Are We Making the Right Comparisons? Examining the Willingness-to-Pay Threshold Under Different Perspectives

HTA86

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BACKGROUND

- Health Technology Assessment (HTA) agencies and third-party payers often make decisions based on a comparison between the estimated incremental cost per quality-adjusted life-year (QALY) gained from an intervention compared with current treatments and a willingness-to-pay (WTP) threshold.
- New therapies with a cost per QALY above this threshold may not be considered cost-effective, indicating that funds could be more effectively spent on other medicines or elsewhere in the health system.
- Recent methodological research proposes broadening the scope of economic analyses conducted by HTA agencies to include societal costs and benefits, such as improved health-related quality of life for caregivers or lost productivity for patients who are unable to work or who are forced to work reduced hours due to their condition.[1,2]
- The Health Economics Method Advisory (HEMA) group, an independent advisory body convened by HTA organizations in the United States (US), the United Kingdom, and Canada, recently released a report providing guidance on the inclusion of novel benefits for health economic modeling.[3] A key finding in the report was that any novel benefits included in the model must be reflected in opportunity costs. For many HTA organizations, opportunity costs are represented by a WTP threshold.
- Inclusion of these wider costs and benefits tends to result in a lower cost per QALY, because new, more effective treatments also tend to reduce societal costs and accrue more societal benefits.

However, opportunity costs of treatments forgone would also be higher under a broader societal perspective, implying that the WTP threshold should be lower than it currently is.

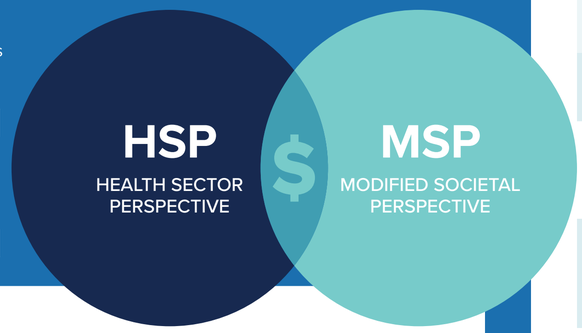
METHODS

The Institute for Clinical and Economic Review (ICER) in the US includes a modified societal perspective (MSP) in its assessments of new health technologies, which captures "costs and outcomes beyond direct health impacts."[4] We reviewed ICER assessments published from 2020 to 2025 (n=36) and, for each comparison (n=87), compared the base-case cost per QALY from the HSP with the corresponding estimate under the MSP.

- In some cases, a comparison between perspectives was not possible (n=28). Reasons included the MSP analysis was not reported, no cost per QALY was reported (in either perspective), or the intervention dominated or was dominated by the comparator.
- Many assessments included multiple comparisons. We estimated the average difference in cost per QALY between the HSP and MSP using 2 approaches:

  Unweighted: Each comparison contributed equally.

  Weighted by assessment: Each assessment contributed equally, with its weight split evenly across its comparisons (e.g., an assessment with 3 comparisons assigns a weight of one-third to each, relative to an assessment with 1 comparison).



OBJECTIVE

We sought to assess HTAs that include an estimate of societal costs and benefits as well as the traditional health sector perspective (HSP) to examine the possible magnitude of the difference in cost per QALY between the 2 perspectives.

The intent of this study is to produce a quantitative estimate to inform discussions on potential changes to WTP thresholds if broader societal perspectives are adopted in HTA decision-making, rather than provide a concrete recommendation on the magnitude by which WTP thresholds should be adjusted.

References

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Limitations

This study has several limitations:

- The analysis was intended to illustrate the difference in cost per QALY estimates that can arise when moving to a broader perspective. The magnitude of this difference found was used for this purpose only and should not be interpreted as the average difference in perspectives beyond this context.
- Only 1 type of broader perspective was considered: the MSP used by ICER in the US. Other broader perspectives are likely to differ significantly across organizations and countries.
- A significant proportion of assessments did not have enough information to enable a comparison. It is possible that the exclusion of these assessments may bias the average estimated difference in cost per QALY.

RESULTS

We found that the cost per QALY in the MSP is, on average, 14.1% (range, 0.5%-97.5%) lower than in the HSP. Weighted by the number of comparisons in each assessment, the cost per QALY is, on average, 13.2% lower in the MSP perspective.

↓14.1% MSP average reduction **unweighted**

↓13.2% MSP average reduction **weighted by assessment**

Separately, 4 (11.4%) assessments reported at least 1 intervention with a higher cost per QALY in the MSP. Details on these interventions and why they are more cost-effective under an HSP are provided in Table 1.

Table 1. Summary of Interventions More Cost-Effective Under the HSP

Intervention	ICER assessment	Cost per QALY		Explanation
		HSP	MSP	
AMX0035 or oral edaravone + BSC vs. BSC alone	AMX0035 and oral edaravone for ALS[5]	AMX0035: $2,136,000 Edaravone: $11,981,000	AMX0035: $2,445,000 Edaravone: $12,199,000	Treatments increase survival with ongoing functional limitations, leading to increased caregiver time, patient-productivity time loss, and other nonmedical costs that are captured in the MSP.
Paxlovid or fluvoxamine vs. BSC	Special assessment of outpatient treatments for COVID-19[6]	Paxlovid: $21,000 Fluvoxamine: $8,000	Paxlovid: $26,000 Fluvoxamine: $20,000	
Ensifentrine vs. current maintenance therapy alone	Ensifentrine for the treatment of COPD[7]	$492,000	$511,000	
Transthyretin stabilizing agent + BSC vs. BSC alone	DMTs for the treatment of ATTR-CM[8]	$873,000	$1,016,000	

ALS = amyotrophic lateral sclerosis; ATTR-CM = transthyretin amyloid cardiomyopathy; BSC = best supportive care; COPD = chronic obstructive pulmonary disease; COVID-19 = coronavirus disease 2019; DMT = disease-modifying therapy; ICER = Institute for Clinical and Economic Review; QALY = quality-adjusted life-year.

