Exploring the Broader Value of Adult Respiratory Vaccination Programmes in Greece: A Public Health Perspective

EPH106

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Introduction & Objective

- Respiratory diseases such as influenza, pneumococcal disease (PD), respiratory syncytial virus (RSV), and COVID-19 continue to impose a substantial clinical and economic burden on older adults [1-4].
- Vaccination against certain respiratory pathogens is recommended from Greek National Immunization Program (NIP), among other vulnerable populations, for individuals aged 60 years or older. [5]. However, the actual uptake among older adults remains suboptimal.
- Factors such as vaccine hesitancy and limited public awareness contribute to persistent immunization gaps diminishing the potential impact of national vaccination policies [6].
- While the inclusion of adult vaccines in the NIP demonstrates public health commitment, the broader societal and economic value of adult vaccination under the optimal uptake remains insufficiently quantified.
- **This study aims to estimate the broader socio-economic benefits of achieving optimal vaccination coverage levels against specific respiratory diseases in Greek adults aged 60 and over.**

Methods

- A Benefit–Cost Analysis (BCA) was conducted from a societal perspective to evaluate the health and economic value of vaccination programmes for PD, RSV, influenza, and COVID-19 infections in Greece targeting adults aged 60 and over.
- Static deterministic models were developed for each pathogen, incorporating Greek-specific epidemiological data, healthcare utilization, direct and indirect medical costs, morbidity, mortality, and productivity losses. Input parameters were sourced from published studies and official Greek and EU datasets [3,7-8].
- Benefits were monetized over each cohort's remaining lifetime, using a cost-of-illness approach for morbidity and the value of a statistical life (VSL) or the value of a statistical life year (VSLY) for mortality. VSL estimates provide an age agnostic valuation of mortality while VSLY estimates provide an age-adjusted mortality valuation. VSL value was obtained from official source [9].
- Outcomes included Net Benefits (NB) and Benefit–Cost Ratios (BCR) under an optimal 75% coverage scenario, compared to a no-vaccination baseline over 1-year, 5-year, 10-year and lifetime horizons. Costs and benefits were discounted at 3.5%.
- The numbers of hospitalizations, hospital bed days, outpatient visits, and deaths averted as a result of each vaccination program were estimated across all time horizons.
- A scenario analysis was conducted using the most recent vaccination coverage rates available in Greece for the adult population (≥60 years) at the time of the analysis. These observed rates were compared against the optimal 75% coverage scenario to estimate the value forgone — i.e., the health and economic benefits that are currently unrealized due to suboptimal vaccine uptake.

Results

- The substantial benefits of achieving optimal vaccination coverage levels for adult aged 60 and over become evident within the first year of analysis and increase progressively over time, both in terms of health outcomes and broader socioeconomic value (Figure 1).
- Over a lifetime horizon, achieving the targeted vaccination coverage is projected to prevent over 1.1 million medically attended cases and avert 17,638 deaths (Figure 2).

Figure 1: Net Benefits under an optimal 75% coverage scenario, compared to a no-vaccination over 1-year, 5-year, 10-year and lifetime horizons

