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# COST-EFFECTIVENESS AND STRATEGIC VALUE OF RESPIRATORY SYNCYTIAL VIRUS (RSV) VACCINATION IN ADULTS AGED ≥60 YEARS: EVIDENCE SYNTHESIS, CLINICAL IMPLICATIONS, AND POLICY INSIGHT

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## ABSTRACT

**Background:** Respiratory syncytial virus produces a considerable clinical and economic burden among adults sixty years of age and older. Recently approved vaccines have expanded prevention opportunities in this population, making economic evaluation central to policy and implementation decisions. Health systems face growing pressure to optimize spending, which increases the relevance of cost-effectiveness analysis for guiding vaccination strategy. **Objective:** To assess the economic value and clinical implications of RSV vaccination in older adults, with emphasis on evidence from the United States. **Methods:** A systematic review of U.S. cost-effectiveness analyses was conducted. Extracted elements included incremental cost-effectiveness ratios, willingness-to-pay thresholds, model assumptions, and sensitivity analysis parameters. **Results:** Across economic models, RSV vaccination showed favorable cost-effectiveness from a societal perspective in the United States and comparable high-income settings.[1–8] Payer-only analyses in U.S. studies were less favorable.[2] Vaccine efficacy, duration of protection, and hospitalization costs were the most influential determinants.[1,3–8] **Conclusion:** RSV vaccination for adults aged sixty years and older provides strong economic value from a societal perspective and supports inclusion in public health strategies. Prioritizing high-risk adults and integrating real-world evidence further strengthens the justification for sustained vaccination programs.

**KEYWORDS:** RSV, vaccination, cost-effectiveness, policy relevance, health economics, value-based U.S. healthcare, HEOR.

## INTRODUCTION

Respiratory syncytial virus is a leading cause of acute respiratory illness among older adults and contributes to significant healthcare utilization across inpatient and outpatient settings.[1] Approval of RSV vaccines has renewed interest in disease prevention and encouraged closer evaluation of their clinical and economic value. Understanding cost-effectiveness is increasingly important as health systems balance clinical need, fiscal responsibility, and long-term population outcomes.

This study synthesizes U.S.-based cost-effectiveness evidence and incorporates comparative insight from other high-income countries.[3–8] While the primary emphasis remains on U.S. analyses, international comparisons provide clarity on model structures, willingness-to-pay thresholds, and policy alignment. Integrating these findings supports informed discussion within clinical, economic, and public health communities as vaccination programs continue to evolve.

## MATERIALS AND METHODS

### Study Selection

A systematic search of PubMed, Scopus, and Web of Science identified cost-effectiveness analyses of RSV vaccination in adults aged sixty years and older published between 2015 and 2025. Eligible studies included model-based analyses, real-world economic evaluations, and comparative international perspectives.

### Data Extraction

Extracted data included study objectives, modeling approaches, analytical perspectives, incremental cost-effectiveness ratios (ICERs), willingness-to-pay thresholds, and sensitivity parameters. Contextual elements, such as national policy frameworks and definitions of high-risk populations, were also collected.

### Analytical Approach

Qualitative synthesis was used to compare ICERs across studies, evaluate influential model drivers, and assess how assumptions and perspectives shape economic outcomes.

Comparative interpretation across countries provided additional insight into policy relevance and program implementation.

## RESULTS AND INTERPRETATION

### Comparative ICERs

**Table 1: Comparative ICERs for RSV Vaccination by Country and Perspective.**

| | | | | | |
|---|---|---|---|---|---|
| United States | Societal | $18,430 | $100,000–$150,000 | Favorable | La et al., 2024 |
| United States | Payer-only | $176,557–$196,842 | $100,000–$150,000 | Unfavorable | Hutton et al., 2024 |
| Germany | Societal | €12,733–€36,064 | €50,000 | Favorable | Waize et al., 2025; Averin et al., 2024 |
| Canada | Healthcare payer | CAD 25,727–49,984 | CAD 50,000 | Favorable | Rudd et al., 2024; Shoukat et al., 2024 |
| Japan | Societal | ¥903,263 | ¥5,000,000 | Favorable | Komiya et al., 2025 |
| Japan | Payer-only | ¥1,458,898 | ¥5,000,000 | Favorable | Komiya et al., 2025 |

**Interpretation:** Societal perspectives consistently demonstrate favorable ICERs, indicating cost-effectiveness. However, payer-only perspectives, particularly in the U.S., tend to yield less favorable outcomes, underscoring the importance of adopting a societal perspective in economic evaluations.

