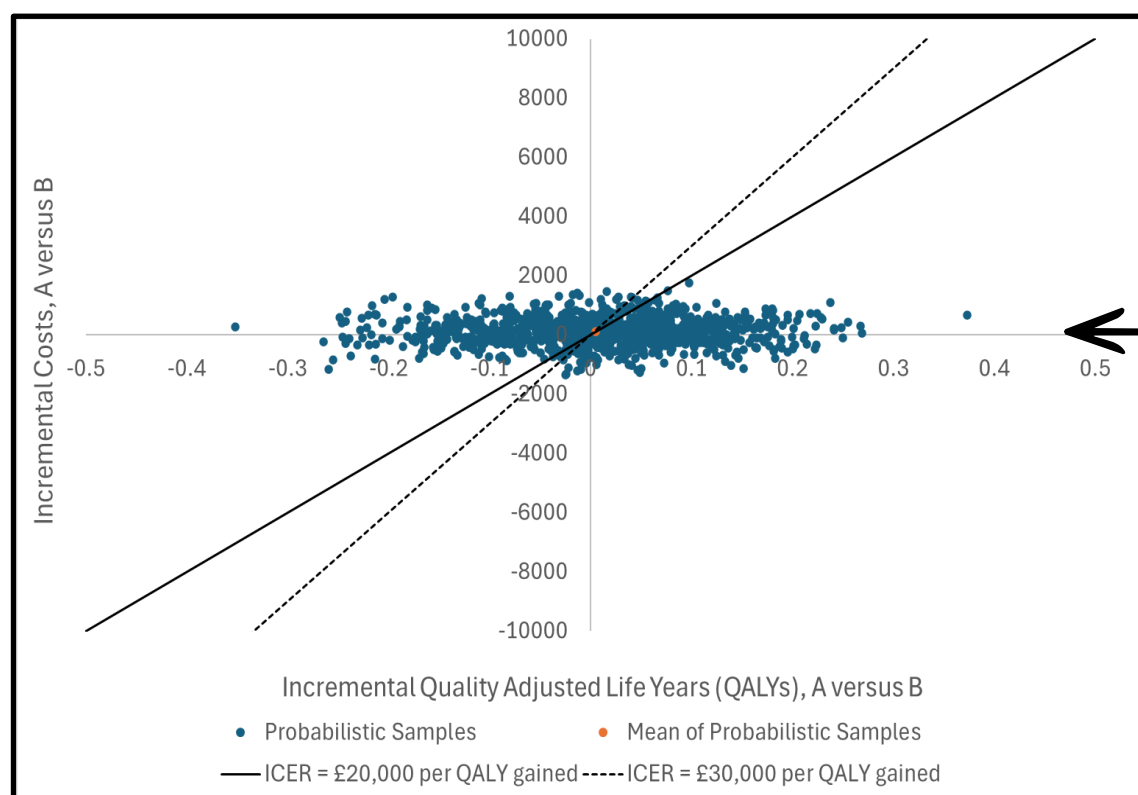


# Interpreting small differences in health utilities and incremental Quality Adjusted Life Years (QALYS)

Health benefits in economic evaluations in healthcare are typically measured using QALYs. Interpreting results can be difficult if QALY differences are small.



**Is A cost-effective compared to B?**

In the cost-effectiveness plane to the left, the mean QALY gain associated with A compared to B is very small, and is very uncertain, with many probabilistic samples resulting in a QALY loss. This is difficult to interpret because small changes in parameter values can lead to very large changes in incremental cost-effectiveness results, and very different conclusions. This might lead to a temptation to simply assume that A and B have identical QALYs.

**We have 12 recommendations that we believe are useful to follow when there is an economic analysis with small QALY gains**



## Evidence and analytical considerations

- 1 Explain the **source** and **robustness** of QALY differences, when QALY differences are small.
- 2 **Small QALY differences** alone do not mandate conducting additional scenario analyses.
- 3 **Identify drivers** of cost and QALY differences, potentially using domain-level data and comparisons with other outcome measures, **before discussing ICERs** or net benefits.
- 4 Consider the **evidence source** (RCT vs indirect comparison) when interpreting small QALY differences.
- 5 Report **decision uncertainty** (joint uncertainty in health and cost differences) using standard methods, regardless of the size of the QALY difference.



## Presentation of results

- 6 **Present uncertainty** in economic evaluation results **using standard formats**: results tables, cost-effectiveness planes, CEACs and CEAFs.
- 7 **Disaggregate results** and identify if volatile ICERs are driven by differences in costs or QALYs (including cost/QALY breakdowns by health state, and how length and quality of life contribute to the QALY gain).
- 8 **Consider using net benefits** to present the results for greater numeric stability compared to ICERs. Provide **clear explanation** to aid decision makers accustomed to interpreting ICERs.



## Interpretation of results

- 9 **All QALY differences are meaningful.** No minimum clinically importance difference threshold applies.
- 10 The **QALY distribution should be analysed** to distinguish whether there is a small QALY gain for many patients, or a large QALY gain for few patients.
- 11 Consider analyses of domain-level Health Related Quality of Life (HRQoL) data for preference-based instruments, **to identify drivers** of QALY gains and whether these are **explainable**.



## Further Research



- 12 Research should be conducted on how to best report HRQoL changes at the domain level.

For further information, the NICE DSU full report on how to interpret small differences in health utilities and incremental QALYS is available at: [www. https://sheffield.ac.uk/nice-dsu](https://sheffield.ac.uk/nice-dsu)