Prompting clinicians about preventive care measures: a systematic review of randomized controlled trials

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CRD summary
Clinician reminders were a successful approach for increasing the rates of preventative care, although their effectiveness remained modest. Given limitations in the method of synthesis and the unclear quality of included studies, the authors’ conclusions should be treated with caution.

Authors’ objectives
To update a previous review on the impact of prompting physicians on preventative care (see Other publications of related interest).

Searching
MEDLINE, CINAHL, ISI Web of Science, Health and Psychosocial Instruments and the Health Reference Centre were searched from January 1997 to December 2004 for studies published in English. Search terms were reported. The bibliographies of identified systematic reviews and meta-analyses were searched for additional studies. Identified articles were combined with 33 studies from the previous review.

Study selection
Randomised controlled trials (RCTs) of reminder systems for at least one of 16 identified preventative care measures that targeted clinicians were eligible for inclusion. Inclusion criteria for outcomes and patients were not stated.

Included RCTs were of paper-based (34 per cent), computer-generated paper printout (52 per cent) and computer-based (13 per cent) reminder systems targeting 11 groups of preventative care measures, the most common of which were cancer screening and vaccinations. Reminder systems targeted physicians and nurses in internal medicine, cardiology, obstetrics and gynaecology, paediatrics and general practice. Most studies were in outpatient settings. The patients were not described. Outcomes reported in the review were completed preventative health care measures.

Study selection was performed in duplicate with disagreements resolved by consensus.

Assessment of study quality
Methodological quality of the included articles was assessed using an instrument from the previous review that measured 10 criteria (including sample definition, testing randomisation, intervention, effect variable definition, blinding, numeric table of effect variables, ratio of withdrawals and analysis of effect variables). Technical aspects related to proper sampling were weighted heavily (10 points each). Each study was awarded a quality score between 0 and 100. Studies scoring less than 50 were excluded from the review. The validity assessment was performed independently by two reviewers with disagreements resolved by consensus.

Data extraction
Data were extracted for the largest outcome effect, and the control or baseline data were subtracted from this to provide an intervention effect for each study. Odds ratios were converted into percentages. Where more than one intervention was measured in a study, data were extracted separately for each intervention. The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
The unweighted difference from each study was pooled within pre-set groups (implementation strategy, reminder strategy and intervention) to give an overall average effect expressed as an average difference in percentages with associated standard deviations (SD).

Results of the review
Sixty one studies were included for review (n= 144,605) reporting on 264 interventions. Information was not provided on the methodological quality of individual studies, but all studies scored ≥50 out of 100 on the validity assessment.

Paper-based reminders (80 interventions; 14 per cent average increase, SD 15), computer generated reminders (136 interventions; 12 per cent average increase, SD 13) and computerised reminders (48 interventions; 13 per cent average increase, SD 18) all showed an increase in completion of preventative care measures compared to control or baseline.

Prompting only the clinician resulted in an average increase in completion of preventative measures of 14 per cent (175 interventions) compared to an average increase of 10 per cent (105 interventions; SD 12) when both clinician and patient were prompted. When comparing different preventative care measures, the average difference in completion of preventative care compared to control ranged from 23 per cent (six interventions; SD 16) for smoking cessation to 10 per cent (51 interventions; SD 15) for mammography. For all preventative care measures, the SD was close to or greater than the average difference between intervention and control.

**Authors' conclusions**
Clinician reminders were a successful approach for increasing the rates of preventative care, although the effectiveness remained modest.

**CRD commentary**
The review question was not clear and inclusion criteria for patients and outcomes were not stated. Several relevant databases were searched. The search was restricted to published articles in English, thus introducing the possibility of language and publication bias. Appropriate steps were taken in the study selection and validity assessment processes to minimise reviewer error and bias, though it was unclear whether similar steps were taken in the data extraction process. There was insufficient information on the results of the validity assessment or on individual studies to determine the quality of the included studies; therefore, the reliability of the data was unclear. Statistical heterogeneity was not assessed, methods used to pool results were crude, tests of significance were not used and standard deviations were wide for most outcomes. Therefore, the reliability of the results was unclear. Given limitations in the method of synthesis and the unclear quality of included studies, the authors' conclusions should be treated with caution.

**Implications of the review for practice and research**
Practice: the authors did not state any implications for practice.

Research: the authors did not state any implications for research.

**Funding**
National Library of Medicine Training Grant (LM T15 007450-03)
National Library of Medicine Grant (LM K22 08576-02)

**Bibliographic details**

**PubMedID**
18308989

**DOI**
10.1197/jamia.M2555

**Other publications of related interest**
Indexing Status
Subject indexing assigned by NLM

MeSH
Humans; Practice Patterns, Physicians’ /statistics & numerical data; Preventive Health Services /utilization; Preventive Medicine /standards; Quality Assurance, Health Care; Randomized Controlled Trials as Topic; Reminder Systems

AccessionNumber
12008106891

Date bibliographic record published
23/12/2008

Date abstract record published
15/04/2009

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.