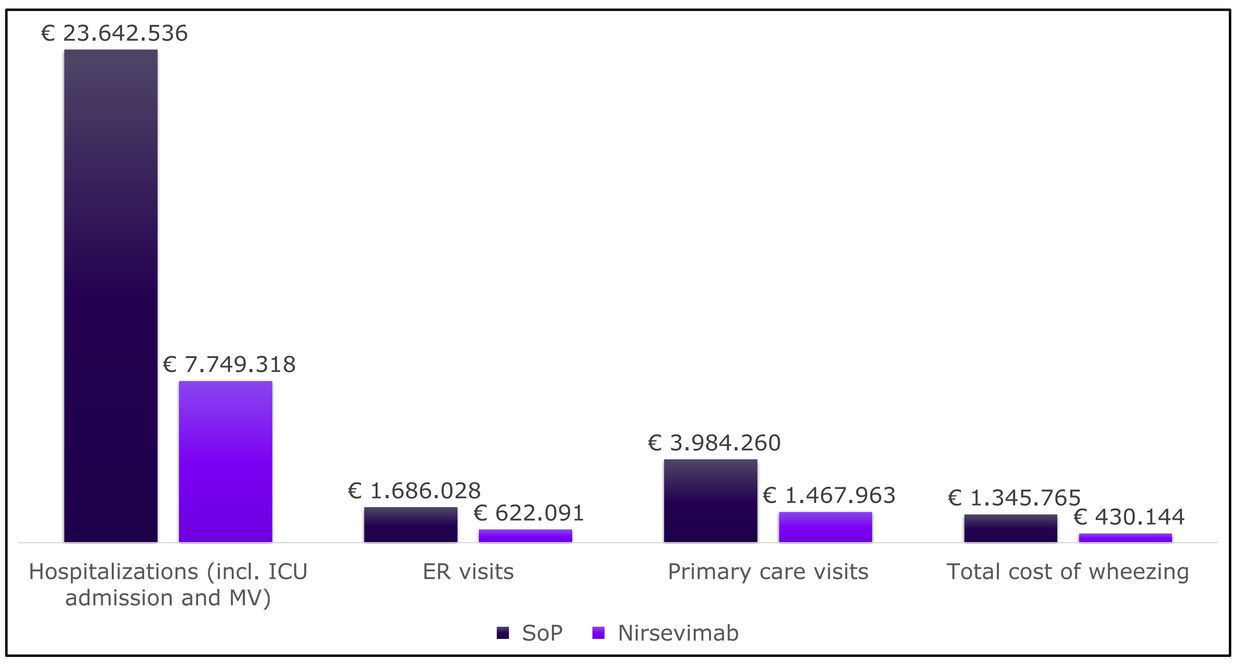
These reductions translated into estimated savings of €20.4 million, including €15.8 million from avoided hospitalizations, among other types of direct cost savings (Figure 3).

Figure 2: Health outcomes per type of outcome and type of prophylaxis



Abbreviations: ER: Emergency Room, ICU: Intensive Care Unit, MV: Mechanical Ventilation

Figure 3: Costs outcomes per type of outcome and type of prophylaxis



ER: Emergency Room, ICU: Intensive Care Unit, MV: Mechanical Ventilation

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