Effectiveness and efficiency of guideline dissemination and implementation strategies

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Executive summary

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Executive summary

Background

Clinical practice guidelines are an increasingly common element of clinical care throughout the world. Such guidelines have the potential to improve the care received by patients by promoting interventions of proven benefit and discouraging ineffective interventions. However, the development and introduction of guidelines are not without costs. In some circumstances, the costs of development and introduction are likely to outweigh their potential benefits. In other circumstances, it may be more efficient to adopt less costly but less effective dissemination and implementation strategies. Local healthcare organisations have relatively few resources for clinical effectiveness activities and policy makers need to consider how best to use these to maximise benefits.

Objectives

The aims of the study were:

- to undertake a systematic review of the effectiveness and costs of different guideline development, dissemination and implementation strategies
- to estimate the resource implications of different development, dissemination and implementation strategies
- to develop a framework for deciding when it is efficient to develop and introduce clinical guidelines based upon the potential costs and benefits of the targeted clinical activity and the effectiveness and costs of guideline development and introduction.

Methods

Systematic review of the effectiveness and efficiency of guideline dissemination and implementation strategies

Data sources

MEDLINE (1966–1998), Healthstar (1975–1998), Cochrane Controlled Trial Register (4th edition 1998), EMBASE (1980–1998), SIGLE (1980–1988) and the specialised register of the Cochrane Effective Practice and Organisation of Care (EPOC) group were searched using a gold standard search strategy developed from handsearches of key journals. The search strategy was 93% sensitive and 18% specific.

Study selection (inclusion criteria)

- *Types of study design*: randomised controlled trials, controlled clinical trials, controlled before and after studies and interrupted time series
- *types of participant*: medically qualified healthcare professionals
- *types of intervention*: guideline dissemination and implementation strategies
- *types of outcome*: objective measures of provider behaviour and/or patient outcome.

Data extraction (and assessment of validity)

Two reviewers independently abstracted data on the methodological quality of the studies (using the Cochrane EPOC group's methodological quality criteria), characteristics of study setting, participants, targeted behaviours and characteristics of interventions. Studies reporting economic evaluations and cost analyses were further assessed against the *British Medical Journal* guidelines for reviewers of economic evaluations.

Data synthesis

Single estimates of dichotomous process variables (e.g. proportion of patients receiving appropriate treatment) were derived for each study comparison based upon the primary end-point (as defined by the authors of the study) or the median measure across several reported end-points. An attempt was made to reanalyse studies with common methodological weaknesses. Separate analyses were undertaken for comparisons of single interventions against 'no-intervention' controls, single interventions against controls receiving interventions, multifaceted interventions against 'no-intervention' controls and multifaceted interventions against controls receiving interventions. The study also explored whether the effects of multifaceted interventions increased with the number of intervention components. For each intervention, the number of comparisons showing a positive direction of effect, the ▶

median effect size across all comparisons, the median effect size across comparisons without unit of analysis errors, and the number of comparisons showing statistically significant effects were reported. A planned meta-regression analysis could not be undertaken owing to the large number of different combinations of multifaceted interventions.

Survey of estimating the feasibility and likely resource requirements of guideline dissemination and implementation strategies in UK settings

Telephone interviews were conducted with key informants from primary and secondary care.

Results (research findings)

Systematic review of the effectiveness and efficiency of guideline dissemination and implementation strategies

In total, 235 studies reporting 309 comparisons met the inclusion criteria. The overall quality of the studies was poor. Seventy-three per cent of comparisons evaluated multifaceted interventions, although the maximum number of replications of a specific multifaceted intervention was 11 comparisons. Overall, the majority of comparisons reporting dichotomous process data (86.6%) observed improvements in care; however, there was considerable variation in the observed effects both within and across interventions. Commonly evaluated single interventions were reminders (38 comparisons), dissemination of educational materials (18 comparisons) and audit and feedback (12 comparisons). There were 23 comparisons of multifaceted interventions involving educational outreach. The majority of interventions observed modest to moderate improvements in care. For example, the median absolute improvement in performance across interventions was 14.1% in 14 cluster randomised comparisons of reminders, 8.1% in four cluster randomised comparisons of dissemination of educational materials, 7.0% in five cluster randomised comparisons of audit and feedback and 6.0% in 13 cluster randomised comparisons of multifaceted interventions involving educational outreach. No relationship was found between the number of component interventions and the effects of multifaceted interventions.

Only 29.4% of comparisons reported any economic data. Eleven reported cost-effectiveness analyses, 38 reported cost consequence analyses (where differences in cost were set against differences in several measures of effectiveness) and 14 reported cost analyses (where some aspect of cost was reported but not related to benefits). The majority of studies only reported costs of treatment; only 25 studies reported data on the costs of guideline development or guideline dissemination and implementation. The majority of studies used process measures for their primary end-point, despite the fact that only three guidelines were explicitly evidence based (and may not have been efficient). Overall, the methods of the economic evaluations and cost analyses were poor. The viewpoint adopted in economic evaluations was only stated in ten studies. The methods to estimate costs were comprehensive in about half of the studies, and few studies reported details of resource use. Owing to the poor quality of reporting of the economic evaluation, data on resource use and cost of guideline development, dissemination and implementation were not available for most of the studies; only four studies provided sufficiently robust data for abstraction.

Survey of estimating the feasibility and likely resource requirements of guideline dissemination and implementation strategies in UK settings

Respondents rarely identified existing budgets to support guideline dissemination and implementation strategies and made frequent comments about using ‘soft money’ or resources for specific initiatives to support such activities. In general, the respondents thought that only dissemination of educational materials and short (lunchtime) educational meetings were generally feasible within current resources.

Conclusions: implications for healthcare and recommendations for research

There is an imperfect evidence base to support decisions about which guideline dissemination and implementation strategies are likely to be efficient under different circumstances. Decision makers need to use considerable judgement about how best to use the limited resources they have for clinical governance and related activities to maximise population benefits. They need to consider the potential clinical areas for clinical effectiveness activities, the likely benefits and costs required to introduce guidelines and ►

the likely benefits and costs as a result of any changes in provider behaviour. Further research is required to: develop and validate a coherent theoretical framework of health professional and organisational behaviour and behaviour change to inform better the choice of interventions in research and service settings, and to estimate the efficiency of dissemination and implementation strategies in the presence of different barriers and effect modifiers.

Publication

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