

R.S.M. Thambithurai*, W. van Veghel, D. van Uden, J-B Bügel, A. Pijpe, M.K. Nieuwenhuis, C.H. van der Vlies, M.E. van Baar, A.E.A.M. Weel-Koenders, National Burn Care, Education & Research group, the Netherlands
Contact: ThambithuraiS@maasstadziekenhuis.nl

Introduction

Rising healthcare costs have led to a growing use of priority setting tools in healthcare. However, there are limited practical frameworks that can be used at the hospital level to set priorities. The Quality Cost Indicator (QCI) model aims to support value based healthcare at the hospital level, by calculating the patient perceived health outcomes per unit costs. Using QCI values, an assessment of the association between care path specific health outcomes and healthcare expenditure can be investigated [1].

1. van Veghel W., et al., (2024). Is the QCI framework suited for monitoring outcomes and costs in a teaching hospital using value-based healthcare principles? A retrospective cohort study. BMJ open, 14(5), <https://doi.org/10.1136/bmjopen-2023-080257>

Aims

1.

To externally validate the QCI model for specialized burn care, by redeveloping into the Burn Care QCI (BC-QCI) model.
2.

To gain insight into outcomes and costs of specialized burn care.

Methods

1. Selection of health outcome indicators and thresholds

- A review of the literature was undertaken
- Consecutive meetings (n=5) in a iterative process with stakeholders

2. Patients and data collection

- Retrospective cohort study: adult patients, with admission due to acute burn injuries between January 2020 and June 2023.
- Dutch Burn Repository R3 and Burn centers Outcomes Registry the Netherlands (BORN).

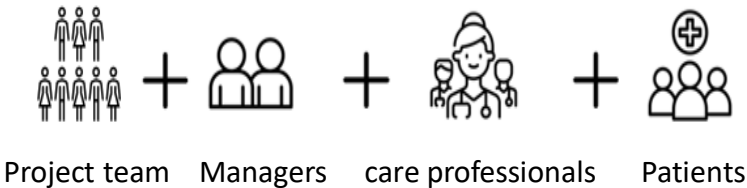


Fig 1. Stakeholders

Results

Patient population (n=1449)



Fig. 2. Patient and injury characteristics

Costs successful and failed treatment group

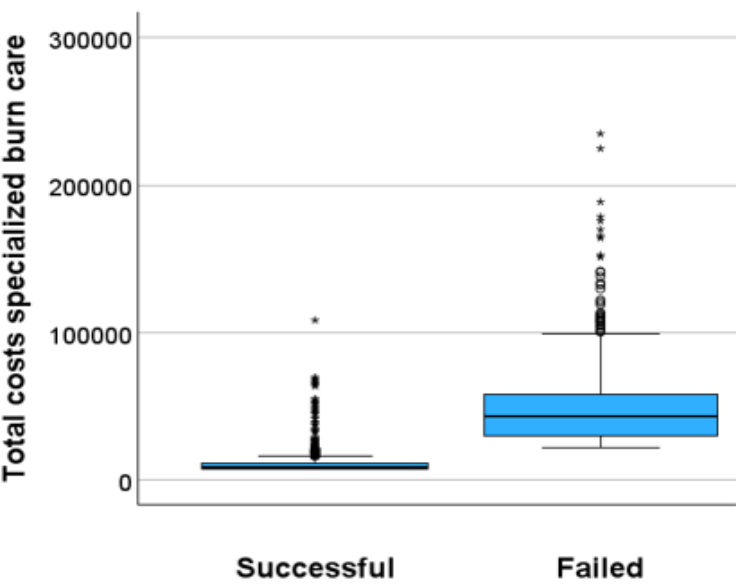


Fig 3. Total mean costs successful and failed treatment group

The total mean costs per patient were €29.297. The successful treatment group had on average lower costs compared to the failed group (€11.721 [€11.096 - €12.429] vs. €50.134 [€47.810 - €52.850]). The failed treatment group had on average more severe burns, more flame accidents, more complications, more wound infections, more often surgical treatments, a longer length of hospital stay and a longer ICU stay than the successful treatment group.

Majority of health outcome indicators successful

Health outcome indicator	Success rate
1. Length of stay	62%
2. Complication	89%
3. Wound infection	98%
4. Discharge destination	94%
5. Predicted mortality	99%
Overall successful treatment	54%

Table 1. Percentage of successful outcome and treatment

The majority of the health outcome indicators were achieved by the patients. The most successful indicator was predicted mortality, with 99% of the patients passing this outcome. The least successful indicator was length of stay, with 62% of the patients whom passed this outcome. Of all patients, 54% had a successful treatment.

Patient values

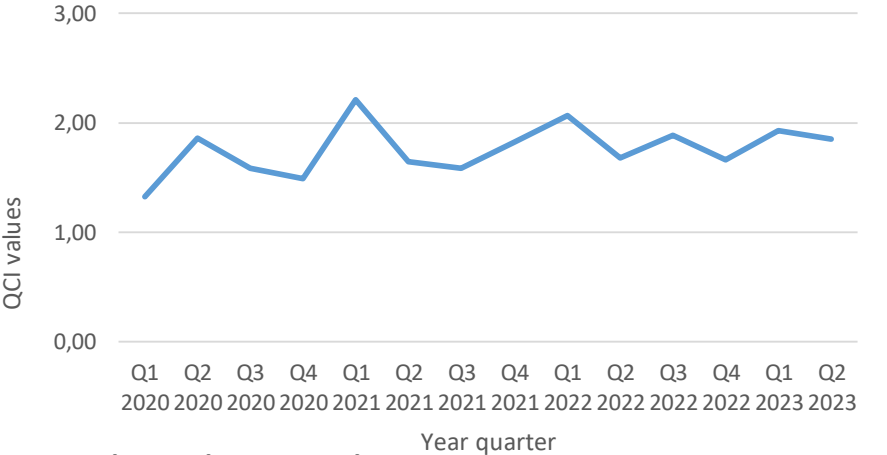


Fig 4. Obtained patient values over time

This figure shows obtained patient value per quarter. The QCI value is the ratio of the percentage of patients with successful treatments to the total average costs (per thousand euros). There is variation over time, towards more stable patient values. The combination of low costs and high successful treatments resulted in higher patient values, while the reverse led to lower patient values

Conclusion

This study showed that the BC-QCI model provides insight into successful outcomes and treatments, costs per successful and failed group and the obtained patient value. The BC-QCI model can support steering on outcomes and costs on hospital level for specialized burn care.