Evaluation of a predevelopment service delivery intervention: an application to improve clinical handovers

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Received 22 May 2012
Accepted 7 August 2012
Published Online First 13 September 2012

Abstract

Background We developed a method to estimate the expected cost-effectiveness of a service intervention at the design stage and 'road-tested' the method on an intervention to improve patient handover of care between hospital and community.

Method The development of a nine-step evaluation framework:

1. Identification of multiple endpoints and arranging them into manageable groups;
2. Estimation of baseline overall and preventable risk;
3. Bayesian elicitation of expected effectiveness of the planned intervention;
4. Assigning utilities to groups of endpoints;
5. Costing the intervention;
6. Estimating health service costs associated with preventable adverse events;
7. Calculating health benefits;
8. Cost-effectiveness calculation;
Results

Literature review suggested that adverse events follow 19% of patient discharges, and that one-third are preventable by improved handover (ie, 6.3% of all discharges). The intervention to improve handover would reduce the incidence of adverse events by 21% (ie, from 6.3% to 4.7%) according to the elicitation exercise. Potentially preventable adverse events were classified by severity and duration. Utilities were assigned to each category of adverse event. The costs associated with each category of event were obtained from the literature. The unit cost of the intervention was €16.6, which would yield a Quality Adjusted Life Year (QALY) gain per discharge of 0.010. The resulting cost saving was €14.3 per discharge. The intervention is cost-effective at approximately €214 per QALY under the base case, and remains cost-effective while the effectiveness is greater than 1.6%.

Conclusions

We offer a usable framework to assist in ex ante health economic evaluations of health service interventions.