apm@nhta.com | NHTA | + 45 5458 7313 | nhta.com |

Can We Elicit a Willingness to Pay Threshold for Oncology Treatments in Denmark?

Asger Paludan Muller [1]
Laura Tølløse [1]
Asger Lindvig [1]
Chiara Marocco[1]

NHTA ApS, Denmark [1]

Introduction

In January 2017, the Danish Medicines Council (DMC) was founded with the purpose of assessing and providing guidance on new inpatient medicines. Since January 2021, the DMC has required that submissions include a cost-utility analysis, which incorporates quality-adjusted life-years (QALYs) and results in an incremental cost-effectiveness ratio (ICER). During the technical validation of the application, the DMC puts forward their own base case ICER, based on their assessment of the evidence. Following the DMC preliminary assessment report, AMGROS is responsible for price negotiation with the submitting company, and this negotiation results in a new ICER, which remains confidential.

Objective

Oncology treatments constitute a substantial amount of the medicines assessed. As there is no official willingness to pay (WTP) threshold for oncology treatments in Denmark, the aim of this study was to estimate the WTP threshold for oncology treatments in Denmark.

Key points

- No official WTP threshold exists in the Danish HTA process with the DMC.
- Based on our analysis of previous oncology treatment assessments, we estimate the WTP threshold for oncology treatments to be between 458,236 and 327,312 DKK/QALY assuming a 30% to 50% discount following AMGROS negotiations.
- As other factors, such as the quality of the clinical evidence, was not considered our results should be interpreted with caution.

Methods

All cost-utility based DMC assessments on oncology treatments published until the 13th of September 2023 were included in the analysis. To provide a conservative estimate of the WTP threshold, when the DMC assessment reported both an "optimistic" and a "pessimistic" ICER, the latter was included in the analysis, and decisions assessed as "partially positive" were included as positive. Additionally, this analysis is based on ICERs calculated with list prices in the DMC base case analyses, as ICERs resulting from AMGROS negotiations are confidential. One oncology treatment assessment was excluded from the analysis as no DMC base case was available.

The WTP threshold was estimated by carrying out logistic regression using positive or negative recommendation as the dependent variable and ICERs as an independent variable. ROC curves were then created and the point on the ROC curve that maximises the Youden index was identified, i.e., the optimal probability of a positive recommendation to use as a cutoff was identified. The ICER that would provide exactly the probability of a positive recommendation identified as the optimal cutoff was then calculated.

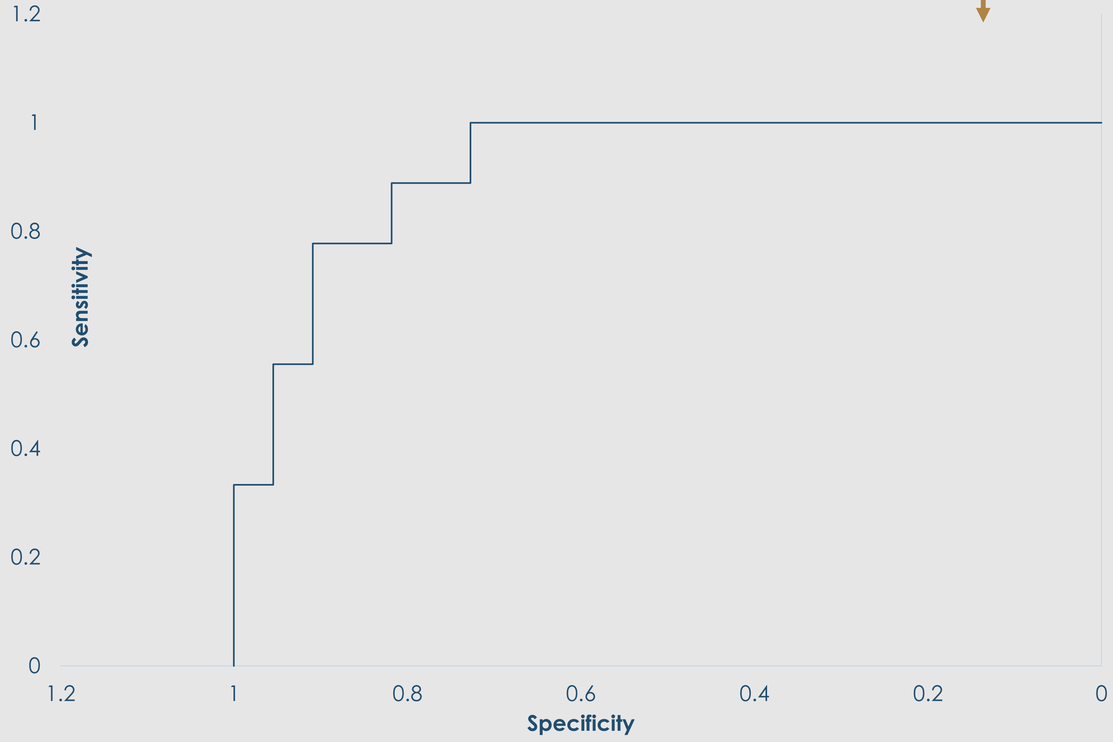
As only the pre-negotiation ICERs are available from the DMC, analyses were rerun with discounts of 30% and 50% applied to the pre-negotiation ICERs, to give a more realistic estimate of the post-negotiation WTP threshold.

Results

In this analysis, a total of 31 assessments with available ICERs were included. A WTP threshold of 926,023 DKK/QALY was identified as the point on the ROC curve which would maximise the Youden's index, resulting in the optimal balance between false positives and false negatives.

Applying a 30% discount to the pre-negotiation ICERs resulted in a WTP threshold of 648,216 DKK/QALY, while a 50% discount resulted in a WTP threshold of 463,011 DKK/ICER

ROC Curve - WTP Threshold



Conclusion

The estimated WTP threshold for oncology treatments in Denmark **based on pre-negotiation ICERs** is approximately **926,023 DKK/QALY** when based on list prices. As prices are often negotiated, it is very likely that the true WTP threshold is lower than our estimate.

If **50% discounts are assumed**, the WTP threshold becomes **463,011 DKK/QALY.**

References

1. Danish medicines council assessments reports available at: https://medicinraadet.dk/

Poster presentation at the ISPOR Europe 2023 Conference, 13-15 November 2023