The relationship between the extent of collaboration of general practitioners and pharmacists and the implementation of recommendations arising from medication review: a systematic review

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CRD summary
This review found that recommendations arising from medication review for older patients were more likely to be implemented in research studies where the review involved a higher degree of collaboration between doctors and pharmacists. This conclusion appears reliable but the absence of evidence for an effect on health outcomes potentially limits the practical value of the findings.

Authors' objectives
To assess the relationship between general practitioner (GP)-pharmacist collaboration and implementation of recommendations resulting from medication review.

Searching
The authors searched MEDLINE, EMBASE and Web of Science from 2000 to April 2012. Search terms were reported. Only studies in English were included in the review.

Study selection
Randomised controlled trials (RCTs) of medication review that involved both GPs and pharmacists were eligible for the review. Patients whose medications were reviewed had to be living at home, with an average age of 70 years or older and not recently discharged from hospital. The primary outcome of interest was the implementation rate of recommendations arising from medication review. Differences between intervention and control groups in clinical, intermediate and process outcomes were also of interest.

Mean age of patients in included trials was 76.6 years and 66% were female. The mean number of prescribed drugs was 7.2 (range 4.5 to 12). Details of medication review interventions varied. The number of recommendations per patient ranged from 0.3 to 11.5. Three trials were done in the UK, three in the USA and two in the Netherlands.

Two reviewers independently selected studies for inclusion. Disagreements were resolved by discussion or by consulting a third reviewer.

Assessment of study quality
Study quality was assessed using a Delphi list including 11 items. Results were expressed as a numerical score. Trials meeting five or fewer criteria were excluded for analysis of outcomes. Two reviewers independently assessed study quality. Disagreements were resolved by discussion or by consulting a third reviewer.

Data extraction
Data were extracted on the presence or absence of eight key elements that reflected GP-pharmacist collaboration in the medication review interventions. The rate of implementation of recommendations from the medication review was extracted or calculated.

Two reviewers independently extracted the data. Disagreements were resolved by discussion or by consulting a third reviewer.

Methods of synthesis
Meta-regression was used to assess the relationship between the number of key elements and the implementation rate, with number of recommendations as a possible effect moderator. A brief narrative synthesis of effects of medication review on outcomes was presented and the number of trials showing a significant effect was reported ('vote-counting').

Results of the review
Twelve RCTs involving 5,203 patients were included. The number of GPs and pharmacists involved was unclear. Quality scores ranged from 6 to 9 out of 11. The mean number of key elements in the interventions was 5.2 (range 1 to 8) and the mean implementation rate of recommendations was 50% (range 17 to 86%). There was a statistically significant association between number of key elements and implementation rate. Medication review had no significant effect on quality of life (six RCTs) or hospital admission (four RCTs). Results for intermediate and process outcomes were also reported.

Authors' conclusions
The number of key elements reflecting collaborative aspects of medication review was significantly associated with the implementation of recommendations arising from the review.

CRD commentary
The review addressed a relevant question about how best to implement a standard, potentially complex, intervention in primary care. The inclusion criteria were clear, but given the focus of the review, the need for a restriction to RCTs was uncertain. The search covered several relevant databases. Non-English publications were excluded and there was no apparent attempt to locate unpublished studies, so some relevant trials could have been omitted. Appropriate methods were used to minimise reviewer errors or bias in the review process. Study quality was assessed and the results used in selecting trials for inclusion. Presentation of quality data as summary scores only was of limited value.

The synthesis involved meta-regression for the primary outcome together with a limited narrative synthesis. Meta-regression suggested an association between GP-pharmacist collaboration and implementation of recommendations. The association appeared robust but the analysis could not establish whether the relationship was causal. The absence of evidence for an effect on health outcomes potentially limited the practical value of the findings.

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

Research: The authors stated that further research was required to determine which collaborative elements were most important and to assess the influence of patient factors on implementation of recommendations. They also stated that large multicentre trials would be needed to establish the effect of standardised collaborative medication review on health outcomes but such trials may be difficult and expensive to organise.

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