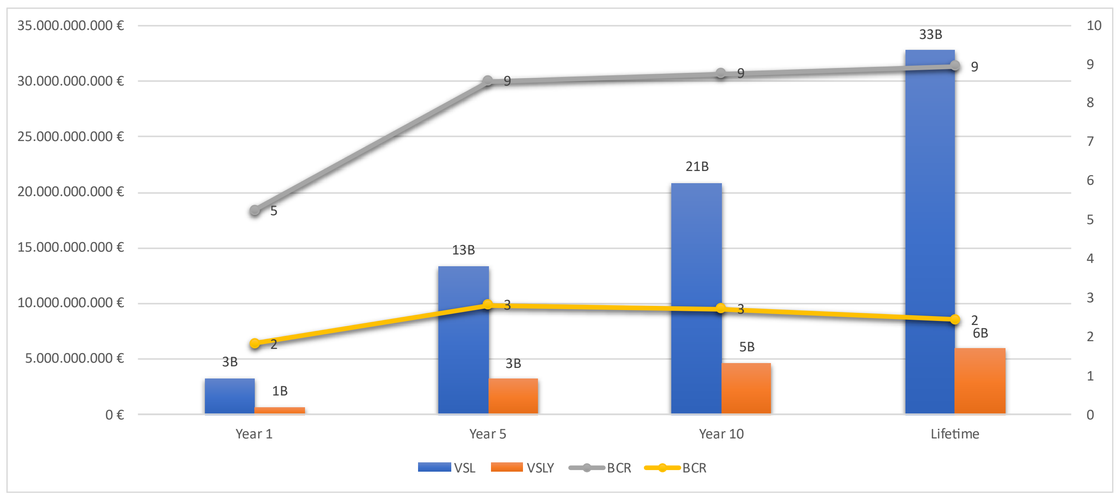
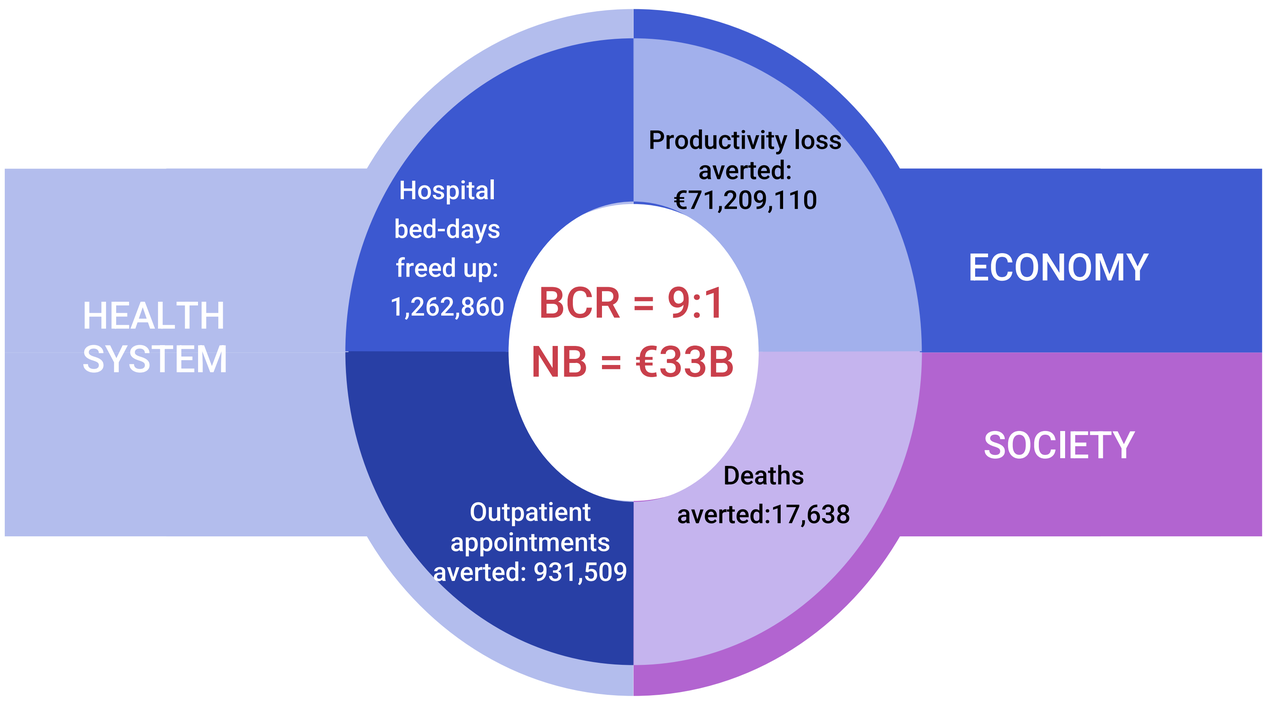


Table 1: Scenario analysis results with the most recent adult vaccination coverage rates in Greece

Benefit Category	Year 1	Year 5	Year 10	Lifetime
Hospitalized cases prevented	2,595	11,455	19,696	30,622
Hospital bed-days freed up	15,890	69,083	117,776	182,375
Outpatient cases prevented	22,681	96,390	160,937	245,551
Non-medically attended cases prevented	28,046	115,205	191,758	291,408
Deaths averted	190	846	1,465	2,297
Net monetary Benefits	0.33 B	1.66 B	2.88 B	4.5 B

- The estimated societal BCR of the four vaccination programmes ranges from €9 for €1 spent (VSL) to €3 for €1 spent (VSLY) over lifetime (Figure 2). These results translate into net monetary benefits of €33 billion and €6 billion, respectively (Figure 1).
- Achieving aspirational coverage levels in adult respiratory immunization programmes substantially alleviates healthcare system burden, enhances workforce productivity, and prevents morbidity and mortality (Figure 2).
- The scenario analysis based on the most recent adult vaccination coverage rates available in Greece for the population aged ≥60 years, demonstrated that adult respiratory immunization programmes, under the lifetime horizon, could prevent over 275,000 medically attended cases and avert 2,297 deaths, generating net monetary benefits exceeding €4 billion (Table 1).

Figure 2: Lifetime BCR and NMB with sub-outcomes for base case scenario



Conclusions

- **Improving adult respiratory vaccination coverage in Greece could yield substantial health and socioeconomic gains. These findings demonstrate that adult immunisation represents a highly valuable public health strategy, offering strong societal returns in both lives saved and costs averted.**
- **Achieving higher uptake of existing programs would not only alleviate disease burden but also contribute to the long-term sustainability of the Greek healthcare system and economy, especially in the context of an ageing population, rising multimorbidity, and ongoing fiscal pressures on the public sector.**
- **Given the recognition of the value of vaccination through the broad NIP in Greece, the key opportunity lies in bridging the implementation gap by scaling up targeted public awareness campaigns, strengthening the role of primary care providers, and addressing any barriers, with the ultimate goal of increasing vaccine coverage rates among older adults in Greece.**
- **Strengthening adult respiratory immunization delivers not only strong economic returns but also aligns with Greece's broader health system priorities of resilience and sustainability.**

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Disclosures

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AS, VK, IA, TH and DM are employees of and may hold shares in Pfizer.
MN, SB and LS are employees of OHE which was contracted by Pfizer to conduct this study.
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