

Economic Burden of Hospitalized Respiratory Syncytial Virus Infection Among Children in Spain, 2016–2019

EE31



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INTRODUCTION

- Respiratory syncytial virus (RSV) is a major cause of acute lower respiratory infection among children^{1,2}
- The economic burden of RSV is mainly driven by hospitalization costs²
- Risk factors for severe RSV include prematurity and high-risk comorbidities
- Previously reported mean cost per RSV hospitalization episode in children in Spain was limited to children aged <5 years and by risk profile²

OBJECTIVES

- To quantify the costs of hospitalized episodes and estimate the total hospitalization costs of RSV in children <18 years to the Spanish National Healthcare System between 2016–2019
- To further characterize the costs in children hospitalized with RSV by age group, prematurity and risk profile
- To compare RSV and influenza hospitalization costs

METHODS

Study design

- Retrospective observational database study

Data source

- Minimum Basic Data Set (MBDS), Spanish hospital discharge database that reports >90% of admissions³

Study population

- Children aged <18 years hospitalized for RSV-specific ICD-10 codes (B97.4, J21.0, J12.1, J20.5) and influenza-specific codes (J9, J10, J11) between 2016 and 2019

Study outcomes

- Mean cost per hospitalization episode (€, 2022) was reported by risk category (low and high) and age group (0–5m, 5–11m, 12–23m, 2–5y, 6–17y). Infants aged <6 months were further classified by prematurity (full term: ≥37 weeks gestational age (wGA), late preterm: 32–36 wGA, early preterm: 28–31 wGA, extreme preterm: ≤27 wGA)
- Total annual hospitalization costs for RSV and influenza were calculated from population incidence rates previously reported in the same population⁴ and the mean cost per episode from this study

RESULTS

- During 2016–2019, a total of 45,799 children, including 262 preterm, were hospitalized with RSV. While 8,525 were hospitalized with influenza, including 12 pre-term
- The mean cost per hospitalization episode was highest for RSV cases aged 0–5 months with at least one risk factor (€4,768 high vs €2,852 low risk) while the mean cost ranged from €3,664–4,413 for high risk and €2,733–3,529 for low-risk children of other ages (Figure 1)
- The mean cost per hospitalization episode for influenza was highest for cases aged 6–17 years with at least one risk factor (€5,392 high vs €2,662) and ranged from €3,134–4,210 for high risk and €2,081–2,435 for low-risk children of other ages (Figure 1)
- Among preterm infants, the mean cost per hospitalization episode ranged from €3,238–44,594 (Table 1)

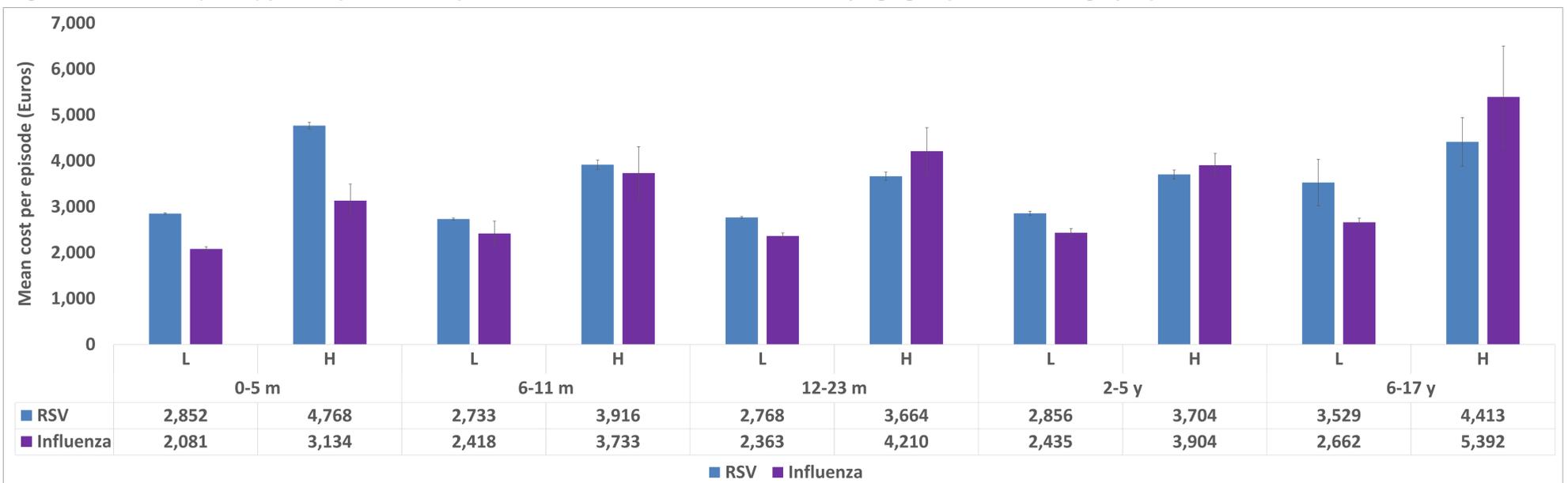
Table 1. Mean cost (euros) per hospitalization episode by age group and term status for infants <6 months, Spain, 2016–2019

	<1 month	1 month	2 month	3–5 month
Full term (≥37 wGA)	4,285	3,555	3,324	3,238
Late preterm (32–36 wGA)	7,503	6,914	7,621	5,955
Early preterm (28–31 wGA)	9,743	8,823	7,456	4,332
Extreme preterm (≤27 wGA)	44,594	--	12,480	6,582

wGA: weeks gestational age

- Total mean annual estimated costs for children 0–17 years were higher for RSV than for influenza: €39.3M for RSV vs €5.9M for influenza
- Total annual estimated costs for RSV increased during the study period (€35.4M in 2016 to €44.8M in 2019) but did not for influenza (€7.5M in 2016 to €7.0M in 2019)
- Infants aged <6 months accounted for 66% (2016) and 59% (2019) of all RSV hospitalization costs

Figure 1. Mean cost (euros) per hospitalization episode for RSV and influenza in children by age group and risk category. Spain, 2016–2019



L = low risk, H = high risk (bronchopulmonary dysplasia, anatomic lung abnormalities, congenital heart disease, immunodeficiency, chromosomal abnormalities, other respiratory-related conditions present at birth, m: months, y: year)

LIMITATIONS

- This study includes only the cases in which RSV was coded as primary or secondary diagnosis, not all unspecified lower respiratory tract infections, so several cases may have been missed

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DISCLOSURES

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CONCLUSIONS

- RSV infection has a substantial economic burden amongst children in Spain
- Majority of the burden is attributed to infants <6 months
- Compared with influenza, RSV has substantially higher economic burden especially amongst younger children

REFERENCES

- Heppe-Montero M, Walter S, Hernández-Barrera V, et al. BMC Infect Dis. 2022;22(1):315.
- Martinón-Torres F, Carmo M, Platero L, et al. BMC Infect Dis. 2023;23(1):385.
- Registro de Actividad de Atención Especializada: RAE-CMBD. Ministerio de Sanidad; 2022.
- Haeberer M, Torres A, Bruyndonckx R, et al. European Respiratory Society International Congress 2023; September 9-13, 2023, Milan, Italy