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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Objectives

- Metabolic surgery is a clinically and cost-effective treatment option for patients with comorbid type 2 diabetes (T2D) and obesity, however affordability is an important issue for healthcare systems.
- The aim of this analysis was to estimate the incremental budget impact associated with the introduction of a metabolic surgery programme relative to best medical care (BMC) for the treatment of comorbid T2D and obesity.

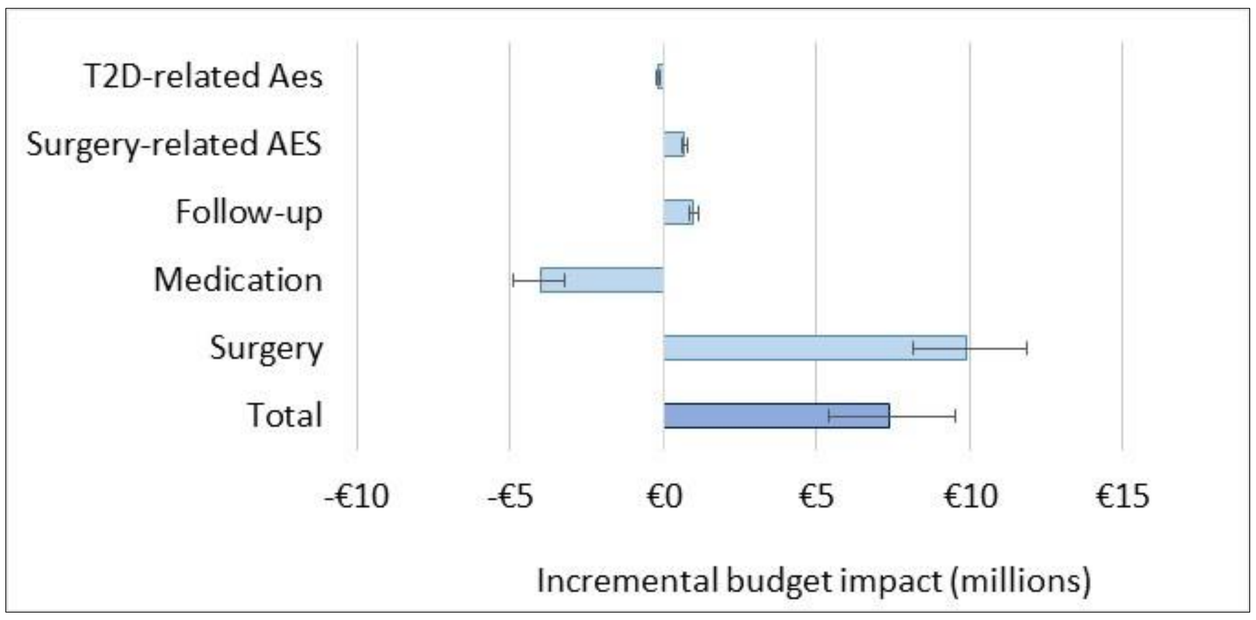
Methods

- A probabilistic open-cohort Markov model was developed to estimate the incremental cost associated with a metabolic surgery programme compared with BMC over a five-year time horizon.
- The analysis was conducted from the perspective of the publicly-funded healthcare system.
- An annual cohort size of 200 patients was assumed with reference to existing demand for bariatric surgery among patients with T2D in Ireland.
- Deterministic and probabilistic sensitivity analyses were carried out to investigate uncertainty.

