

Adaptation and Cost-Effectiveness Analysis of the "My Health Everyday" Medication Adherence Coaching Application for Hypertension Management in Hungary

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OBJECTIVES

- To adapt the "My Health Everyday" medication adherence coaching application, originally developed in Poland, for use in Hungary
- To evaluate the cost-effectiveness of the application compared to usual care for adults with hypertension, considering the perspective of the Hungarian healthcare payer and setting a 20% improvement in adherence as the target product profile

METHODS

Translation

- 5-step linguistic and cross-cultural adaptation

Figure 1: Adaptation process

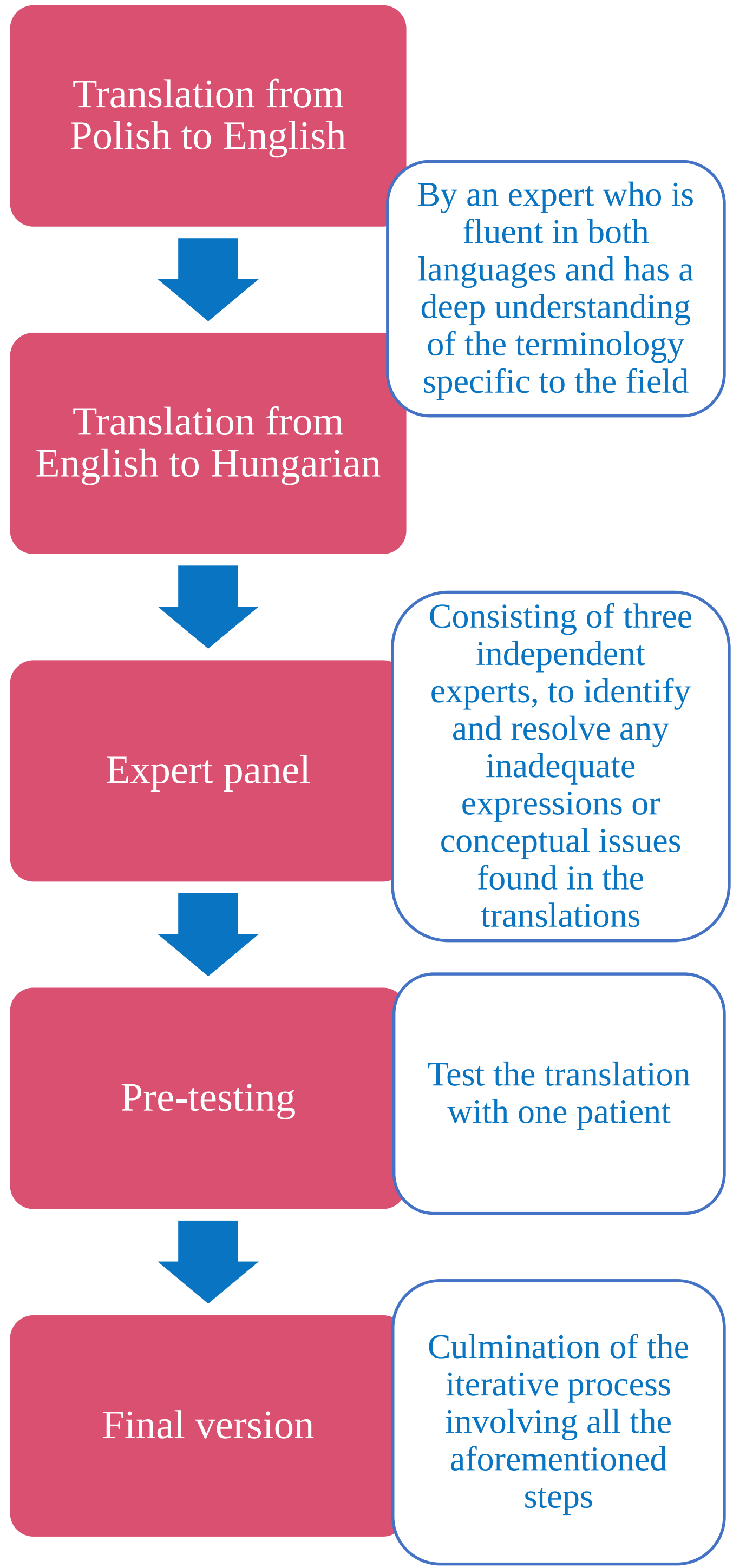


Table 1: Model input parameters²⁻¹⁴

Costs	
Parameter	Value
One cycle in the "Hypertension without Cardiovascular Event" state	2,049 Ft
One cycle in the "Cardiovascular Event" state	780,200 Ft
One cycle in the "Post-Cardiovascular Event" state	6,180 Ft
Utility values	
Parameter	Value
One cycle in the "Hypertension without Cardiovascular Event" state	0.7300
One cycle in the "Cardiovascular Event" state	0.7047
One cycle in the "Post-Cardiovascular Event" state	0.7047
State transition probabilities	
Parameter	Value
"Hypertension without Cardiovascular Event" → "Cardiovascular Event"	0.0024
"Cardiovascular Event" → "Post-Cardiovascular Event"	0.9835
"Hypertension without Cardiovascular Event" → "Death"	0.0012
"Cardiovascular Event" → "Death"	0.0165
"Post-Cardiovascular Event" → "Death"	0.0165
Staying in "Hypertension without Cardiovascular Event" state	0.9964
Staying in "Post-Cardiovascular Event" state	0.9835

