

# COST-EFFECTIVENESS ANALYSIS OF AN IMPLANTABLE DEVICE FOR CHRONIC GASTRO-OESOPHAGEAL REFLUX DISEASE IN SWEDEN

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## 1. INTRODUCTION

Gastro-oesophageal reflux disease (GORD) is common in the European population. In Sweden, PPIs are the standard treatment, with Nissen fundoplication as the standard of care surgical option for selected cases. RefluxStop is a device emerging as an alternative surgical option. The objective of this analysis is to evaluate the cost-effectiveness of RefluxStop compared to Nissen fundoplication and PPIs.

## 2. METHODS

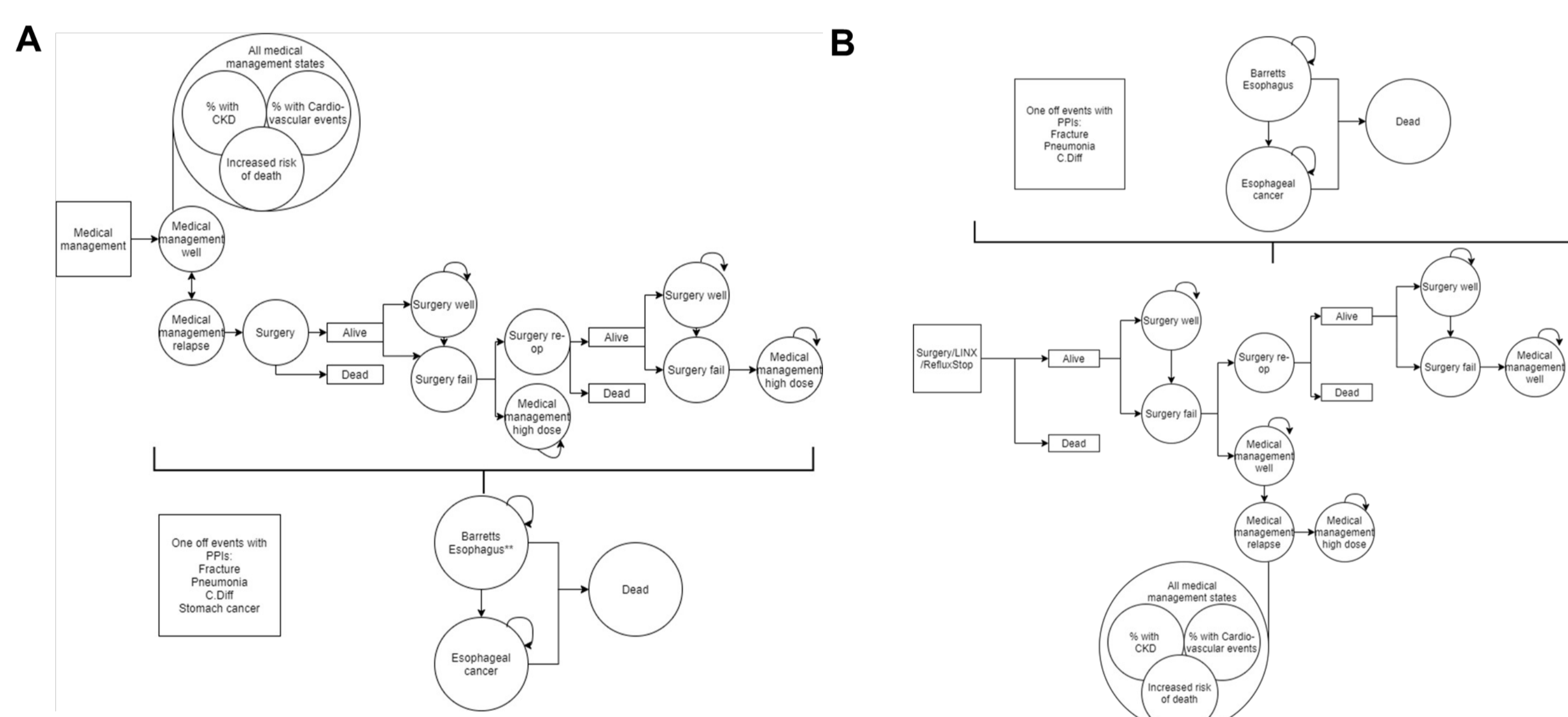
### OVERVIEW

- Markov model as adapted from a recent publication cost-effectiveness analysis for UK NHS<sup>1</sup>
- Perspective: Swedish healthcare payer

### MODEL STRUCTURE

- Lifetime horizon
- 3% annual discount rate for Sweden
- AEs associated with PPIs and surgery incorporated
- Benefits measured in QALYs
- Unit costs derived from Swedish DRG tariffs and from medical literature
- Clinical efficacy data obtained from published literature
- Uncertainty explored via deterministic and probabilistic sensitivity analyses

Figure 1A Model structure applied to medical management and B surgical options



## 3. RESULTS

### OVERVIEW

- RefluxStop is cost-effective against Nissen fundoplication and PPI-based medical management
- Lifetime difference in costs for RefluxStop relative to PPIs (SEK 86,684 per person) and Nissen fundoplication (SEK 42,523 per person)

