

Image-guided versus conventional ablation

Cost-effectiveness analysis in patients with recurrent ventricular tachycardia in France: results from the inEurHeart study

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What are we tackling?

Ventricular tachycardia (VT) is a life-threatening heart-arrhythmia common in patients with ischemic heart disease. These arrhythmias often recur, leading to frequent hospitalizations and high healthcare costs. Catheter ablation can reduce VT recurrences; however, conventional techniques remain resource-intensive, and outcomes depend heavily on the operator's skill and experience.

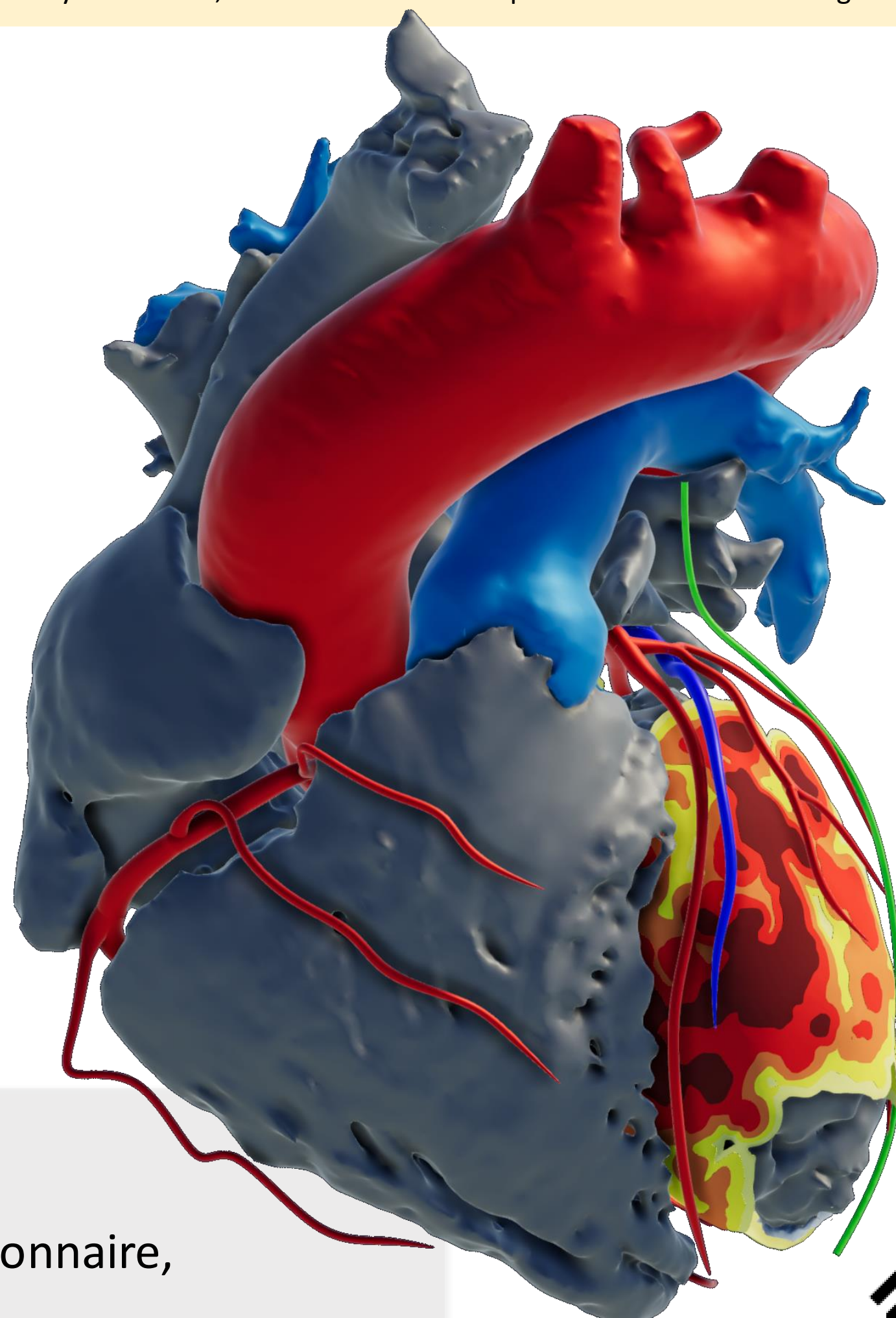
How did we approach this?

We used the following for data collection:

- Validated questionnaires: IMTAs Medical Consumption Questionnaire, Productivity Cost Questionnaire and Informal Care Questionnaire.
- Hospital records and case-report forums.
- EQ5D-5L & disease specific HRQoL questionnaires.

Data collection was done at baseline and 1-12 months post-ablation.

