Cost-effectiveness considerations and the QOF

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What is the role of cost-effectiveness analysis in pay for performance?

- Value in health care
- Analytical framework
- Data requirements
- Further issues
A scheme is of value if its benefit exceeds its opportunity cost.

Alternative views on source of opportunity costs.

Key is determining opportunity costs of expenditure in the health care system.
Many of you will be familiar with the ICER:

\[ \text{ICER} = \frac{\Delta C}{\Delta H} < k \]

Alternatively, we can transform the ICER and state that the NMB or NHB of treatment A compared to B is:

\[ \text{NMB} = k\Delta H - \Delta C \quad \text{or} \quad \text{NHB} = \Delta H - \frac{\Delta C}{k} \]

Where:

- \( k \) is the cost-effectiveness threshold
- \( \Delta H \) is the incremental health benefit of treatment A compared to treatment B
- \( \Delta C \) is the incremental cost of treatment A compared to treatment B
If we assume that at present a proportion \( \rho \) of eligible patients are already receiving A rather than B.

Therefore the expected patient net monetary benefit (NMB) is:

\[ E(NMB) = \rho (k\Delta H - \Delta C) \]

Following the introduction of a pay for performance payment \((I)\). Overall benefit to health care system for each patient treated is now:

\[ (k\Delta H - \Delta C) - I \]

Let \( \sigma \) be the proportion of patients who will receive the treatment once the investment in implementation has occurred, where \( \rho \leq \sigma < 1 \)

Following the introduction of the payment the increase in expected NMB given the payment is:

\[ \Delta E(NMB) \text{ with } I = (\sigma - \rho)(k\Delta H - \Delta C) - \sigma I \]
Implementation will only be cost-effective when the net value of actual implementation is positive, giving the condition:

\[ I \leq \frac{((\sigma - \rho) (k \Delta H - \Delta C))}{\sigma} \]

It can be seen that a payment may not be considered cost-effective due to any (or a combination) of 3 possible reasons:

1) *Treatment is insufficiently cost-effective* \((k \Delta H - \Delta C \text{ is small})\)
2) *Uptake is already high* \((\rho \text{ is large})\)
3) *Implementation payments generate too small a change in uptake* \((\sigma - \rho \text{ is small})\)
Data requirements

- Incremental health (\(\Delta H\)) and costs (\(\Delta C\)) associated with the treatment
- Proportion of the payment (I) which is offsetting costs (\(\Delta C\))
- Population of interest
- Estimates of utilisation with and without a pay for performance scheme
- Estimate of the cost-effectiveness threshold (opportunity cost of resources)
Further issues

- Maximum possible payments: Expected value of perfect implementation
- Impact over time
  - Importance of trends in use of the treatment
  - Should payments be withdrawn in the future?
- Prioritising different treatments for introduction