Cost-effectiveness analysis

- Type*: Markov cohort model in MS Excel
- Interventions*: “My Health Everyday” app vs. usual care
- Model cohort*: 1,000 hypertensive patients aged 60 years
- Perspective*: Healthcare payer
- Time horizon*: 1-year
- Cycle length*: 1-month
- Sensitivity analysis*: one-way deterministic sensitivity analyses by +/- 10%
- Outcome measures*:
 - Incremental cost-effectiveness ratio (ICER) of the application
 - Value-based price for the application considering the Hungarian cost-effectiveness threshold
- Assumed effectiveness*: 20% increase in adherence to anti-hypertensive medications results in a 7% reduction in cardiovascular event risk¹

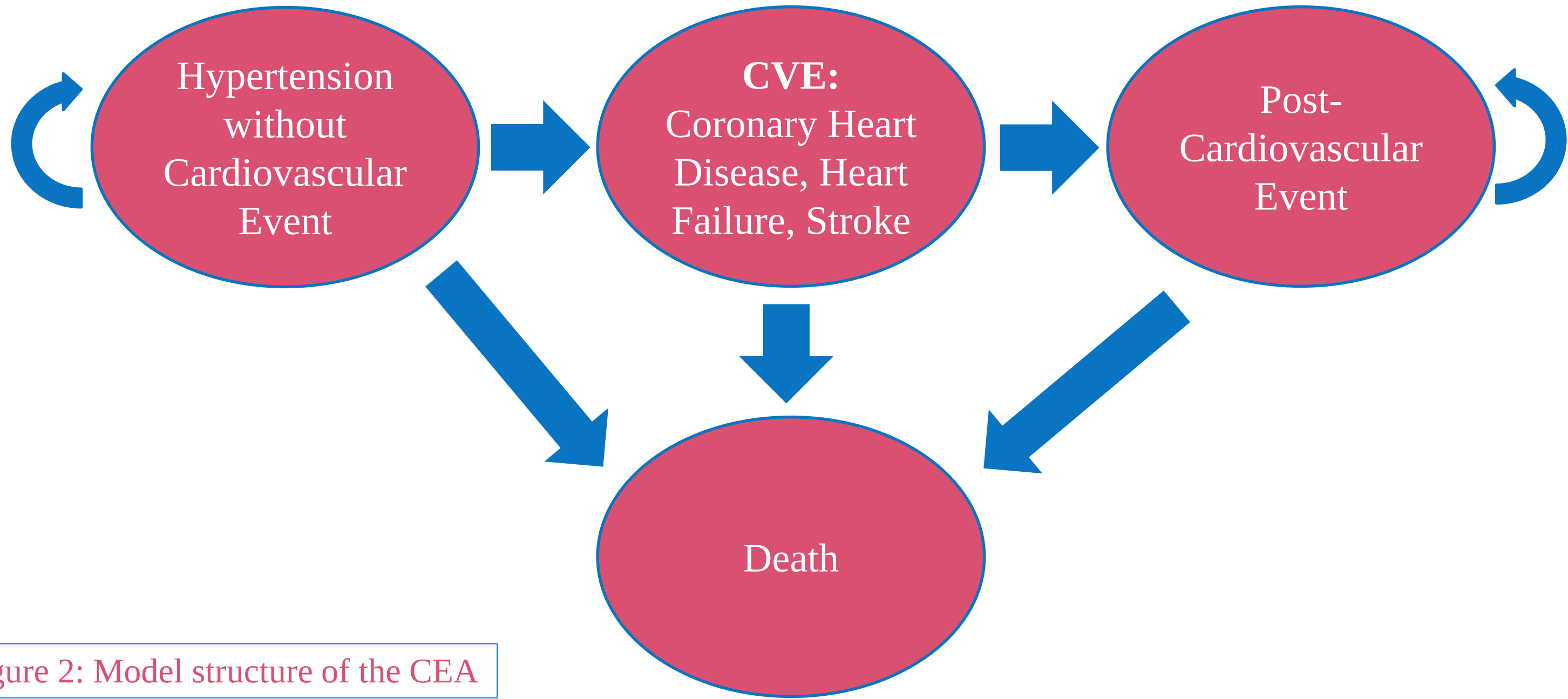


Figure 2: Model structure of the CEA

RESULTS

Translation

- Differences in the Polish and Hungarian healthcare systems, along with variations in medical terminology, and other cross-cultural aspects, posed significant challenges
- Based on patient feedback, 3 advices from the “Drug side effects”, 2 from the “Lack of faith in the medication” and 2 from the “Being away from home” categories were removed
- The final Hungarian version of the application contained 72 patient advices, compared to the 79 items Polish version