- Analyses were performed from healthcare and societal perspectives.
- Mean costs and effects were estimated with linear mixed models.
- Uncertainty was explored with bootstrapping.

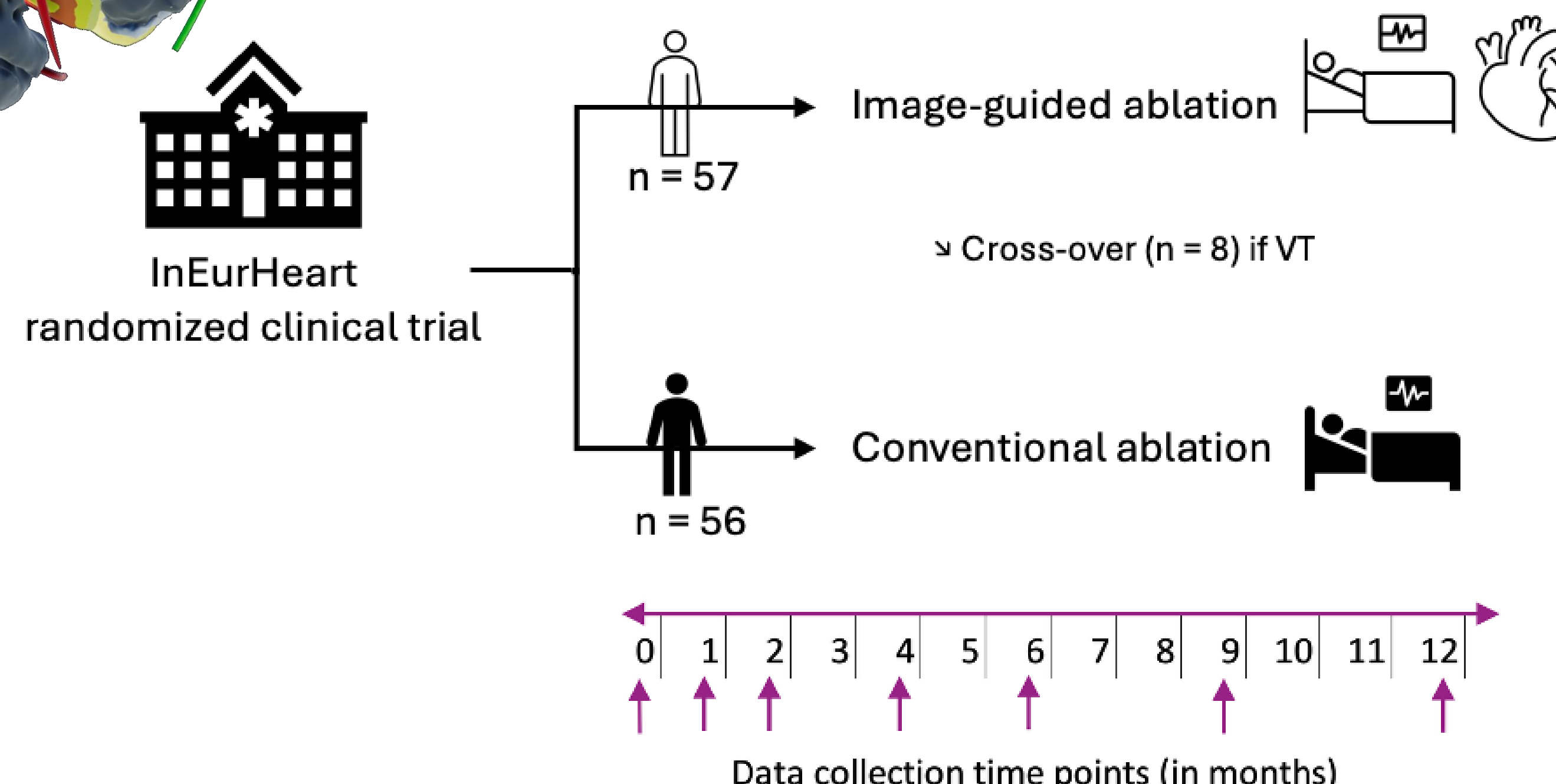


What is the intervention?

Image-guided ablation with InHEART may improve efficiency and outcomes by using an AI-based 3D heart model, in which ablation targets are pre-defined on CT images before the procedure.

Aim: This study assesses the cost-effectiveness in image-guided ablation versus conventional ablation in France using data from the InEurHeart trial.

Figure 1. InEurHeart clinical trial conducted in 16 hospitals in 4 countries.



What did we find out?