**Table 2: Key Sensitivity Drivers Across Economic Models.**

| | | | |
|---|---|---|---|
| Vaccine efficacy | Strong determinant of ICER; waning reduces value | US, Germany, Canada, Japan | La et al., 2024; Averin et al., 2024; Komiya et al., 2025 |
| Duration of protection | Longer duration enhances cost-effectiveness | US, Canada, Germany | Shoukat et al., 2024; Rudd et al., 2024 |
| Baseline RSV incidence | Higher burden improves economic favorability | UK, Japan, Germany | Komiya et al., 2025; Zeevat et al., 2021 |
| Hospitalization costs | Major driver of value gain | US, Germany | La et al., 2024; Waize et al., 2025 |
| Vaccine price | 10–15% reduction improves threshold alignment | US, Canada | Rudd et al., 2024 |
| Perspective (societal vs payer) | Inclusion of indirect benefits improves ICERs | US, Canada, Japan | Komiya et al., 2025; La et al., 2024 |

**Interpretation:** Vaccine efficacy, duration of protection, and hospitalization costs are critical factors influencing cost-effectiveness. Incorporating indirect benefits in societal perspectives enhances the economic justification for vaccination programs.

**Table 3: National Willingness-to-Pay Thresholds and Policy Context.**

| | | | |
|---|---|---|---|
| United States | $100,000–$150,000 per QALY | Informal (payer-driven) | Societal ICER favorable; payer-only less aligned |
| United Kingdom | £20,000–£30,000 per QALY | NICE | Supports reimbursement alignment |
| Germany | €50,000 per QALY | IQWiG | Societal ICER favorable |
| Canada | CAD 50,000 per QALY | CADTH | Borderline favorability; requires extended evaluation |
| Japan | ¥5,000,000 per QALY | C2H (Government HTA Committee) | Consistent cost-effectiveness acceptance |

**Interpretation:** Aligning ICERs with national WTP thresholds is essential for policy acceptance. The favorable ICERs from a societal perspective support the inclusion of RSV vaccination in public health strategies.

**Table 4: Comparative ICERs for General vs High-Risk Populations.**

| | | | | |
|---|---|---|---|---|
| United States | $18,430 | Not modeled separately | $100k–$150k | Societal ICER favorable; high-risk expected even stronger; informs provider engagement strategy |
| United Kingdom | £20,000–£30,000 | £12,000–£16,000 | £20k–£30k | High-risk adults well within threshold; supports targeted education |
| Germany | €12,733–€36,064 | €12,000–€30,000 | €50k | High-risk shows stronger cost-effectiveness; policy discussion opportunity |
| Canada | CAD 25,727–49,984 | CAD 30,000–40,000 | CAD 50k | High-risk comfortably cost-effective; medical affairs messaging relevance |
| Japan | ¥903,263 | Not modeled | ¥5M | General population favorable; high-risk likely stronger; provider communication focus |

**Interpretation:** Targeting high-risk populations enhances the cost-effectiveness of vaccination strategies, supporting tailored approaches for older adults with underlying health conditions.