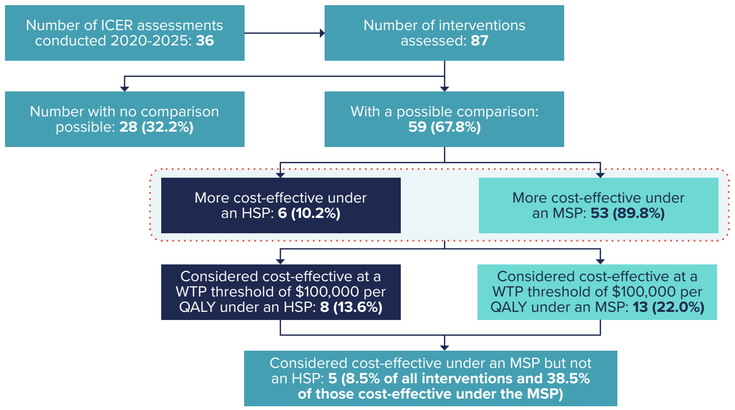
Among interventions where a direct comparison between perspectives was possible and at a WTP threshold of $100,000 per QALY:

8 (13.6%) cost-effective **under HSP**

13 (22%) cost-effective **under MSP**

A summary of the interventions included in the analysis and an overview of their cost-effectiveness under each perspective is provided in Figure 1 below.

Figure 1. Literature Review Flow Diagram



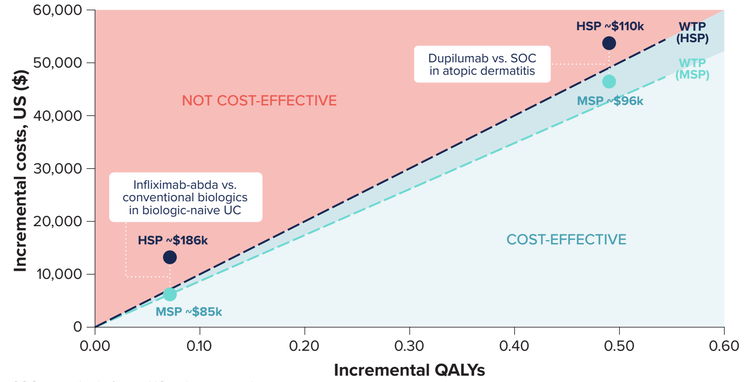
DISCUSSION

These results indicate that the cost per QALY estimates may be significantly different if wider costs and benefits are included.

Further, these differences may frequently impact decision-making, with more than a third of interventions considered cost-effective at a WTP threshold of $100,000 per QALY under ICER's MSP found not to be cost-effective under the HSP.

Figure 2 illustrates the incremental costs and QALYs for 2 interventions that are considered cost-effective under the MSP, but not under the HSP, at the WTP threshold of $100,000 per QALY. The dark blue line is the WTP threshold of $100k per QALY, whereas the teal line illustrates a hypothetical cost per QALY of ~$86,800, which is estimated as 13.2% lower (the average weighted difference in cost per QALY between the 2 perspectives) than the HSP.

Figure 2. Cost-Effectiveness of Selected Interventions at Different WTP Thresholds[9,10]



SOC = standard of care; UC = ulcerative colitis.

Notes: The estimated HSP cost per QALY for infliximab-abda versus conventional biologics in biologic-naive ulcerative colitis is ~$186,000, which would not be considered cost-effective. Therefore, it is above the dark blue WTP line. Under the MSP, the cost per QALY is ~$85,000 (due to reduced productivity costs), which would be considered cost-effective at both WTP thresholds, so it falls below both lines.

The estimated HSP cost per QALY for dupilumab versus standard of care in atopic dermatitis is ~$110,000, which would not be considered cost-effective. Therefore, it is above the dark blue WTP line. Under the MSP, the cost per QALY is ~$96,000 (due to reduced productivity costs), which would be considered cost-effective at the HSP WTP threshold, but not the hypothetical MSP WTP threshold, so it falls between the 2 lines.

These findings demonstrate the importance of considering opportunity costs whenever a broader perspective that includes costs or outcomes outside the traditional HSP. Broader perspectives provide valuable information on a treatment's impact beyond patient health, but decision-makers need to consider the trade-offs in a way that accounts for broader outcomes that current treatments provide. HTA organizations and manufacturers should ensure that models have the functionality to estimate cost-effectiveness under both perspectives.

CONCLUSIONS

- These findings suggest that the WTP threshold may need to be adjusted if a broader societal perspective is considered in HTA decision-making and policy recommendations.
- The study was US based, and only included 1 specific wider perspective, ICER's MSP. However, similar differences are likely to persist across jurisdictions and health systems.
- Further research is required to better reflect societal opportunity costs in WTP thresholds so that fair comparisons can be made.

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Presented at: ISPOR 2026; 17-20 May 2026; Philadelphia, PA, USA