

# Integrating Real World Evidence in Economic Evaluation of Herpes Zoster Vaccination Among Kidney Transplant Patients in Thailand

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### BACKGROUND

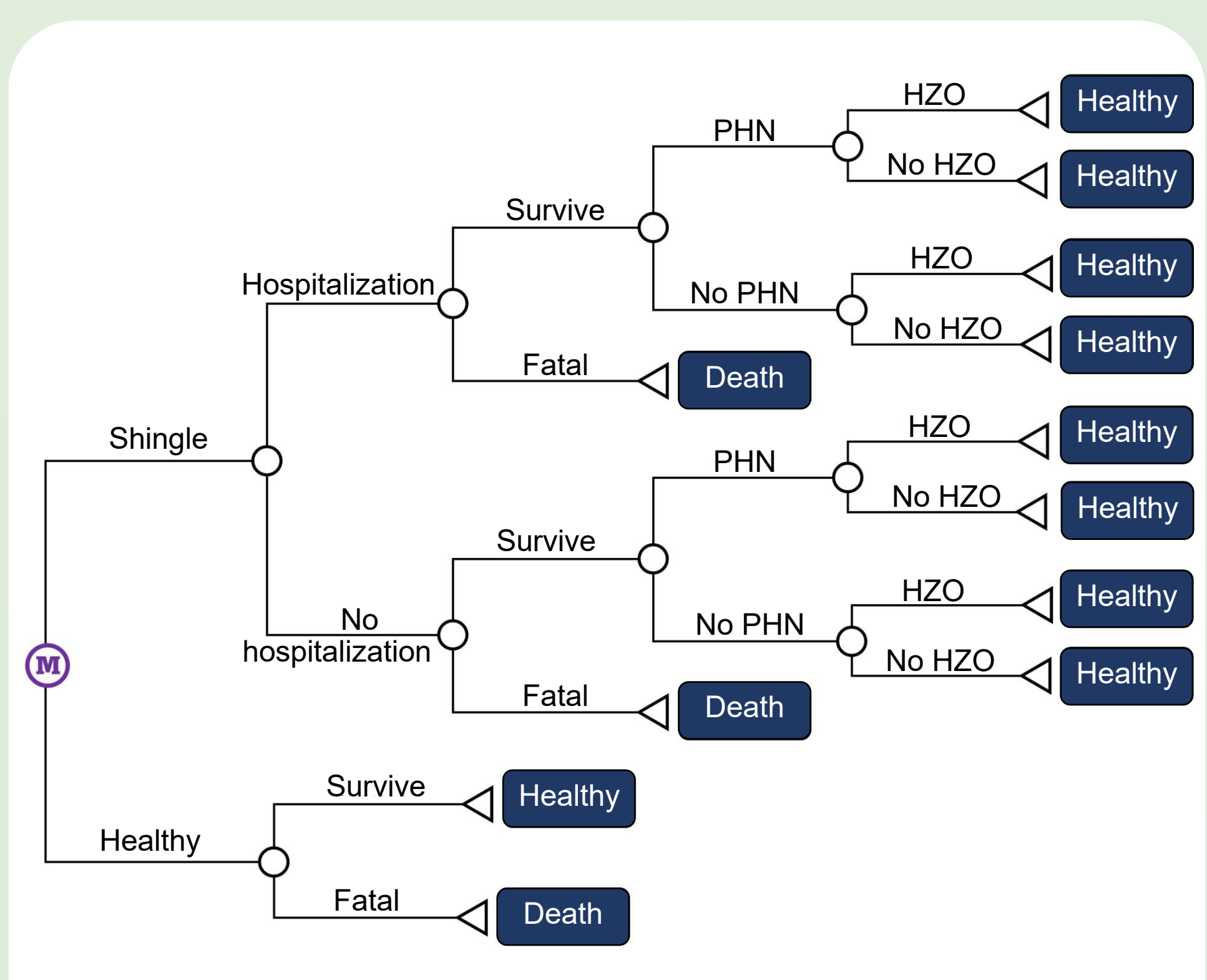
Herpes zoster (HZ) poses a considerable health risk to immunocompromised individuals, including kidney transplant recipients. Preventive strategies, such as immunization with the zoster live vaccine (ZVL) or recombinant zoster vaccine (RZV), may help lower this risk.

### OBJECTIVES

To assess the cost-effectiveness of both vaccines in kidney transplant recipients in Thailand.