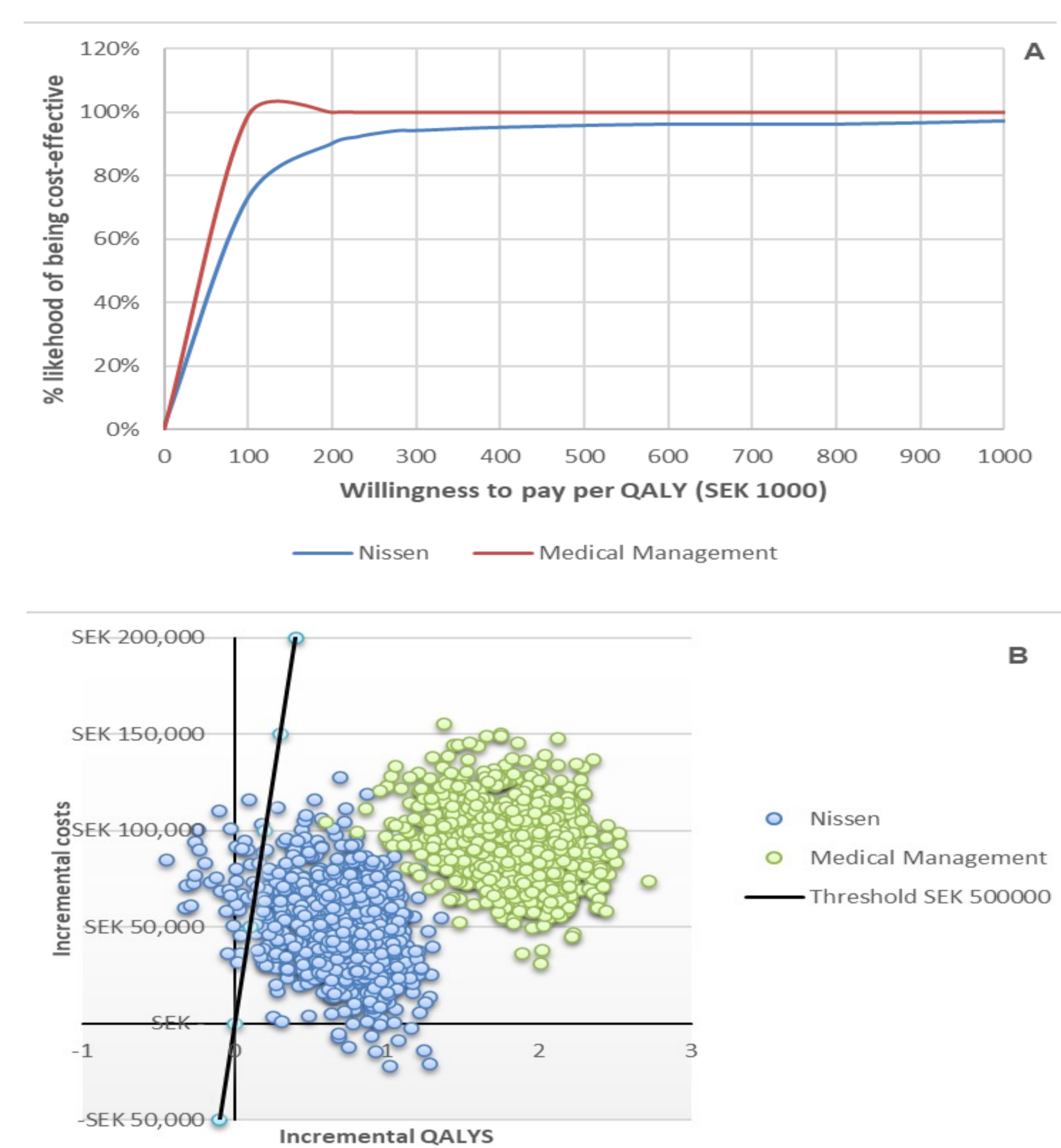
## 4. CONCLUSIONS

**RefluxStop demonstrates strong potential as a cost-effective treatment for GORD in Sweden. At a cost-effectiveness threshold of SEK 500,000 per QALY gained, RefluxStop has a high likelihood of being cost-effective against Nissen fundoplication and PPI-based medical management.**

Table 1 Cost-effectiveness outcomes estimated in the base case analysis, per patient.

	RefluxStop	MM	Δ vs. MM	Nissen	Δ vs. Nissen
<b>Cost/patient</b>	SEK 187,782	SEK 101,098	SEK 86,684	SEK 145,259	SEK 42,523
<b>QALYs/patient</b>	15.20	13.40	1.80	14.52	0.68
<b>ICER</b>			<b>SEK 48,152</b>		<b>SEK 62,966</b>

Figure 2A Cost-effectiveness acceptability curves. B Cost-effectiveness plane showing the spread of individual iterations in probabilistic sensitivity analysis.



### BASE CASE ICERs

- RefluxStop vs. PPIs: SEK 48,152 per QALY gained
- RefluxStop vs. Nissen: SEK 62,966 per QALY gained
- RefluxStop cost-effective against both at Swedish cost-effectiveness threshold of SEK 500,000

### COST-EFFECTIVENESS PROBABILITIES

- RefluxStop 100% cost-effective against PPIs
- RefluxStop 96% cost-effective against Nissen fundoplication

### ADDITIONAL ANALYSIS

- Model results remained robust with sensitivity analysis
- In a scenario analysis (10-year horizon), RefluxStop remained cost-effective compared to other options

### Reference

1. Harper S, Grodzicki L, Mealing S, Gemmill L, Goldsmith PJ, Ahmed AR. Cost-effectiveness of a novel, non-active implantable device as a treatment for refractory gastro-oesophageal reflux disease. J Med Econ. 2023 Jan-Dec;26(1):603-613. doi: 10.1080/13696998.2023.2201063. PMID: 37042668.

### Abbreviations

AE, adverse event; C.diff, C. difficile; DRG, diagnostic-related group; GORD, gastro-oesophageal reflux disease; ICER, incremental cost-effectiveness ratio; MM, medical management; NHB, net health benefit; NMB, net monetary benefit; NHS, National Health Service, United Kingdom; PPI, proton pump inhibitor; QALY, quality-adjusted life-year; reop, reoperation.

