Cost-effectiveness threshold in Denmark's new health technology assessment process: what do we know so far?

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Background

In 2021, the DMC adopted a QALY model to evaluate healthcare interventions for reimbursement [1]. Prior to this, they used a form of multi-criteria decision analysis where the benefits of a medicine are expressed on a categorical scale [2]. Since Denmark does not communicate an explicit cost-effectiveness threshold, it is not clear what makes a reimbursement decision positive or negative regarding cost-effectiveness [3,4]. A well-established cost-effectiveness threshold can help increase transparency in HTA decisions, support the sustainability of a healthcare system, and aid in price negotiations [5]. This study aims to increase understanding of the cost-effectiveness threshold used in the new Danish HTA process since its implementation, in addition to examining the characteristics of the medicines that have undergone this process.

Methods

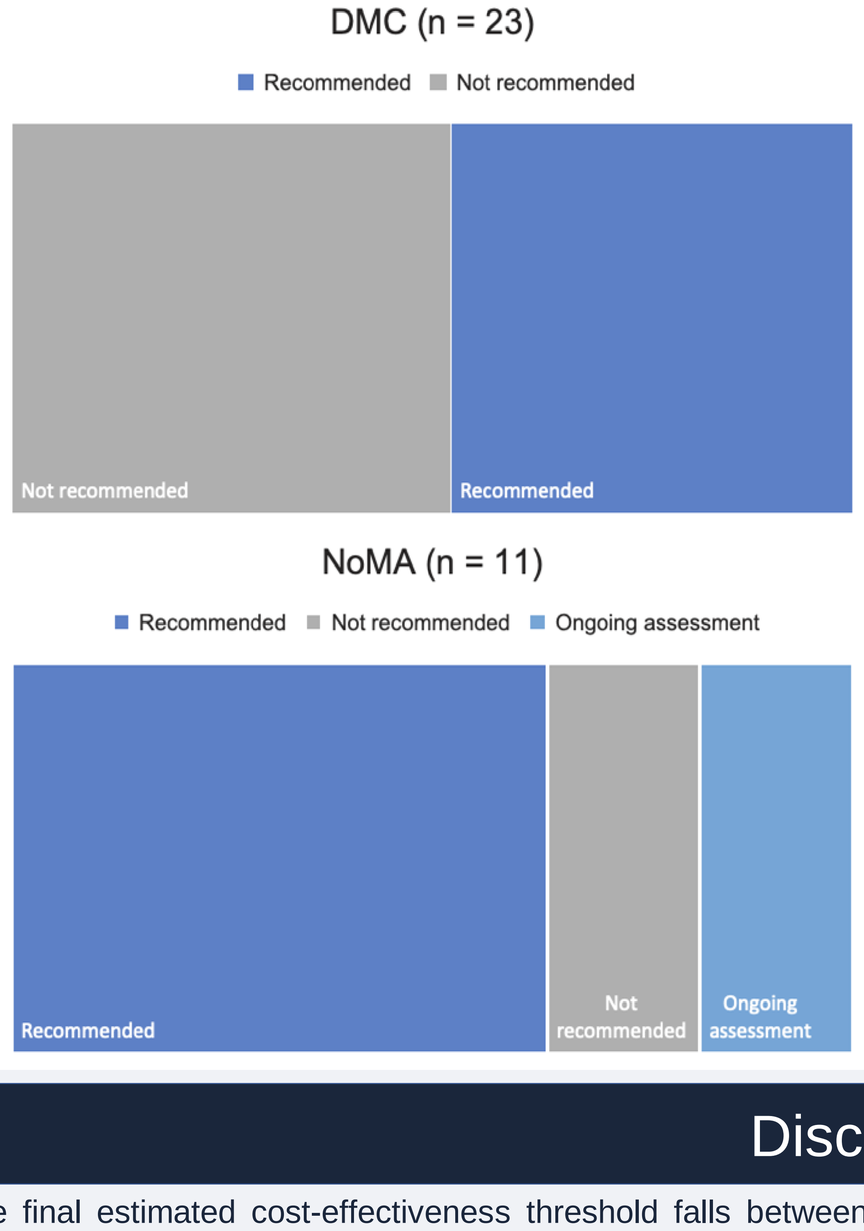
The study employed a quantitative research design, utilising publicly available data from the DMC and NoMA HTA decisions. This was achieved using two methods. The first approach employed a novel back-calculation method which used data from the Norwegian HTA decisions, more specifically disease severity and absolute shortfall [5].

The second method utilised an average discount rate determined by Amgros, the Danish procurement service [5]. The type of data extracted included recommendation statuses, pharmacy purchasing prices, type of health economic evaluation, and ICERs. In addition to estimating the CET, this study assessed reimbursement decisions, medicine indications, and common disease areas for reimbursement.