### METHODS

- **Model:** Markov model from a societal perspective
- **Strategies compared:** No vaccination, Zoster vaccine live (ZVL), Recombinant zoster vaccine (RZV)
- **Population:** Hypothetical cohort of kidney transplant recipients, starting age 47
- **Time horizon & cycle:** Lifetime horizon, 1-year cycles
- **Health states:** Healthy, herpes zoster (HZ), postherpetic neuralgia, death
- **Data sources:** Published literature, local epidemiological data, expert opinion
- **Costs:** Based on 2023 Thai-specific data
- **Outcomes projected:** HZ, postherpetic neuralgia, costs, quality-adjusted life years (QALYs)
- **Discounting:** 3% per year
- **Analysis:**
  - Incremental cost-effectiveness ratios (ICERs) vs Thailand's WTP threshold (THB 160,000/QALY)
  - Deterministic and probabilistic sensitivity analyses
  - Cost-effectiveness acceptability curves (CEACs)

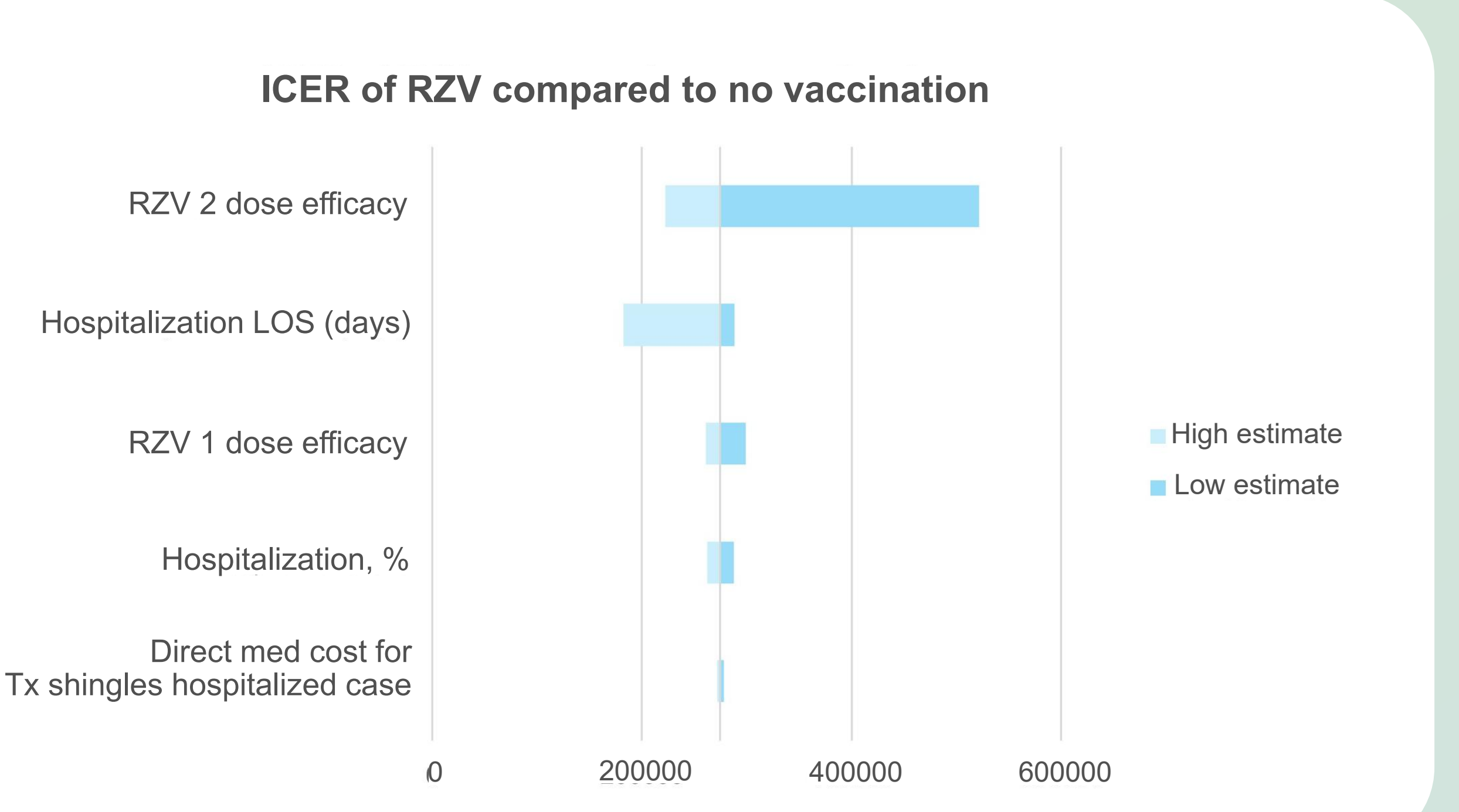
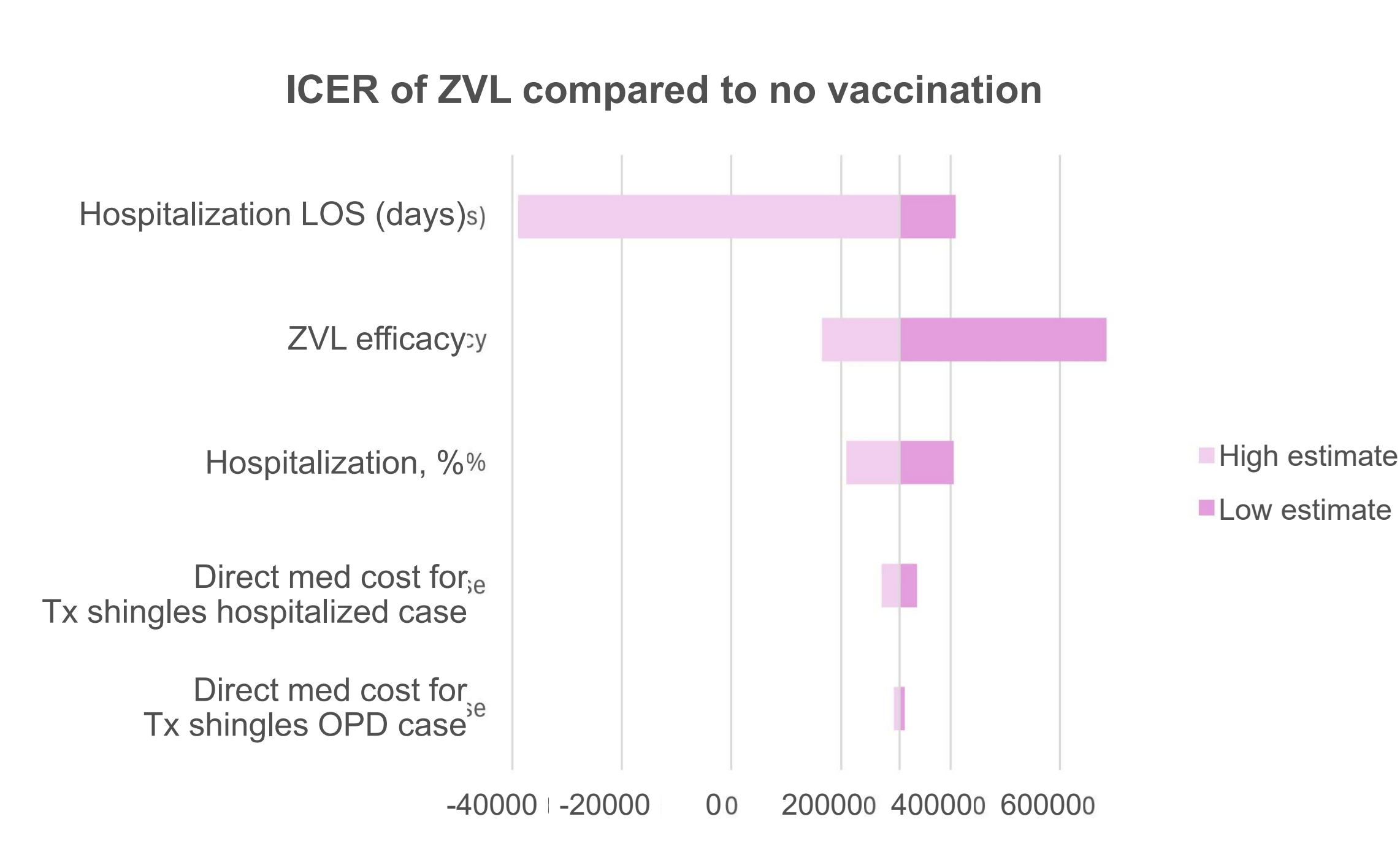


