Interventions to reduce hospital readmissions in the elderly: in-hospital or home care. A systematic review

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CRD summary
This review found that interventions comprising geriatric management with home care post-discharge from hospital were more likely to reduce readmissions in elderly patients. Reporting errors mean that the results and the authors’ conclusions may not be reliable.

Authors’ objectives
To identify interventions that effectively reduced the risk of hospital readmission for elderly people and to assess the role of home follow-up.

Searching
Ten databases (MEDLINE and EMBASE included) were searched to October 2007 (MEDLINE was searched to October 2009) for relevant studies in English and Spanish; search terms were reported. Reference lists of the included studies were checked for additional studies.

Study selection
Eligible studies were controlled trials of an intervention conducted during hospital admission or follow-up in patients aged at least 75 years. Hospital admission could be for any reason. Trials had to report the outcome of unplanned readmission to hospital. Studies in which more than half of the participants were aged under 75 years or where the average age of the participants was less than 75 years were excluded from the review.

Where reported, mean ages of the patients in the included trials ranged from 75.7 years to 85.5 years. Some interventions comprised a geriatric assessment during the hospital stay and comprehensive discharge planning; in some studies these included care plans following discharge. Other interventions included pharmaceutical care reviews. Follow-up care in some trials was conducted through the patients’ general practitioners and intermediate care services. Other interventions comprised a geriatric assessment with follow-up at home with home visits. Some interventions also used post-discharge care plans. Some were multi-component interventions. Comparators in the trials were usual care, hospital care, standard discharge planning and home care and use of conventional community services.

Two reviewers independently selected studies for inclusion; any discrepancies were resolved by consensus or a third reviewer.

Assessment of study quality
Two reviewers assessed methodological quality using the Scottish Intercollegiate Guideline Network (SIGN) tool for clinical trials. Any discrepancies were resolved by discussion or a third reviewer.

Data extraction
Data were extracted by one reviewer and supervised by a second reviewer using spreadsheets to obtain standardised forms for the studies. Any discrepancies between the reviewers were resolved by discussion and a third reviewer if necessary.

Methods of synthesis
The results were summarised in a narrative synthesis stratified separately according to intervention type (geriatric assessment and discharge planning, and geriatric assessments with home-based follow-up).

Results of the review
Thirty-two clinical trials (16,389 participants) were included in the review: 25 randomised controlled trials and seven non-randomised studies. Trials either used in-hospital geriatric assessment during the hospital stay and comprehensive discharge planning or evaluated geriatric assessments with home-based follow-up. Fourteen trials fulfilled most or all
SIGN quality criteria and 13 trials fulfilled some quality criteria. Five studies fulfilled few or no criteria. Follow-up ranged from one month to 18 months.

**In-hospital geriatric evaluation and discharge management (17 trials, 8,668 participants):** Three studies found significant benefits of the interventions in terms of reduced admissions. In one study there were benefits only for one month post-discharge with no differences observed between the intervention and usual care at two months follow-up. A negative effect of the interventions was found in one study. There no differences were observed in the remaining 13 studies.

**Geriatric assessment with home follow-up (15 trials, 7,701 participants):** Seven trials reported significant benefits of the interventions on readmissions at follow-up. Five studies found some benefits of the intervention at follow-up times of 30 days to six months post-discharge. Another trial found no difference between groups at three months follow-up but benefits of the intervention were observed at 18 months. One study that involved a home-based medication review found more admissions to hospital in the intervention group. The remaining studies found no differences between groups on readmission outcomes.

**Authors’ conclusions**
Interventions that incorporated some component of home care were more likely to reduce hospital readmissions in elderly patients, although most of the interventions evaluated in the review had no effect on readmission in elderly patients.

**CRD commentary**
The review addressed a clear question and criteria for the inclusion of studies were broad and reproducible. Appropriate databases were searched for relevant studies. There were no attempts to included unpublished studies so there was some risk of publication bias. The restriction to studies in English and Spanish risked language bias. Steps were taken to minimise errors and biases at each stage of the review process but there was little information on the components of the quality assessment. The results of the quality assessment were not published in sufficient detail to enable judgements to be made regarding the reliability of the results. The comparators were not described, which made it difficult to judge the extent to which comparators such as usual care and standard discharge planning and home care were different from the interventions under study. The decision to summarise the results in a narrative synthesis appeared justified on the basis of differences between the interventions.

Omissions in reporting of the results and quality assessment mean that the results of the review should be interpreted with some caution and make the reliability of the authors’ conclusions unclear.

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

**Research:** The authors stated a need for new studies of higher methodological quality using comparable approaches and with standardised outcome measures for readmission outcomes.

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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.