



## THE USE OF HEALTH STATE UTILITY VALUES IN DECISION ANALYTIC MODELS

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NICE DSU Technical Support Document:  
TSD12 The use of health state utility  
values in decision models

### Practical issues:

- Baseline/counterfactual utilities
- Combining utility values

### Baseline/counterfactual utilities

$$\Delta \text{QALY} =$$

Utility (not A) \* life years  
minus  
Utility (A) \* life years

Age = 40 years

Lifetime horizon

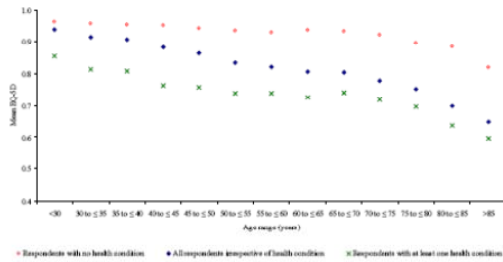
SIMPLE

### Baseline/counterfactual utilities

We know utility for Condition A, BUT:

- What is utility for not having condition A?
- Is utility for not condition A constant over the full horizon?
- Is utility for condition A constant over the full horizon?

### Mean EQ-5D scores: age & health status



What if condition specific data aren't available?

- Use data from the general population
- Use data from cohorts who do not have a similar condition
- If condition specific data are not available, use a range with data from the general population as one end of a range of plausible values

### Combining utility values for comorbidities

Economic models describe full clinical pathways

Can have multiple health states representing:

- more than one condition
- combination of events

Have a mean utility for just condition A

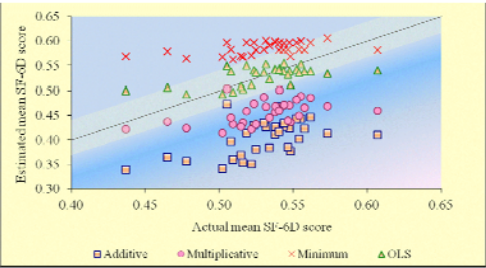
Have a mean utility for just condition B

What is utility for condition A & condition B?

### Methods used to estimate utility for A&B

- Additive
- Multiplicative
- Minimum
- Linear model (OLS regression)

Substantial differences in estimated values



Based on the limited evidence available:

- Recommend
  - Multiplicative
  - age-adjusted baseline to estimate multiplier
  - caution when estimating at extremes of the index
- range of univariate sensitivity analyses