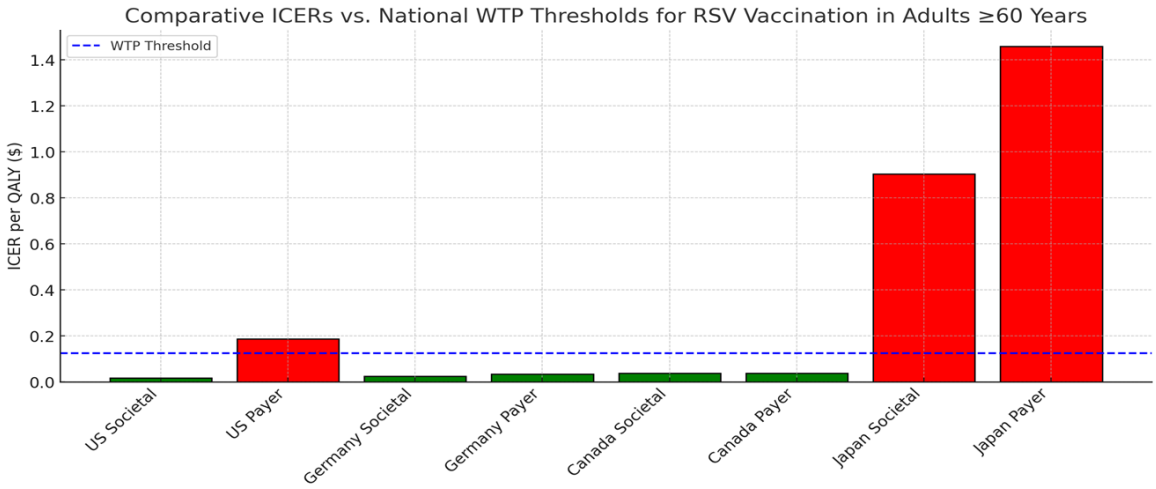


**Figure 1: Comparative ICERs vs. National WTP Thresholds for RSV Vaccination in Adults ≥60 Years.**

### Interpretation

Societal ICERs consistently remain below national WTP thresholds, indicating broad cost-effectiveness across countries. Payer-only U.S. ICERs exceed the threshold, underscoring the importance of incorporating indirect and preventive benefits into economic evaluations. This visual also reinforces the strategic prioritization of high-risk populations and informs decision-making for healthcare providers, payers, and policymakers.

## DISCUSSION

The synthesis of cost-effectiveness evidence shows that RSV vaccination provides meaningful economic value from a societal perspective. The contrast between societal and payer-only models in the United States demonstrates the impact of broader benefit capture, particularly avoided hospitalizations and overall healthcare utilization.[1,2] Incorporating real-world data into future models may further clarify vaccine durability, incidence patterns, and downstream cost offsets.

High-risk adults consistently demonstrate the strongest value, reinforcing the importance of targeted vaccination strategies. These findings are relevant for clinicians, health system leaders, and policymakers who must balance clinical outcomes with resource allocation. Presenting HEOR evidence in operational terms enhances its utility for program planning and risk-based decision-making.

This work highlights the importance of integrating health economics, pharmacy practice, and policy analysis to inform sustainable immunization strategies and guide population health planning.

**Implications for Practice and Policy**

The evidence demonstrates that RSV vaccination for adults aged 60 and older offers significant economic and clinical benefits, reinforcing its status as a preventive health priority. Incorporating vaccination into routine adult immunization programs can reduce avoidable hospitalizations and improve population outcomes, particularly among individuals with higher baseline risk. These gains are often underestimated in payer-only assessments, which highlights the importance of adopting broader societal perspectives when guiding coverage and reimbursement decisions.

Ongoing integration of real-world effectiveness data will strengthen future evaluations. These efforts will help refine resource allocation as population needs evolve. This evidence base equips clinicians, pharmacists, and Medical Science Liaisons to communicate the value of vaccination to decision makers. It also supports program development within health systems. Aligning clinical practice with economic insight advances sustainable immunization strategies. These strategies meet both quality and cost expectations.

Connecting health economics with practice and policy creates a path for translating evidence into operational decisions. These decisions support vaccination uptake, reduce system strain, and help health systems respond more effectively to future respiratory disease burdens

## CONCLUSION

RSV vaccination for adults aged sixty years and older demonstrates strong economic value from a societal perspective. Integrating health outcomes research with clinical and operational insights enables complex economic findings to be translated into action for patient care, policy, and system-level decision-making. Prioritizing high-risk groups and incorporating real-world evidence further strengthens the case for sustained vaccination efforts. This work demonstrates how combining HEOR expertise, clinical understanding, and policy awareness can guide program design, support cross-functional collaboration, and advance effective, sustainable immunization strategies.

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