Here, we use the utilities measured in the RCT of panitumumab compared with best supportive care by Odom and colleagues[56] to estimate that the utility for those in progression-free survival taking panitumumab is 0.12 higher than for those in progression-free survival on best supportive care.

Define $PFS_{\text{pan}}(t)$ and $PFS_{\text{BSC}}(t)$ as the progression-free survival probabilities as a function of time t for panitumumab and best supportive care respectively. Also, define $\Delta U_{\text{pan}}(t)$ and $\Delta U_{\text{BSC}}(t)$ as the changes in utility from baseline over time for panitumumab and best supportive care, respectively, and U_{B} as the baseline utility. Then, the total QALYs in progression-free survival for panitumumab and best supportive care are:

$$U_B \int_0^\infty PFS_{pan}(t)dt + \int_0^\infty \Delta U_{pan}(t) PFS_{pan}(t)dt \qquad \text{[Equation 12]}$$

$$U_B \int_0^\infty PFS_{BSC}(t)dt + \int_0^\infty \Delta U_{BSC}(t) PFS_{BSC}(t)dt \qquad \text{[Equation 13]}$$

Expressed differently, suppose that we assume time-independent utilities in progression-free survival of U_{pan} and U_{BSC} for panitumumab and best supportive care, respectively. Then, the total QALYs for panitumumab and best supportive care are:

$$U_{pan} \int_0^\infty PFS_{pan}(t)dt \qquad \text{[Equation 14]}$$

$$U_{BSC} \int_0^\infty PFS_{BSC}(t)dt \qquad \text{[Equation 15]}$$

Solving these two pairs of equations gives:

$$U_{pan} = U_B + \frac{\int_0^\infty \Delta U_{pan}(t) PFS_{pan}(t)dt}{\int_0^\infty PFS_{pan}(t)dt} \qquad \text{[Equation 16]}$$

$$U_{BSC} = U_B + \frac{\int_0^\infty \Delta U_{BSC}(t) PFS_{BSC}(t)dt}{\int_0^\infty PFS_{BSC}(t)dt} \qquad \text{[Equation 17]}$$

and the quantity we require, the difference between the mean progression-free survival utilities for panitumumab and best supportive care, is:

$$U_{pan} - U_{BSC} = \frac{\int_0^\infty \Delta U_{pan}(t) PFS_{pan}(t)\,dt}{\int_0^\infty PFS_{pan}(t)\,dt} - \frac{\int_0^\infty \Delta U_{BSC}(t) PFS_{BSC}(t)\,dt}{\int_0^\infty PFS_{BSC}(t)\,dt} \qquad \text{[Equation 18]}$$

We calculate this quantity in our model as 0.12, using discrete time intervals. By necessity we have assumed that, for time periods after 17 weeks, the same decrement in utility from baseline at time 17 weeks applies.