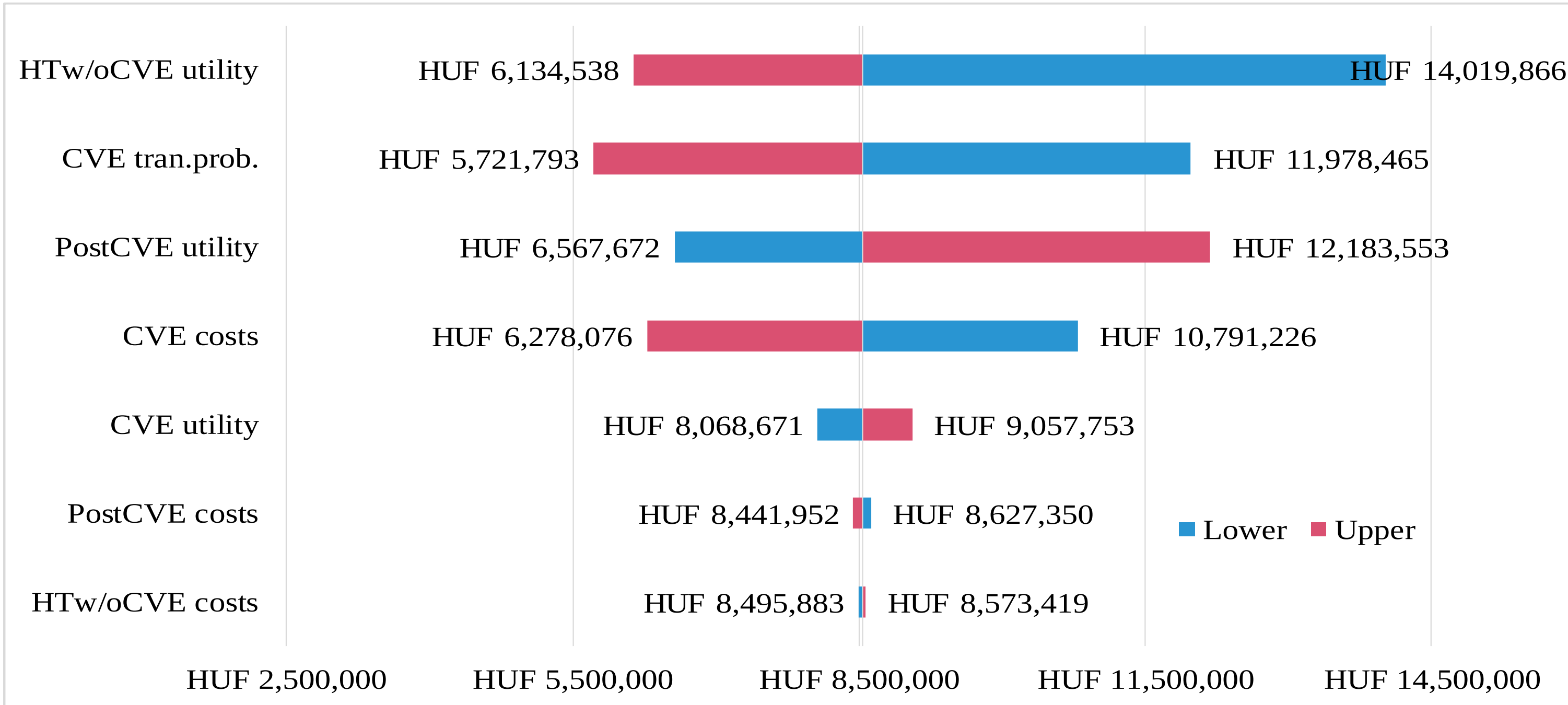
Cost-effectiveness analysis

- When the application was considered to be free of cost, it dominated over usual care
- Patients achieved an estimated gain of 0.0001 quality-adjusted life years (QALYs) over 12 months
- In a population of 1,000, the application was estimated to prevent 1.8 cases of coronary heart disease, heart failure, or stroke, along with 0.2 deaths
- By considering a 1.5x GDP per capita ICER threshold, the value-based price of the application emerged as 178.28 HUF/person/month

Table 2: ICER values in base case (free application) and in the case of a value-based application price

Per patient data	Cost (free application)	Cost (application 178.28 HUF)	QALY
"My Health Everyday" application	45,239.32 HUF	47,359.88 HUF	0.72325
Usual care	46,787.87 HUF	46,787.87 HUF	0.72318
Incremental	-1,548.55 HUF	572.01 HUF	0.0001
ICER	-23,105,057 HUF/QALY	8,534,651 HUF/QALY	

Figure 3: One-way deterministic sensitivity analysis (application 178.28 HUF)



Utility values could be changed only by +/- 3.4%

CONCLUSION

- The adapted medication adherence coaching application shows potential for improving hypertension management in Hungary
- Our results highlight the importance of cross-cultural and conceptual adaptation when transferring healthcare applications across different countries
- Evaluating the cost-effectiveness of the transferred technology prior to implementation is crucial for informed decision-making



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