Results

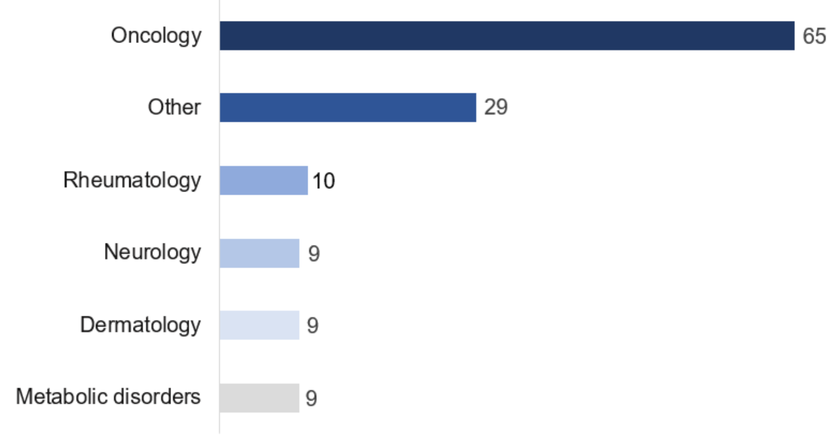
A total of 131 decisions were analysed from the DMC between the 6th of February and the 15th of March 2023, of which 23 ICERs were extracted and later used in the novel back-calculations. There were 12 medicines not recommended and 11 recommended for reimbursement. Of the 11 recommended medicines, 7 were recommended by the NoMA, whilst 2 were not recommended, and another 2 were still undergoing assessment. The second method used the 11 recommended medicines and the Amgros average discount rate applied was of 44.56%. The estimated cost-effectiveness threshold from the novel back-calculation method was 458,134 DKK/QALY (61,505 €/QALY), and from the Amgros calculation method the estimated threshold was 969,518 DKK/QALY (130,159 €/QALY). The proportion of negative to positive reimbursement recommendations was found to be almost equal in decisions made using the new assessment process in Denmark. Furthermore, it was observed that majority of medicines had one indication, and the medicines that had more than one indication belonged to oncology. Through additional analyses of disease areas, a high number of oncology, rheumatology and neurology medicines being submitted for appraisal was observed.

Recommendations in the DMC and NoMA

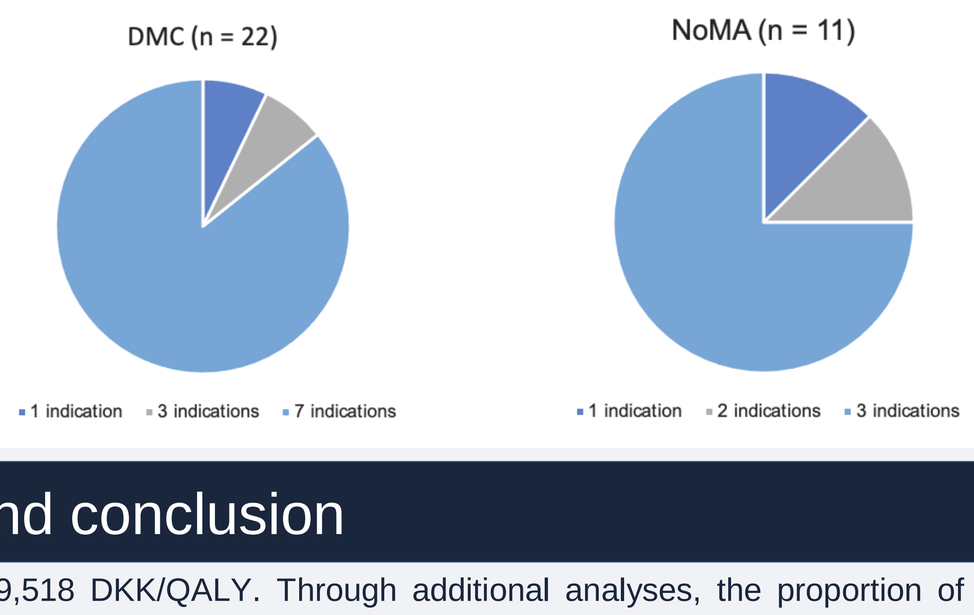


Estimated CET in Denmark: 450,000 - 970,000 DKK/QALY

Distribution of disease areas in the new DMC assessment process



Number of medicine indications in the DMC and NoMA



Discussion and conclusion

The final estimated cost-effectiveness threshold falls between 458,134 – 969,518 DKK/QALY. Through additional analyses, the proportion of negative to positive reimbursement recommendations was found to be almost equal in decisions made using the new assessment process. It was also observed that the majority of medicines had one indication, and the medicines that had more than one indication belonged to oncology. When analysing decisions and disease areas, a high number of oncology and rheumatology medicines being submitted for appraisal was observed. Overall, this study serves as a starting point for further research on the cost-effectiveness threshold used in Denmark's new HTA process, with more decisions to draw data from in the future, more concrete conclusions can be made.

References

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Abbreviations: CET: *Cost-effectiveness threshold;* ***DMC:*** *Danish Medicines Council;* ***HTA:*** *Health technology assessment;* ***ICER:*** *Incremental cost-effectiveness ratio;* ***NoMA:*** *Norwegian Medicines Agency;* ***QALY:*** *Quality-adjusted life year*