Healthcare: €3,408 saved (95% CI -10,434 to 1,605)

Societal: €4,770 saved (95% CI -12,705 to 1,423)



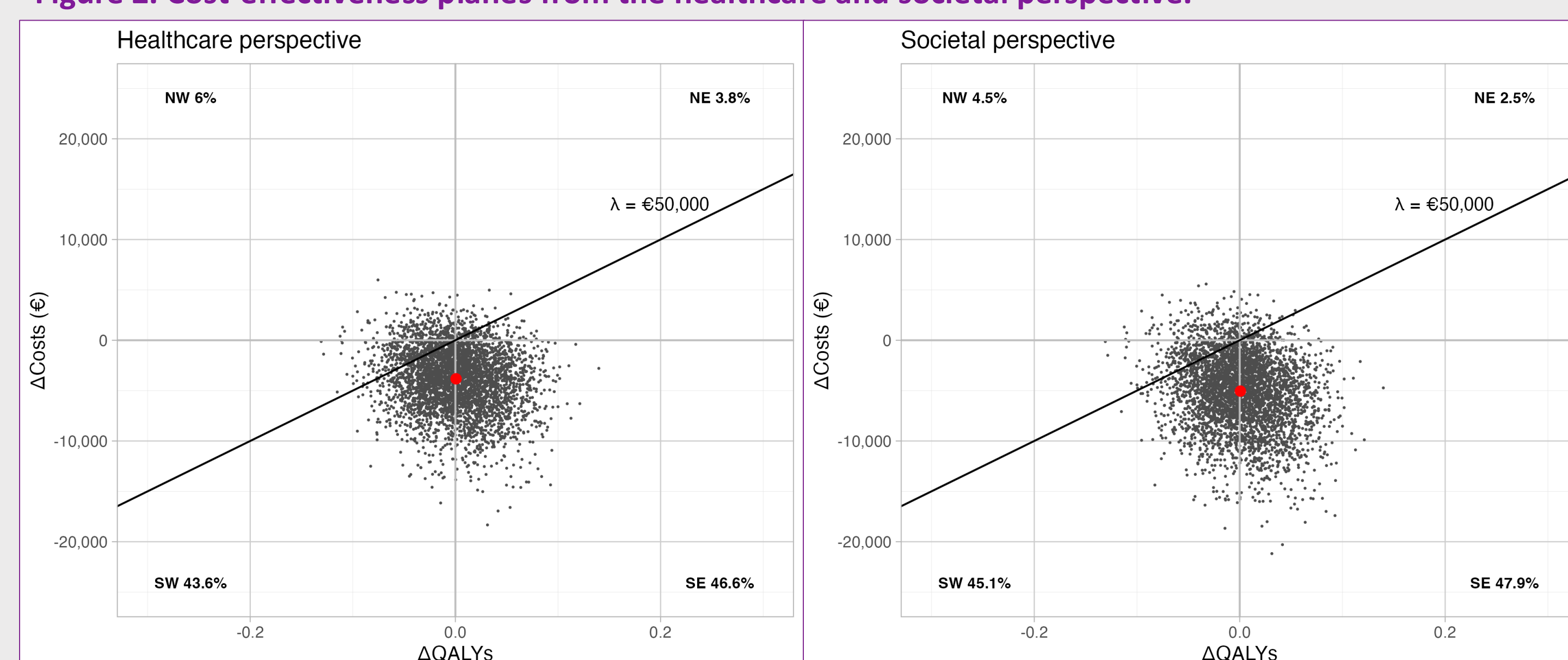
QALYs: Similar between groups

($\Delta = 0.009$; 95% CI -0.108 to 0.11)



Image-guided ablation **dominates**.

Figure 2. Cost-effectiveness planes from the healthcare and societal perspective.



- Cost savings were mainly driven by:
 - Shorter procedures
 - Fewer mapping catheters
 - Reduced post-procedural hospital stays
- Trial was **powered for procedural time difference, not cost outcomes**.
- Image-guided ablation may improve efficiency and accessibility in less experienced centers, but cross-over cases highlight its **technical limits in complex VT**.

Table 1. Cost-effectiveness analysis.

	CT-guided VT ablation (n=57)	Conventional VT ablation (n=56)	Difference	95% CI difference
Healthcare perspective				
QALYs	0.891	0.882	0.009	-0.067; 0.072
Healthcare costs	€ 19,545	€ 22,953	€ -3,408	-10,434; 1,605
ICER				dominant
Societal perspective				
QALYs	0.891	0.882	0.009	-0.108; 0.11
Societal costs	€ 21,494	€ 26,264	€ -4,770	-12,705; 1,423
ICER				dominant

What can we take away?

CT-guided ablation represents an efficiency improvement compared to conventional ablation that is likely to lead to net cost savings while being equally effective.

Future research should assess long-term costs and QoL impacts of VT events.



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