

Appendix 3 (as supplied by the authors): Calculation of net monetary benefit

Net monetary benefit is calculated by first assuming a willingness to pay threshold, then converting health benefits (QALYs) into the common metric of dollars. The cost associated with each treatment strategy is then subtracted, resulting in the net benefit of each strategy expressed in the monetary units.

$$\text{Net monetary benefit} = (E * \text{WTP}) - C$$

E = effectiveness; WTP = willingness-to-pay threshold; C = cost

For example, metformin monotherapy is associated with 8.7194 QALYs and costs of \$39,924. At a willingness-to-pay threshold of \$50,000, this would result in a net monetary benefit of \$396,045. Sulphonylureas have a net monetary benefit of \$398,218. As sulphonylureas result in a greater net monetary benefit, this would rank as the most cost-effective strategy. The net monetary benefit framework has several advantages, including transparent comparison of multiple strategies, consideration of multiple willingness-to-pay thresholds, and less instability compared to incremental cost-effectiveness ratios when there are small differences in effectiveness (as observed in this analysis).

The net monetary benefit framework was used to rank the most cost-effective strategy in the base case and in sensitivity analysis, as presented in Appendix 6.