Cost-Effectiveness and Budget Impact of High-Dose Trivalent Influenza Vaccine Efluelda® in Older Adults: A Greek Healthcare System Perspective

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High-dose influenza vaccine was shown to be a cost-effective strategy for older adults, reducing influenza-related hospitalizations and deaths despite higher acquisition costs.

OBJECTIVE

This study aims to assess the **cost-effectiveness** and **budget impact** of the HD trivalent influenza vaccine (Efluelda®) compared to standard-dose vaccines in adults aged 65 and older, as recommended by European Medicines Agency (EMA) the **national immunization calendar** in Greece.[3]

BACKGROUND

- The burden of influenza in elderly is high in Greece, with an estimated 23.6 deaths per 100,000 population per year, with the vast majority occurring in people ≥ 65.
- **High-dose** (HD) influenza vaccines, such as Efluelda®, have demonstrated **superior clinical effectiveness** in this vulnerable population.[2]
- A recent individual randomized study, FLUNITY-HD demonstrated that HD influenza vaccine significantly reduced both all-cause hospitalizations and cardiorespiratory hospitalizations in older adults compared to SD vaccine.
- Greece has a significantly higher vaccination coverage in elderly compared to EU average, however, **robust economic evaluations** tailored to the Greek healthcare context are currently lacking.

METHODS

- The model that was developed relies on a decision tree structure (Figure 1) during one influenza season to compare Efluelda® to standard of care (standard-dose influenza vaccines).
- The model adopted the perspective of the **Greek public payer**, utilizing clinical-epidemiological data and direct medical costs, which derived from Greek relevant published studies, national statistics data and Greek DRG tariffs (Table 1).[4-7]
- The model used a discount rate of 3.5% for health outcomes.
- Deterministic sensitivity analysis (DSA), probabilistic sensitivity analysis (PSA), and threshold analyses were performed to test model robustness and pricing flexibility.
- A complementary **budget impact analysis** estimated system-wide savings associated with the introduction of Efluelda®.

Figure 1: Model structure

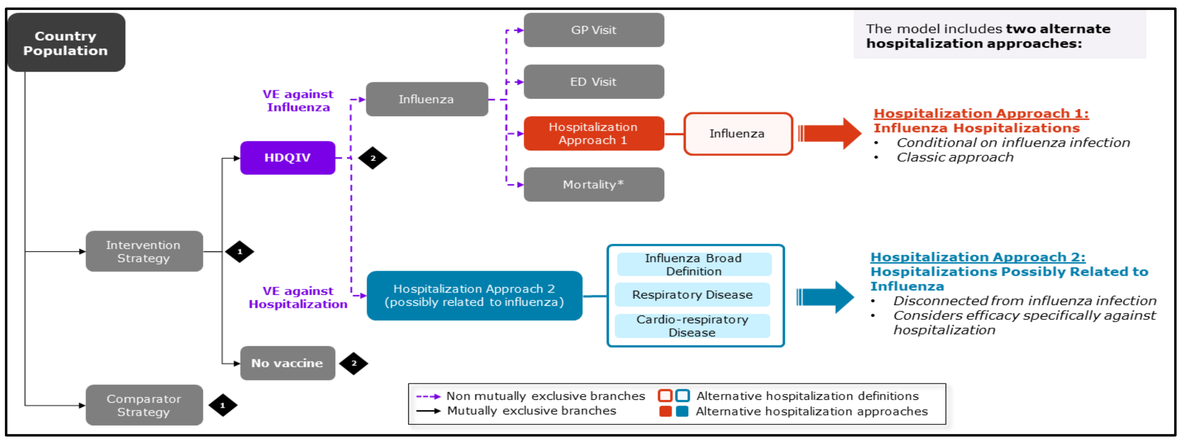


Table 1: Selected inputs of the model

Parameter	Value
Relative vaccine effectiveness vs.SD (%)	24.2%[2]
Hospitalization rate (per 100,000) for 60-74 years old	671[7]
Hospitalization rate (per 100,000) for ≥75 years old	2,749[7]
Mortality rate ≥60 years old (per 100,000)	100,50[5]
Respiratory hospitalization cost (€)	4,914[8]
Cost of HD vaccine (€)	32.75[9]
Cost of SD vaccine (€)	10.76[9]