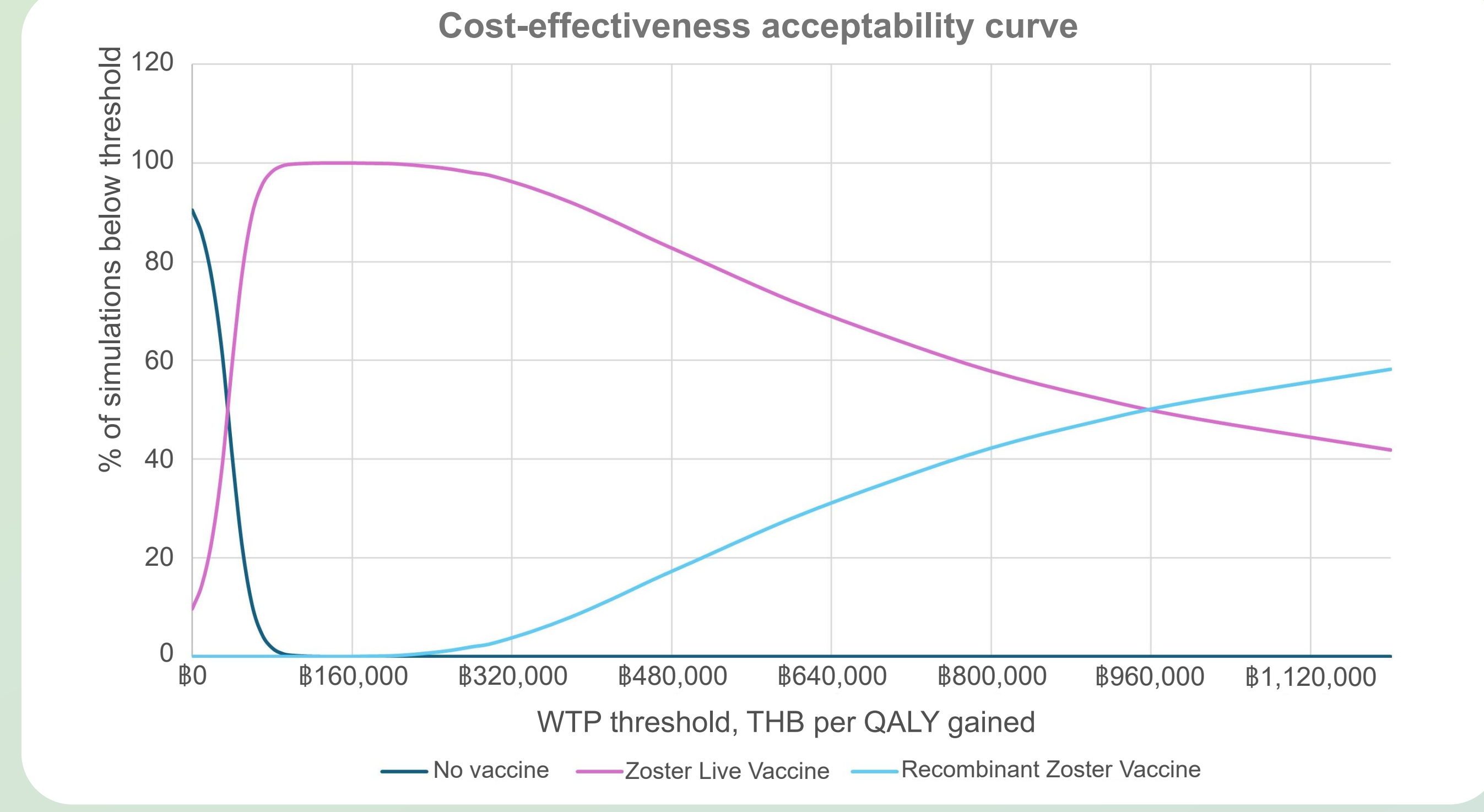
**Figure 1: Markov Model**

**Abbreviations:** PHN: Postherpetic Neuralgia; HZO: Herpes Zoster Ophthalmicus

### RESULTS

- **Base-case ICERs (vs no vaccination):**
  - ZVL: **THB 30,694/QALY**
  - RZV: **THB 274,869/QALY**
- **Price reduction scenario:** If RZV cost ↓45%→ ICER = **THB 153,112/QALY** (below WTP threshold)
- **Probability of cost-effectiveness (current prices):**
  - ZVL: **99.97%**
  - RZV: **0.03%**
- **Key drivers (one-way sensitivity analysis):** Vaccine efficacy, hospitalization rate, length of stay





**Cost-effectiveness acceptability curve**

Treatment	Total cost	QALYs	Increment cost	Incremental QALY	ICER
No vaccine	35,280,946	187,116.40	Ref	Ref	Ref
ZVL	42,210,497	187,342.16	6,929,551	225.76	30,694
RZV	120,686,702	187,427.11	78,476,205	84.95	923,771

**Abbreviations:** ICER: Incremental cost-effectiveness ratio; QALY: Quality-adjusted life year; RZV: Recombinant zoster vaccine; WTP: Willingness-to-pay; ZVL: Live-attenuated zoster vaccine

### CONCLUSIONS

ZVL is cost-effective under current conditions in Thailand. Although RZV offers greater clinical protection, its high cost limits affordability. A price reduction would improve its cost-effectiveness, supporting its broader use in kidney transplant recipients.

### CONTACT INFORMATION

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### REFERENCES

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