

Simple QALYs calculations

In order to calculate QALYs you need two pieces of data:

- (1) the path of health states and the duration of each health state over the time span for which QALYs are to be calculated
- (2) the preference weights for the health states for the same durations

The preference weights for our exercise are shown below and came from TTO measurements on a random sample of the general public.

Duration	Health State	Weight
3 months	Hospital dialysis	0.62
3 months	Home confinement for tuberculosis	0.68
8 years	Home dialysis	0.65
8 years	Mastectomy for breast cancer	0.48

Duration	Health State	Weight
3 months	Hospital dialysis	0.62
3 months	Home confinement for tuberculosis	0.68
8 years	Home dialysis	0.65
8 years	Mastectomy for breast cancer	0.48

1. Sketch the QALY diagram and determine how many QALYs are gained if a person achieves an eight year life extension on home dialysis
 - a) Assuming no discounting
 - b) Assuming discounting at a rate of 5 per cent per annum

Duration	Health State	Weight
3 months	Hospital dialysis	0.62
3 months	Home confinement for tuberculosis	0.68
8 years	Home dialysis	0.65
8 years	Mastectomy for breast cancer	0.48

2. Sketch the QALY diagram and determine how many QALYs are gained if a person achieves a three month life extension on hospital dialysis

- a) Assuming no discounting
- b) Assuming discounting at a rate of 5 per cent per annum

Duration	Health State	Weight
3 months	Hospital dialysis	0.62
3 months	Home confinement for tuberculosis	0.68
8 years	Home dialysis	0.65
8 years	Mastectomy for breast cancer	0.48

3. Sketch the QALY diagram and determine how many QALYs are gained by preventing a case of tuberculosis which would have been treated at home for three months

- a) Assuming no discounting
- b) Assuming discounting at 5 per cent

Duration	Health State	Weight
3 months	Hospital dialysis	0.62
3 months	Home confinement for tuberculosis	0.68
8 years	Home dialysis	0.65
8 years	Mastectomy for breast cancer	0.48

4. Assume a breast cancer patient will become symptomatic, have a mastectomy, and live a additional six years. By screening, you can detect the breast cancer one year earlier, perform the mastectomy one year earlier, and add two years to the patient's life (that is, she now lives nine years from the mastectomy instead of six). Sketch the QALY diagram and determine how many QALYs are gained by screening,
- Assuming no discounting
 - Assuming discounting at 5 per cent

5. Sketch the QALY diagram and determine how many QALYs are achieved during the year by a patient in a one year clinical trial who has a baseline HUI health state of 133114, a six month HUI health state of 122112, and a one-year HUI2 health state of 112111. Assume that health status changes between measurements are smooth and gradual over time so that changes in utility scores can be approximated by a straight line.