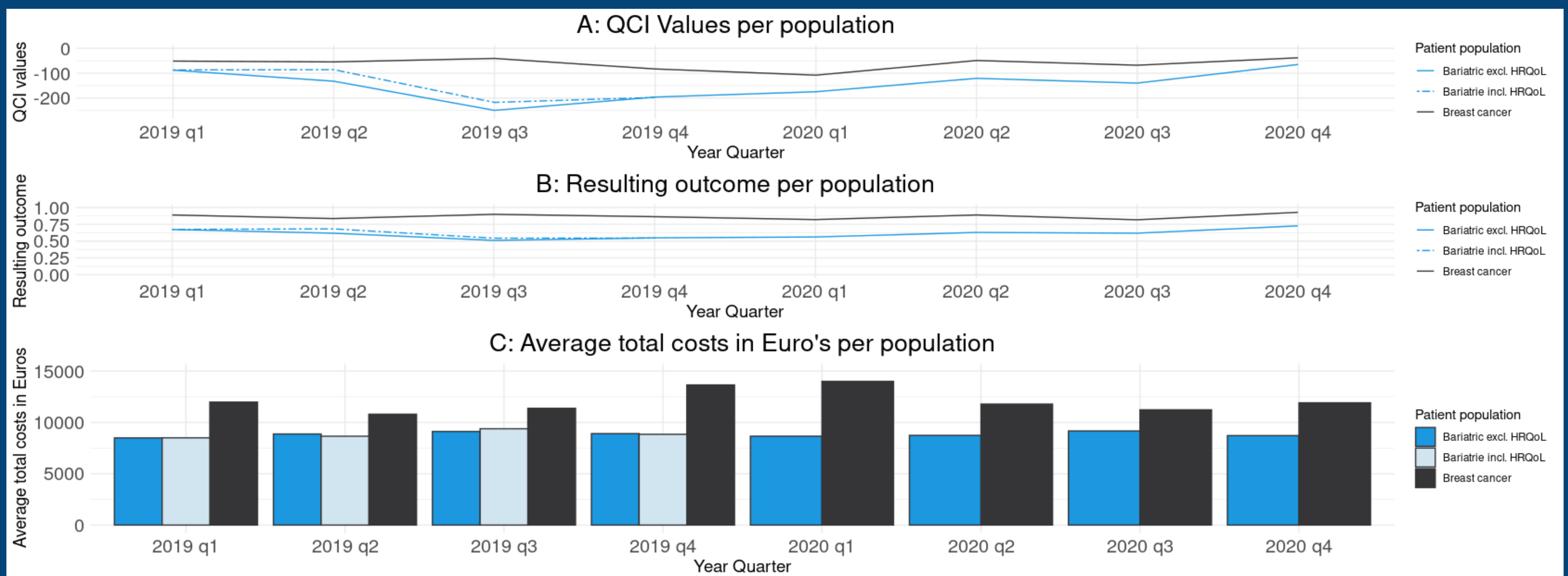


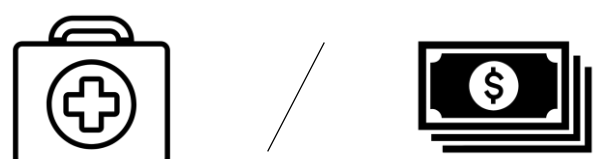
The QCI framework, is effective for modeling the relationship between health outcomes and hospital based costs of care for clinical or managerial proposes



Quality cost indicator: Reassessing the effects of health outcomes on healthcare expenditure

A retrospective cohort study

BACKGROUND



- In this study we aimed to develop a framework for modeling the relationship between medical costs and health outcomes