CONCLUSIONS

- **Efluelda® offers a cost-effective and potentially cost-saving intervention for influenza prevention in Greek adults aged 65 and older.**
- **Its adoption can lead to significant public health gains net savings or manageable budget impact for healthcare systems through avoided disease burden.**
- **These findings further support the inclusion of Efluelda® in national vaccination strategies**

RESULTS

ICER

The base-case analysis showed an ICER of **€10,274** per QALY and **€8,109** per LY gained, with a QALY gain of 0.000832 per vaccinated individual.

Threshold Analysis

Threshold analysis confirmed cost-effectiveness at the level of €10,000/QALY threshold with its current price (Figure 2).

Sensitivity Analysis

PSAs showed **59%** probability of cost-effectiveness at the Greek GDP per capita (€25,300) and 100% at €30,000 (Figure 3).

Public health and Budget Impact

HD vaccine has the potential to reduce influenza cases by 18,933, hospitalizations by 4,100 and death by 353. This impact translates to a Budget impact of **€13 million in net savings**, mainly from reduced respiratory-related hospitalizations (€12.2 million), Figure 4.

Figure 2: Threshold Analysis for Vaccine Cost-Effective Price

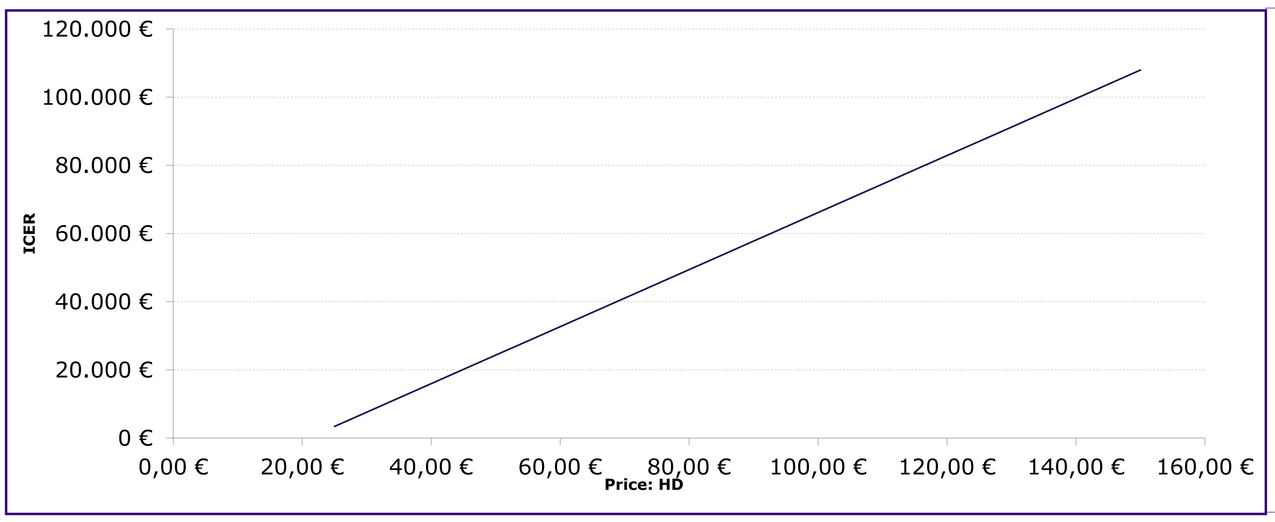


Figure 3: Cost-Effectiveness Acceptability Curve

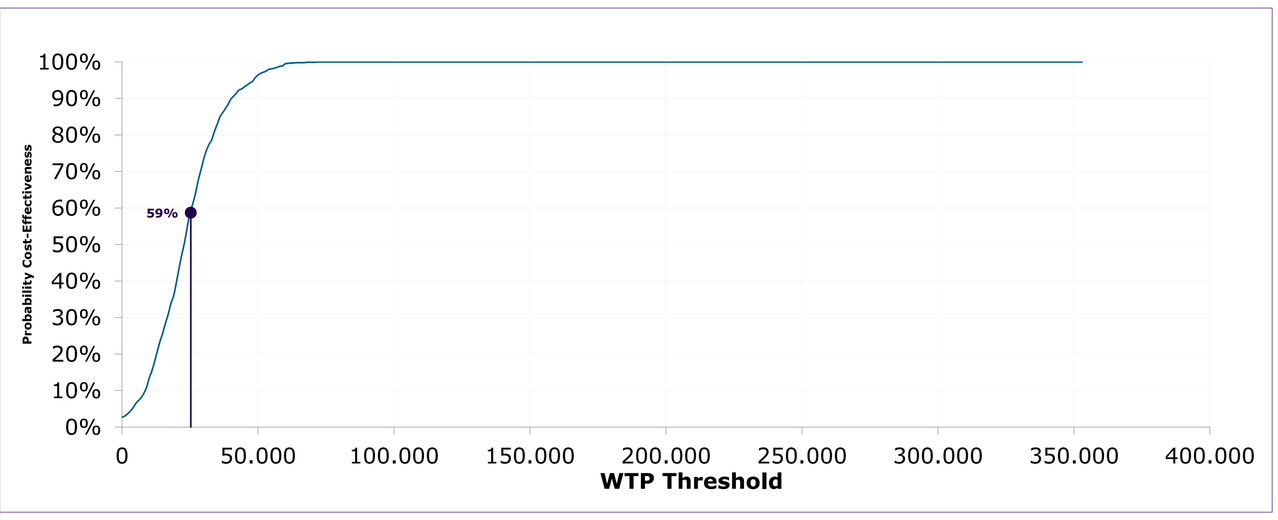
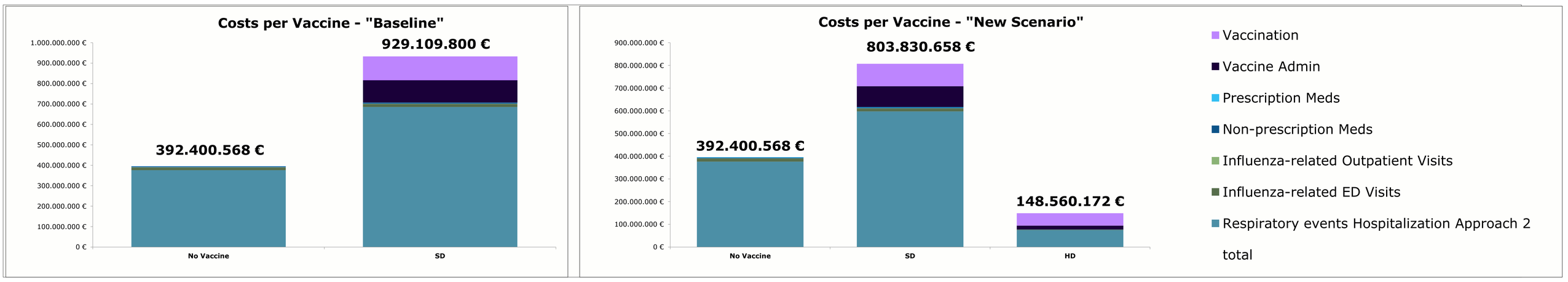


Figure 4: Budget Impact Analysis



•**REFERENCES: 1.** CDC, Older Adults & Influenza, 2024.,2. DiazGranados CA et al., N Engl J Med, 2014.,3. Ministry of Health, National Adult Immunization Program 2025: Schedule and Recommendations, 2025.4.Greek Institute for DRG, Υλικό – ΚΕ.ΤΕ.Κ.Ν.Υ., retrieved October 21, 2025.,5. Lytras T et al., Euro Surveill, 2019.6. Eurostat, Life Table by Age and Sex, European Commission, retrieved October 21, 2025.7.Teloniatis S et al., Pneumon, 2017, 8. Li X et al., Clin Drug Investig, 2021, 9. Ministry of Health, Update of the Drug Price Bulletin with Incorporation of Administrative Changes, 2025.

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