... about QALYs

- A quality-adjusted life-year (QALY) takes into account both the quantity and the quality of life generated by a healthcare intervention. (Quality of life valuations are also referred to as health utilities.)

\[ \text{QALY} = \text{life expectancy} \times \text{quality of remaining life-years (utility measure)} \]

- A QALY takes one year of perfect health to be worth 1, but regards one year of less than perfect health as less than 1.

Consider an intervention which results in a person living for an additional four years rather than dying in one year, but where the health-related quality of life following the intervention was less than perfect health i.e. valued at 0.6, compared with 1.

\[
\begin{array}{c|c|c}
\text{Years of life} & \text{QALYs gained} & \text{QALYs lost} \\
1 & & 1 \\
5 & & 0.6 \\
\end{array}
\]

\[
\begin{array}{c|c|c}
\text{Quality of life} & 1.0 & 0.6 \\
\end{array}
\]

\[
\begin{array}{c|c|c|c}
\text{4 additional years of life @ 0.6} & 2.4 & 5 \text{ years of life @ 0.6} & 3.0 \\
\text{less 1 year @ 1 - 0.6} & 0.4 & \text{or} & \text{less 1 year @ 1} & 1.0 \\
\text{QALYs generated by the intervention} & 2.0 & \text{QALYs generated} & 2.0 \\
\end{array}
\]

- QALYs provide a common currency to assess the extent of the benefits gained from a variety of interventions. QALYs combined with the costs of interventions generate cost-utility ratios; these indicate the additional costs required to generate a year of perfect health (cost per QALY). Interventions can then be compared and prioritised based on whether they are relatively inexpensive (low cost per QALY) or relatively expensive (high cost per QALY).