

COST-EFFECTIVENESS METHODOLOGIES OF STRATEGIES THAT AIM TO CHANGE THE BEHAVIOUR OF HEALTHCARE PROFESSIONALS

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INTRODUCTION

Cost-effectiveness models for pharmaceuticals are widespread and their methodologies are becoming standardised. This is particularly due to the stringent requirements of Health Technology Assessment authorities and reimbursement agencies.

Changing the behaviour of healthcare professionals (HCPs), in order to make the most efficient use of resources or to improve quality of care, has been a prominent policy strategy for many decades.¹ However, these strategies are rarely assessed for how cost-effective they may be compared to current practice or to other similar strategies.

Where they have been assessed for cost-effectiveness, it is unclear whether a standard methodology is being utilised for measuring such an outcome in this situation.

OBJECTIVE

To review the current literature on the cost-effectiveness evaluations of behaviour change policies for healthcare professionals and to assess whether the methodologies utilised were standardised and robust.

METHODS

A search of the MEDLINE database and reference lists of included publications was performed from 1990 up to May 2010. Additional searches on Google scholar were also undertaken.

The major search terms used were:

Health personnel[MeSH], health personnel/education[MeSH], general practice[tw], (behaviour change[tw] OR behavior change[tw] OR change of behaviour[tw] OR change of behavior[tw]) (education[tw] OR education[MeSH]), costs and cost analysis[MeSH]

Inclusion criteria for studies:

- Performed an economic evaluation of a strategy that aimed to change the behaviour of HCPs (not general education or continuing professional development)
- Investigated the effectiveness of the strategy or used existing effectiveness data
- Assessed cost per outcome change or outcome change per cost unit

RESULTS

- 13 economic evaluations, from 10 publications, were identified that met the inclusion criteria (Table 1).
- 9 were based on randomised controlled trials (RCTs), 2 on observational studies and 2 used published life expectancy and utility data.
- The 13 cost-effectiveness evaluations measured (Figure 1):
 - implementation cost per life year (LY), quality adjusted life year (QALY) or other health outcome gained (6)^{4,7,9,10,11}
 - total policy cost per LY gained (2) (this incorporates the cost-effectiveness of the treatment that the behaviour change strategy aims to increase use of)⁶
 - cost per unit behaviour change (3) (eg. cost per percent change in prescribing)^{2,5,8}
 - cost per unit uptake of programme (1)⁵
 - percent change in outcome (uptake of a practice) per £(1)³
- The majority of evaluations took a healthcare provider perspective (Figure 2).
- There was no agreement between the 13 evaluations as to whether physician time should be included in the cost analysis or not (yes (5), no (6), not stated (2); Figure 3).
- Only 3 evaluations considered a time frame beyond 1 year and took into account that future implementations would be required to maintain the behaviour change.^{4,9}
- Discounting of values was utilised by these 3 evaluations (3%-3.5% per year), and by 1 other study (percent not stated).^{4,9,10}
- Sensitivity analysis was performed on the economic outcome data in only 5 evaluations.^{2,5,9,10}

Figure 1: Cost-effectiveness measurement used

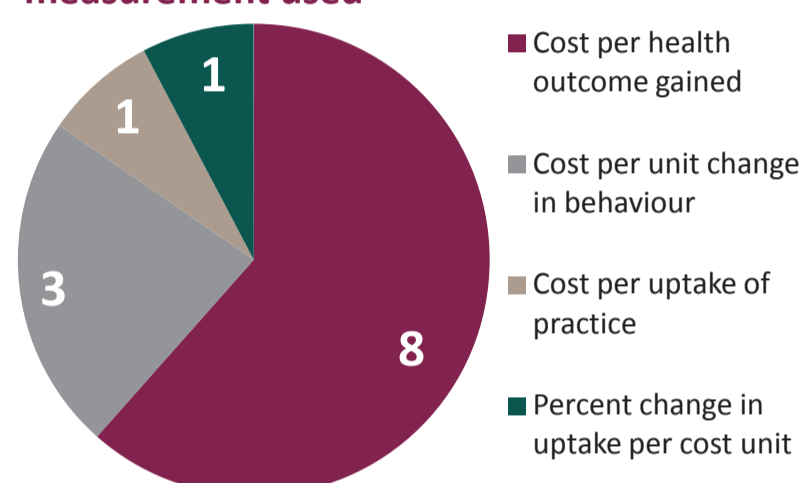


Figure 2: Perspectives of the economic evaluations

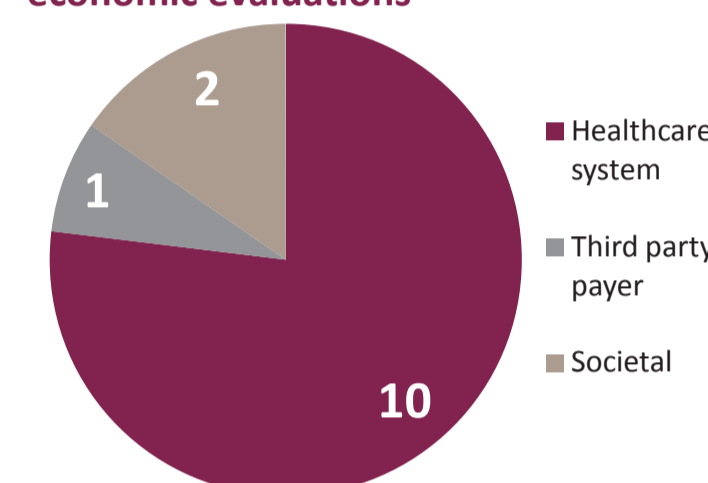


Figure 3: Were HCP time costs included in the analysis?

