

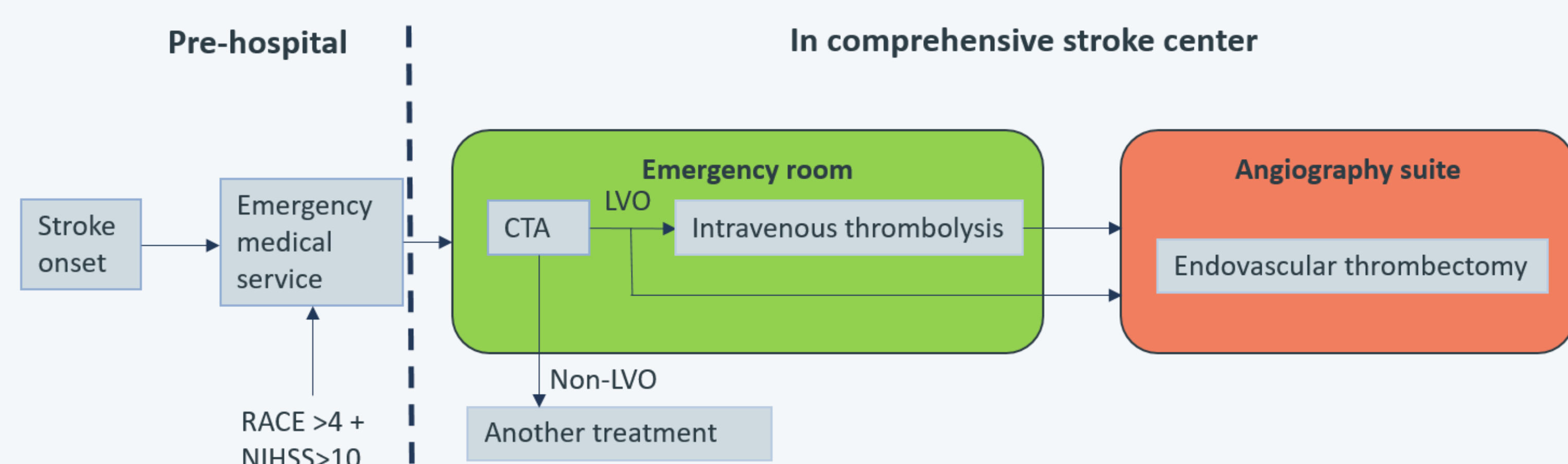
Cost-effectiveness of direct transfer to angiography suite of acute ischemic stroke patients

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Introduction

Figure 1 Initial transfer to the emergency room (ITER)



- Endovascular thrombectomy (EVT) is the standard treatment for acute ischemic stroke due to large vessel occlusion (LVO).
- Efficacy of EVT is highly time-dependent.
- DTAS decreases time to EVT treatment but results in higher costs and unnecessary occupation of the angiography suite in non-LVO patients.
- We evaluate the cost-effectiveness of DTAS vs ITER from the Dutch healthcare perspective.

Methods

- A short-term decision tree model (one year) and a long-term Markov model (nine years).
- Clinical parameters: ANGIOCAT trial (mRS at 90 days), MR CLEAN trial (transition probabilities).
- Main outcomes: total costs, total quality-adjusted life year (QALY), and incremental cost-effectiveness ratio (ICER).
- Dutch thresholds: \$59,135 and \$94,616/ QALY.
- Costs (USD) in the reference year 2021.
- Check uncertainty by using scenario analysis and probabilistic sensitivity analysis.

