EE675

# Cost-utility analysis of metabolic surgery compared with best medical care for the treatment of comorbid type 2 diabetes and obesity

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## Objectives

- Weight-loss is an important part of type 2 diabetes (T2D) management and can lead to improvements in cardiometabolic risk factors and an associated decreased risk of T2D-related complications.
- The aim of this cost-utility analysis was to estimate the cost-effectiveness of metabolic surgery compared with best medical care (BMC) for the treatment of comorbid T2D and obesity.

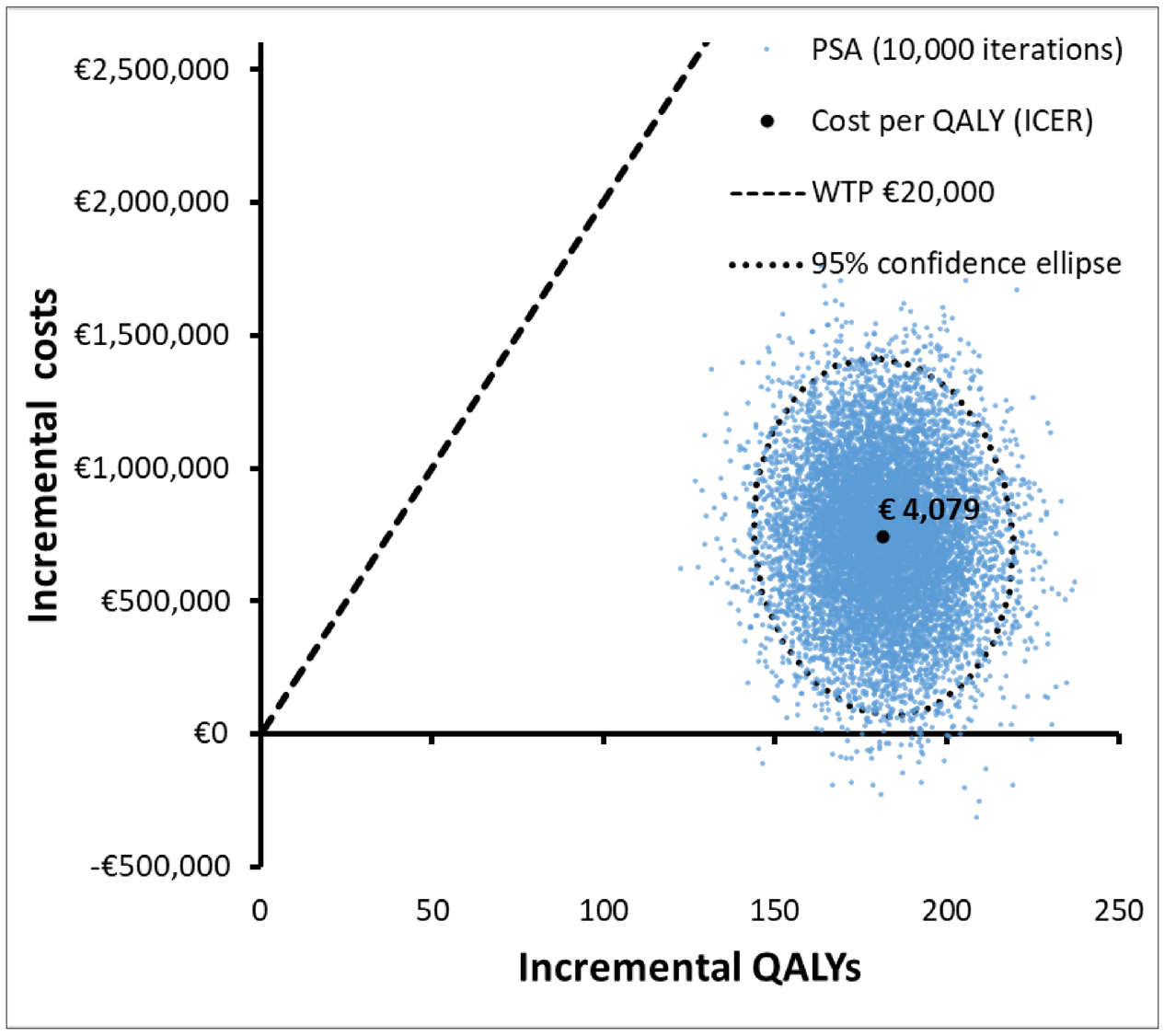
## Methods

- A probabilistic Markov model was developed to estimate the incremental cost per quality-adjusted life-year (QALY) gained for metabolic surgery compared with best medical care over a ten year time horizon.
- The analysis was conducted from the perspective of the Irish publicly-funded healthcare system. Costs were expressed in 2021 Irish Euro.
- Estimates of clinical effectiveness were based on changes in T2D medication use and the risk of cardiovascular events (stroke, myocardial infarction). Patients in the metabolic surgery cohort could also experience surgical complications and perioperative mortality.
- One-way and probabilistic sensitivity analyses were carried out to investigate uncertainty.

## Results

- The incremental cost-effectiveness ratio (ICER) for a metabolic surgery programme was estimated at €4,079/QALY gained (95% CI: 946 to 7,418) compared with BMC (**Figure 1**).
- The intervention became increasingly cost-effective and potentially cost-saving over longer-term time horizons.
- The results were stable in multiple sensitivity and scenario analyses.

**Figure 1** Cost-effectiveness plane




**Key**: ICER – incremental cost effectiveness ratio; PSA – probabilistic sensitivity analysis; QALY – quality-adjusted life year; WTP –willingness to pay.

## Conclusion

Metabolic surgery could be a highly cost-effective intervention for patients with comorbid T2D and obesity.

Although metabolic surgery likely represents a cost-effective use of resources, a key challenge for healthcare systems will be delivery of long-term follow-up care for a growing cohort of patients.

As pharmacological treatment options continue to evolve, treatment pathways may need to be reconsidered in terms of the referral criteria, sequence of interventions or use of multimodal treatment strategies that may produce better outcomes.

See also **EE182** (Budget impact analysis of metabolic surgery compared with best medical care for the treatment of comorbid type 2 diabetes and obesity)

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