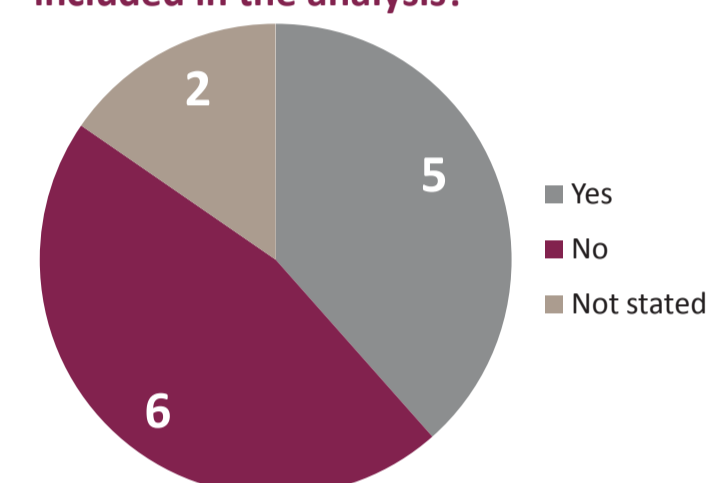


Table 1: Cost-effectiveness methodologies for behaviour change strategies for HCPs

Reference	Based on what type of data?	Cost-effectiveness measure	Perspective	HCP time included in costs?	Timeframe	Discounting	Sensitivity analysis
Akers L et al. 2006 ²	RCT	Cost per unit behaviour change (measured by questionnaire)	Healthcare system	Yes	1 year	No	Yes
Clarkson JE et al. 2008 ³	RCT	% change in uptake of practice per £	Societal	Yes	6 months	No	On effectiveness data only
Gandjour A 2005 ⁴ (2 evaluations)	Published life expectancy	Cost per QALY	Healthcare system	No	Lifetime	3% per year	No
Gomel MK et al. 1998 ⁵ (2 evaluations)	RCT	Cost per uptake Cost per extra patient advised	Healthcare system	No	3 months	No	Yes
Mason J et al. 2001 ⁶ (2 evaluations)	RCT	Policy cost per LY	Healthcare system	No	1 year	No	No
Morriss R et al. 1998 ⁷	Prospective cohort study	Cost per extra successfully treated patient	Healthcare system	No	3 months	No	No
Naughton C et al. 2009 ⁸	RCT	Cost per % change in prescribing	Healthcare system	Unclear	Unclear	Unclear	No
Norman R et al. 2010 ⁹	Observational study	Cost per QALY	Societal	Yes	10 years	3.5% per year	Yes
Pinget C et al. 2007 ¹⁰	RCT	Cost per LY	3 rd party payer	Yes	1 year	Yes, % not stated	Yes
Wolters R et al. 2006 ¹¹	RCT	Cost per change in health outcome	Healthcare system	Unclear	3 months	No	No

DISCUSSION

Despite behaviour change strategies for HCPs being a widespread approach to healthcare, there are few evaluations on the cost-effectiveness of this type of intervention. More robust evaluations are required, with health outcomes preferably assessed as LYs or QALYs to allow comparisons to be made across studies. Future evaluations must consider timeframe, discounting, sensitivity analysis, societal costs and costs due to HCP time:

Timeframe: Careful consideration of the timeframe is particularly important for behaviour change strategies for two reasons:

- The lag time until a change in health outcome becomes visible may be long.
- Behaviour changes are not always sustained over long periods of time. An effectiveness study on a computer based method for influencing behaviour change found that there is a significant need for constant re-implementation of the programme for maintenance of the behaviour change.¹²

Discounting: For economic models that span a time period of many years, it is important to give more value to short-term outcomes than to longer-term ones, which is done through annual discounting.

Sensitivity Analysis: Performing sensitivity analyses to ensure robust results is standard in pharmaceutical economic evaluations and therefore must become more common in other areas such as behaviour change evaluations.

Perspective: A healthcare provider perspective is useful, as it is frequently this stakeholder who wishes to assess whether the strategy would be worth their investment. However, using a societal perspective in addition to a healthcare provider one is also important, in order to evaluate how the policy would affect patient out-of pocket costs and productivity at work.

Professional time: Some evaluations argue that HCP time costs should not be taken into account as the healthcare provider will pay the HCP the same salary with or without the behaviour change intervention. However, this ignores the fact that when an HCP donates some of their time to the intervention, they have to reduce the time spent on other activities, which could have consequences on other patient outcomes.

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