Figure 3 Conceptual model

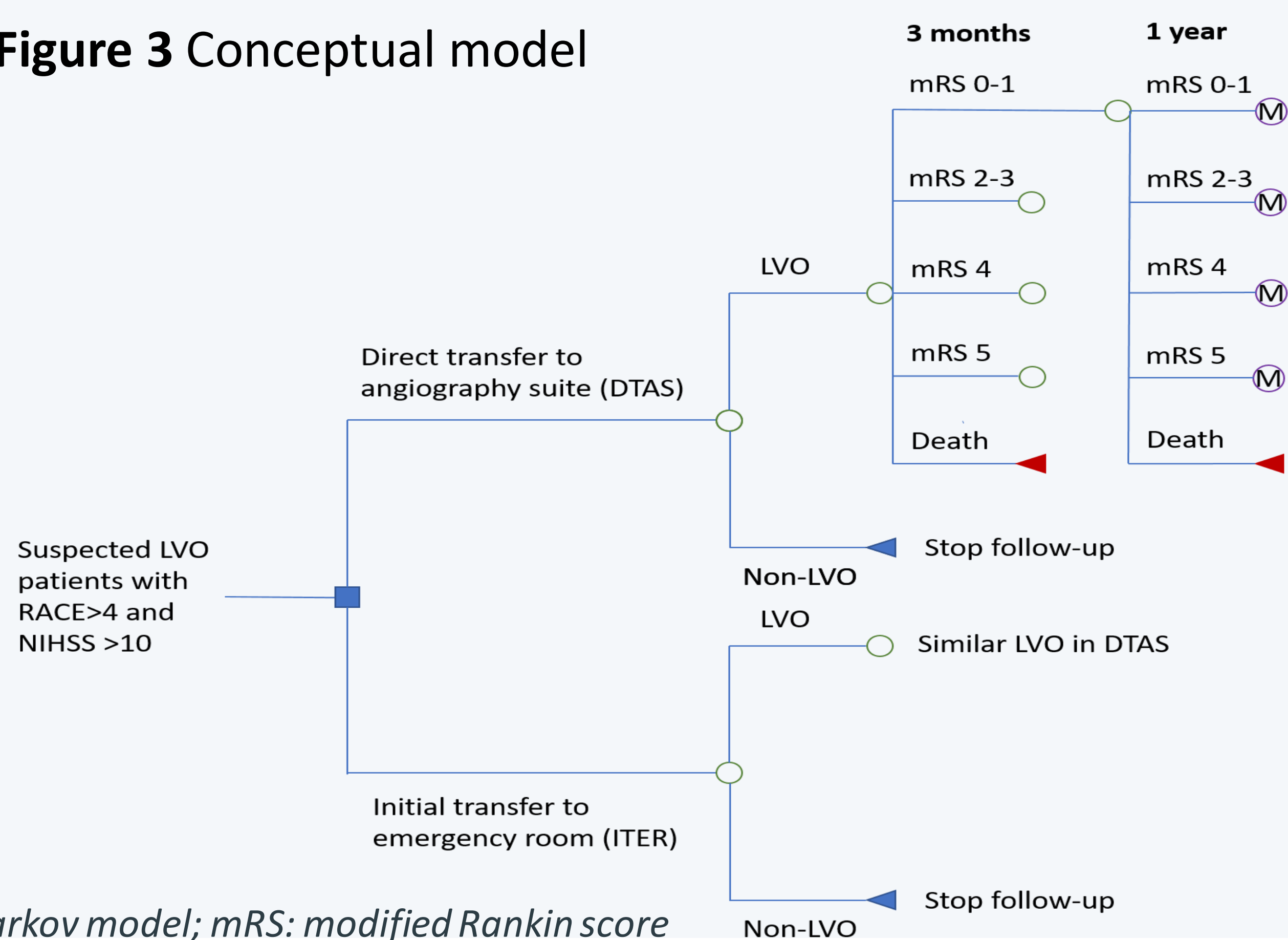
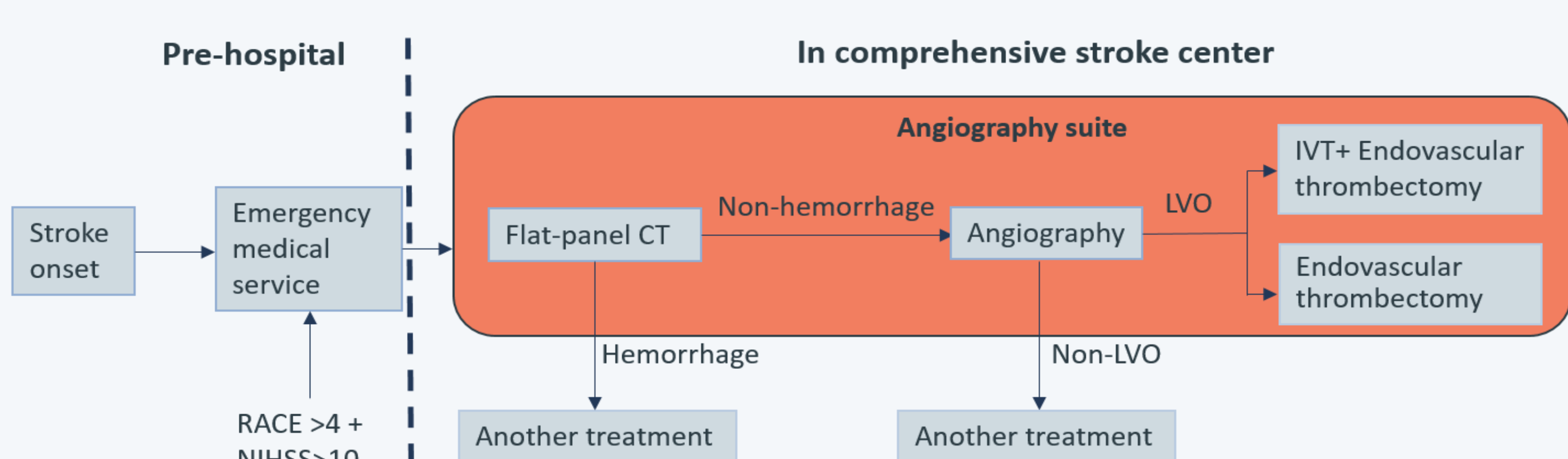


