

# Incremental Cost-effectiveness Thresholds for Policy Decision-makers: is ICER the Most Appropriate Measure to Use?

Sultana Al Sabahi<sup>1\*</sup> and Ahmed Almasharfi<sup>2</sup>

<sup>1</sup>Directorate General of Planning and Studies, Ministry of Health, Muscat, Oman

<sup>2</sup>Diwan Medical Service, Muscat, Oman

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\*Corresponding author: al-sabahis@hotmail.com

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In his recent publication, Al-Zakwani highlighted the paramount importance for decision-makers to make more efficient use of their limited resources.<sup>1</sup> He presented different approaches and mechanisms to identify the threshold for taking a decision after calculating the incremental cost-effectiveness ratio (ICER).<sup>1</sup> While we support his motivation, we would like to highlight here that ICER is no more the most favorable option in comparing different interventions. Although it is the most commonly reported summary measure for economic evaluation, alternative measures based on the net benefit (NB) or net health benefits concepts are equally important and currently favorable.<sup>2</sup> The following paragraphs clarify how NB can overcome some of the ICER's limitations.

First: ICER is not easily employed for comparisons between more than two alternatives. It is a pairwise measure and multiple ICERs need to be calculated to compare each pair. Further calculation will be required as strategies ruled out through dominance and extended dominance.<sup>3</sup> On the other hand, the NB is not pairwise and its value for each strategy does not depend on the other strategies; it therefore does not require checking for dominance and extended dominance.

Second: the interpretation of ICER might be unintuitive when comparing more than two strategies, as different decision rules will need to be implied depending on the sign (positive vs negative) and the quadrant of the incremental cost-effectiveness plane.<sup>4</sup> Relative to ICER, NB's interpretation is straightforward; the most cost-effective strategy is the one with the highest NB, regardless of the number of strategies that are being compared.

Third: ICER cannot be used to rank strategies or to give the magnitude by which a strategy is more or less cost-effective compared to the others. It only identifies the most cost-effective strategy as the second cost-effect might have been ruled out through dominance or extended dominance.<sup>4,5</sup> However, NB can help in ranking the strategies from the most cost-effective to the least, and can provide the relative cost-effectiveness between the strategies. For example, if strategy "A" NB is 4 QALY, strategy "B" 6 QALY and strategy "C" 2 QALY. Then strategy "B" is the most cost effective and "C" is the least cost-effective. NB value also implies that adopting strategy "B" will improve population health by an additional 2 QALY compared to strategy "A". In addition, ICER is not easy to be used for sensitivity or scenario analysis, for probabilistic analysis, or to consider equity concerns.<sup>4,5</sup>

Finally, we reemphasize Al-Zakwani's point regarding the need to calculate the threshold<sup>1</sup> because NB cannot be calculated without it, and ICER cannot be interpreted without it. Hence, both stories will remain incomplete to inform policymakers decisions if the threshold is unknown.

## References

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