METHODS

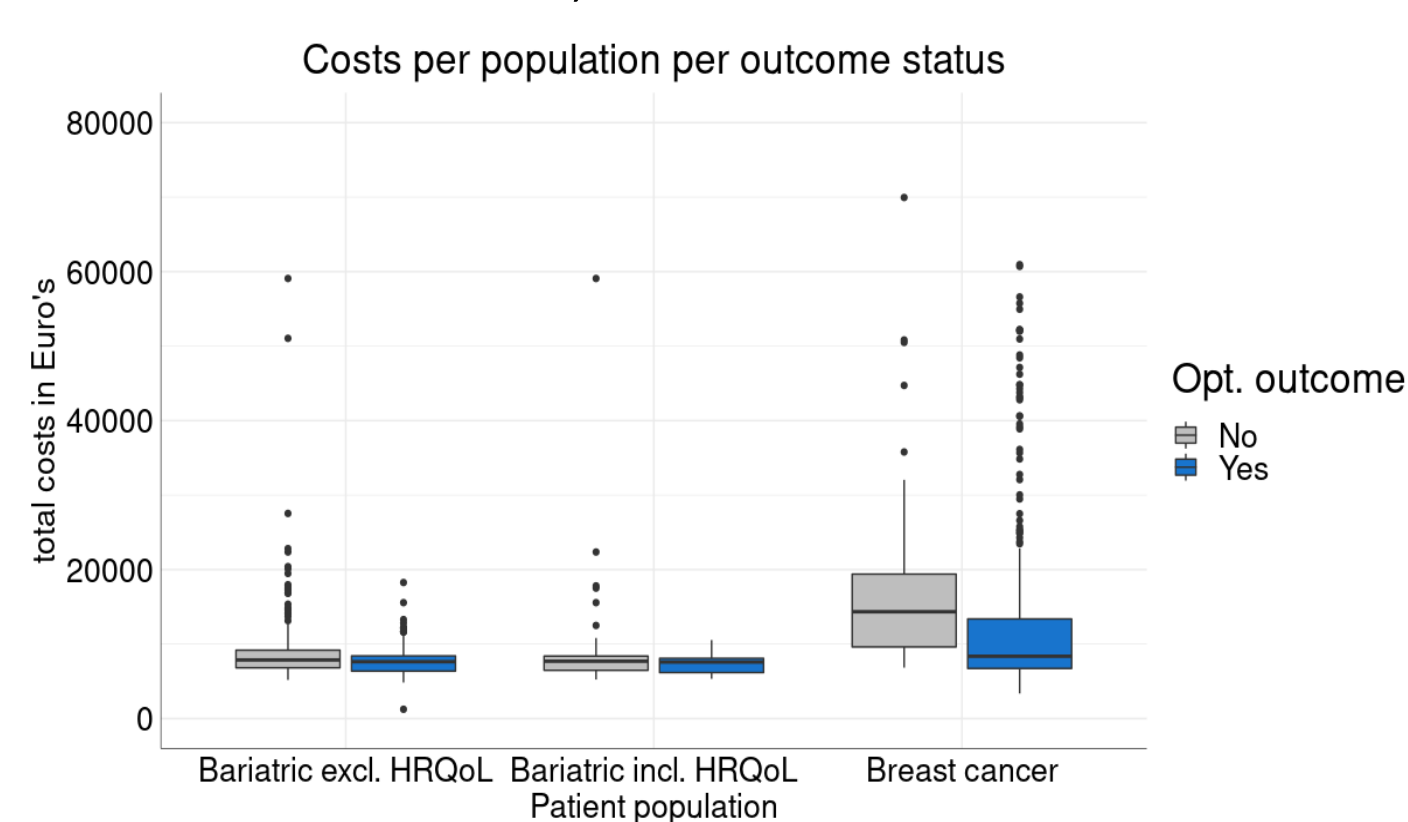
- Outcome and cost data were collected in a bariatric and breast cancer population over 2019 and 2020 in a teaching hospital in Rotterdam, The Netherlands

Patient population	Clinical outcome indicator
Bariatric	Re-operation
	Deficiency
	Re-admission
	Admission time
Breast Cancer	ER
	Total weight loss (TWL)
	Re-operation
	Surgical Margins
	Recurrence

- In the Bariatric population HRQoL was measured using the Rand scale of physical functioning
- Costs were based on the Dutch cost price model using 2019 prices as a reference
- Mann-Whitney U test to determine if patients with achieving optimal outcome had lower hospital based

RESULTS

- Breast cancer (N = 663)
 - AVG Res. Outcome 0.86
 - AVG Costs €12,504.12
- Bariatric incl. HRQoL (N = 270, 2019 only)
 - AVG Res. Outcome 0.61
 - AVG Costs €7,810.69
- Bariatric excl. HRQoL (N = 856)
 - AVG Res. Outcome: 0.61
 - AVG Costs €8,111.66



DISCUSSION

- The framework proved effective for modeling outcomes versus cost in daily practice
- Patients achieving optimal health on average had lower hospital based costs of care implying

There is an at, least partially, inverse relationship between health outcomes and hospital based costs of care.

- Missing data impacted our study (316 patients, 27%, were excluded in the bariatric population)
- HRQoL need to be implemented further
- When comorbidities existed prior to the primary treatment and their frequency or impact changed afterwards, the consequent costs and resulting outcome should be considered

QCI equation

$$QCI = 100 - \frac{\text{average total costs}}{(\text{resulting outcome}^2 * 100)}$$

Optimal outcome

- Optimal outcome is accomplished when a patient meets all health outcome indicators, including survival, as defined within the intervention for a specific medical condition.

Resulting outcome

- Resulting outcome refers to the number of patients who achieve optimal outcome divided by the total number of patients who receive the treatment over a set treatment period.

Average total costs

- The total costs are calculated as the average sum of the costs of the primary treatment plus any costs following the treatment of symptoms, AEs or comorbidities

QCI date

- The date of a specific procedure within the care process, such as the surgery date.

QCI period

- The QCI period is a fixed follow-up period in which resulting outcome can be determined. All costs should be considered from the start of the care process (which can occur before the QCI date) until the end of the QCI period.

Health outcome groups for optimal outcome

- Clinical outcome indicators;
- Survival (recurrence-free);
- Health-related quality of life (HRQoL).



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