Results

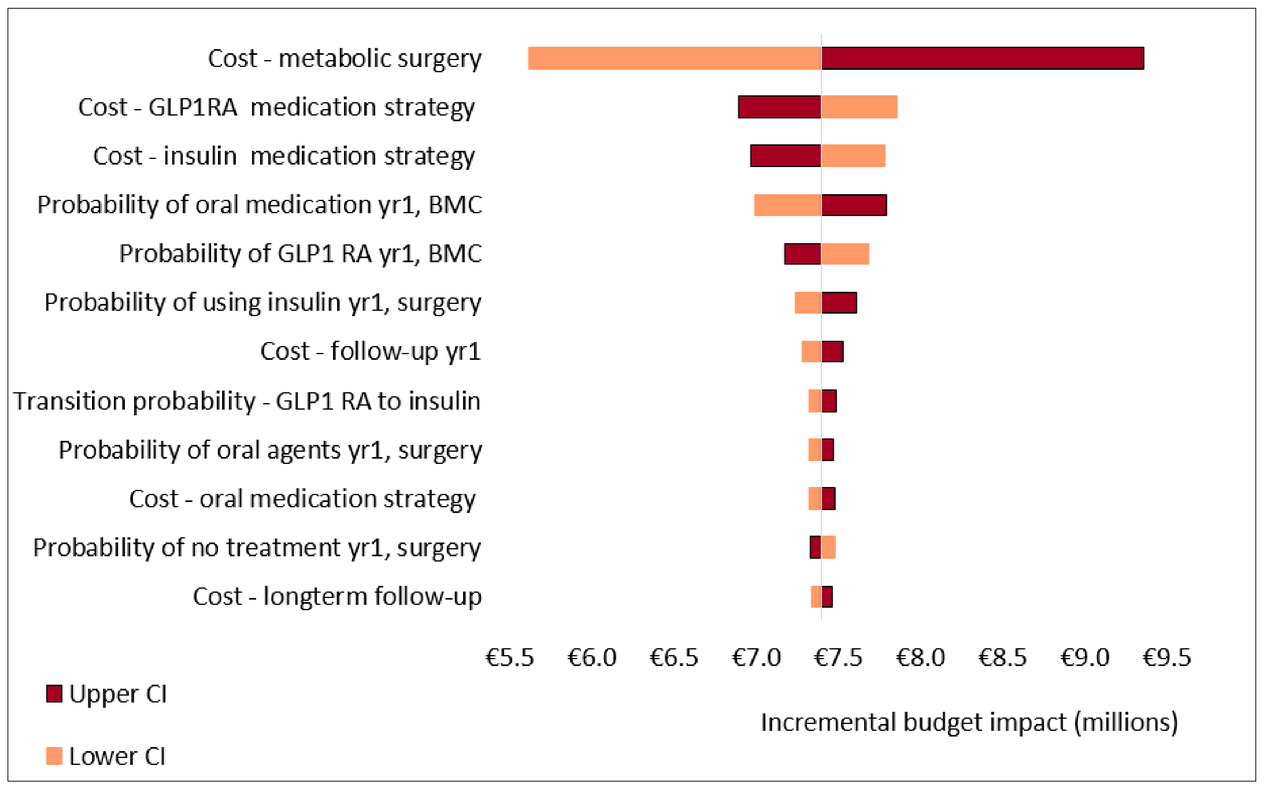
- The incremental five-year budget impact was estimated at €7.39 million (95% CI: 5.41 to 9.54). Increased spending related to metabolic surgery was offset by a 24% reduction in the cost of anti-hyperglycaemic medication for patients in the metabolic surgery cohort relative to the BMC cohort (**Figure 1**).
- There was considerable uncertainty associated with the cost of BMC due to the potential for confidential pricing agreements and ongoing changes in pharmacological management of T2D.

Figure 1 Itemised incremental budget impact



Key: AE – adverse event; T2D – type 2 diabetes.

Figure 2 Tornado plot of one-way sensitivity analysis



Key: BMC – best medical care; GLP-1 RA – glucagon-like peptide-1 receptor agonists.

Conclusion

The annual direct cost of diabetes to the Irish healthcare system has been estimated to be €580 million, of which a considerable proportion is spent on the treatment of potentially preventable complications.

In this population with high healthcare utilisation, the initial investment in a metabolic surgery programme could reduce healthcare costs in the longer-term by improving patient outcomes.

Precise estimation of demand for metabolic surgery is challenging owing to the influence of patient and clinician acceptability on demand.

See also **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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