Figure 2 Direct transfer to angiography suite (DTAS)



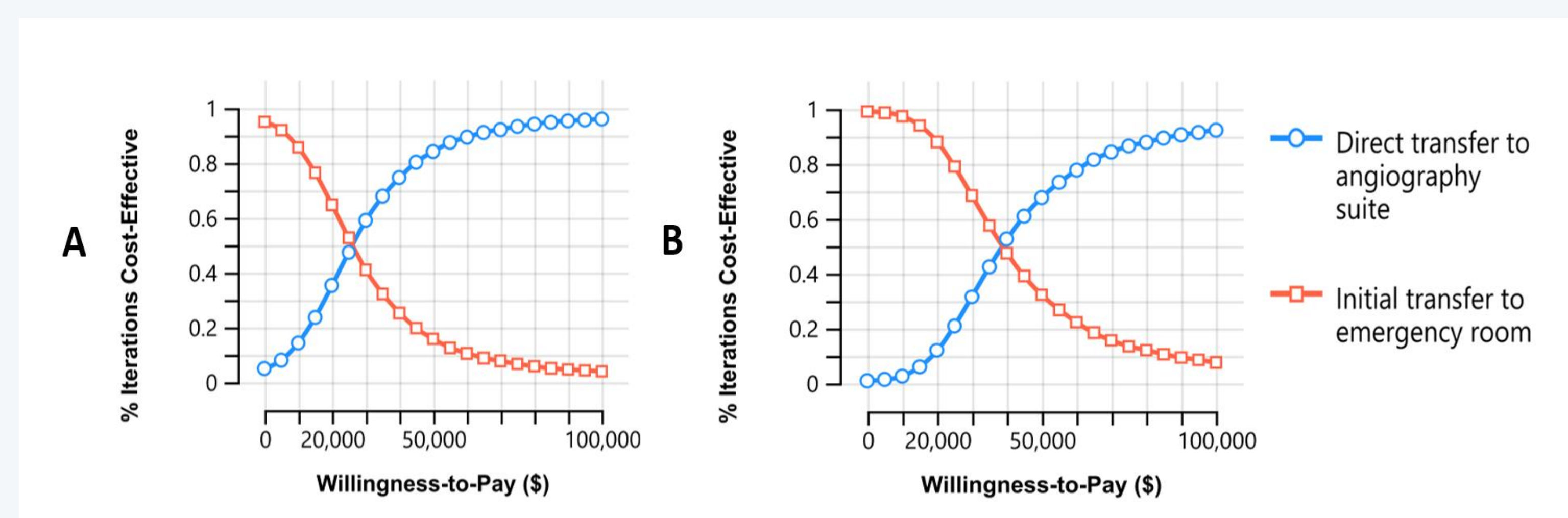
CT: computed tomography; CTA: computed tomography angiography; IVT: intravenous thrombolysis; NIHSS: National Institutes of Health Stroke Scale; RACE: Rapid arterial occlusion evaluation

Results

Table 1 Cost-effectiveness results in base case and scenarios

Strategy	Cost (\$)	Incremental cost (\$)	QALY	Incremental QALY	ICER (\$/QALY)
Base case					
ITER	46,443	-	1.70	-	-
DTAS	55,162	8,719	2.03	0.32	27,169
Scenario 1: without RACE >4 and NIHSS >10					
ITER	13,822	-	1.20	-	-
DTAS	17,336	3,514	1.29	0.09	38,325

Figure 4 Cost-effectiveness acceptability curve in base case (A) and scenario 1 (B)



Conclusions

With faster treatment, improved functional outcomes and favorable economic evaluation, the DTAS strategy combined with pre-hospital triage for LVO should be considered as a potential strategy to optimize the acute stroke care pathway.

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