

The Effect of Clinical Medication Review on Morbidity, Hospital Admission/Readmission or Mortality Caused by Drug-Related Problems: A Systematic Review

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Background Drug-related problems (DRPs) and especially adverse drug events (ADEs) are associated with patient hospitalisation and unnecessary health care use. A clinical medication review (CMR) is considered an important measure to detect and prevent DRPs. However, the impact of CMRs on various health outcomes, such as hospital admissions/re-admissions, morbidity or mortality, is yet unclear.

Purpose To assess the evidence for the effectiveness of CMRs (type 3) in reducing the impact of DRPs on the health outcomes morbidity, mortality and hospital admission/readmission.

Method The databases MEDLINE, Embase and the Cochrane Library were searched for relevant studies. Studies were reviewed by two independent researchers. Additional studies were obtained from reference searches. There were no restrictions with respect to study design, setting and participants. Studies had to report data on pharmacist-led CMRs as method of intervention. Primary outcomes were drug-related hospital admissions/re-admissions, morbidity and mortality. Secondary outcomes were ADE-related hospital admissions/re-admissions, morbidity or mortality.

Findings 1027 studies were identified, of which 11 met the inclusion criteria ? seven randomised clinical trials, three quasi experimental studies and one observational study. The follow-up duration varied from 30 days up to 12 months and the studies were heterogeneous on setting, study subjects and measured outcomes. The association most frequently reported was between a CMR and drug-related hospital admissions/re-admissions. Eight studies reported on drug-related re-admissions and four studies on drug-related admissions. One study reported on drug-related mortality and there were no reports on the effect of CMR on drug-related morbidity. In most studies significant differences in outcome results between the intervention and comparator group were not found.

Conclusion There is only a limited number of studies available on the relationship between CMRs and the improvement of drug-related patient health outcomes. For the time spans investigated in research, we found no evidence that a clinical medication review has a beneficial effect in reducing drug-related hospital admissions/readmission. Also, no effect on reducing drug-related morbidity and mortality could be observed. The heterogeneity on design and reporting make the studies difficult to compare. The relatively short study duration could lead to an underestimation of the effects on a longer term. Studies with a follow-up of one year or longer of high quality could provide a better understanding on the effectiveness of a CMR on health outcomes. Developing a core outcome set and using that in reports could improve the comparability of studies and enabling a relevant meta-analysis.