

A systematic review of discharge arrangements for older people

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Executive summary

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Executive summary

Background

Discharge of older people from hospital is a key issue in both acute health and community care policy and practice. Implementation of the NHS and Community Care Act included a financial imperative for health authorities and local authorities to devise joint discharge planning arrangements. Professionals in health and social care use agreed protocols to help ensure proper quality standards of discharge processes for vulnerable elderly people. We have performed a systematic review of discharge arrangements for older people.

Objectives

This review was conducted to test the following general hypotheses:

- there is an inadequate number of comparable randomised controlled trials (RCTs) to allow a definitive analysis
- hospital discharge process, outcome and cost-effectiveness can be improved through the use of a variety of interventions
- some interventions are more effective than others
- there are priority areas for future research.

Methods

The aim of the search strategy was to provide as comprehensive a retrieval as possible of published and unpublished clinical trials relating to interventions to improve the discharge of older people from inpatient hospital care.

Literature retrieval focused on obtaining RCTs for review. After ensuring an acceptable level of agreement between the reviewers ($\kappa = 0.66$), titles and abstracts were scanned by the research assistant to exclude obviously irrelevant studies. All subsequent assessments were performed by two reviewers independently and disagreements were resolved by discussion. Reprints of all potentially relevant studies were obtained and subjected to a relevance and quality check before proceeding to data extraction. Data were extracted from all relevant RCTs.

Data sources

The search process included:

- keyword searches of 24 electronic databases
- handsearching of relevant journals
- scanning of reference lists
- citation searching of key papers
- contact with organisations and individuals via the Internet and through personal communication
- keyword searching of the world wide web.

Study selection

Included studies

- RCTs evaluating an intervention intended to modify discharge in patients experiencing discharge from inpatient hospital care.
- Studies that included patients over the age of 65 years experiencing discharge from inpatient hospital care.
- Studies undertaken in an inpatient hospital, or in the community after discharge from inpatient hospital care.

Studies were only eligible for inclusion if they described at least one of mortality, length of stay, readmission rate, health status, patient and/or carer satisfaction, use of health and social care resources, and costs.

Excluded studies

Studies were included if they involved:

- discharge from inpatient facilities not potentially providing high technology care
- discharge from ambulatory care.

Data extraction

Data from relevant RCTs were extracted by two reviewers independently. The following information was recorded about each relevant trial: model of discharge arrangement, study quality, range of outcomes reported, mortality, length of stay and readmission, physical function, mental function, use of services, costs, satisfaction, and quality of life.

Data synthesis

The initial synthesis of the results, built on a complete tabular summary of trial characteristics (including type of participants, study type and

design and outcome measures), comprises a qualitative overview.

Where sufficient quantitative data and comparable studies existed, standard approaches to combining the results of studies were used. Estimates of the pooled effects sizes on all relevant outcome measures for which data are available were obtained from the study-specific estimates using random effects models, with due regard given to estimates of between-study variations.

Results

Overall 6972 articles were identified, of which 320 proceeded to relevance and quality assessment. Seventy-six papers were identified and the data extracted. Final synthesis was performed using 71 articles representing 54 RCTs, ten of which were from the UK. Five trials were excluded. Four types of intervention were identified: discharge planning, comprehensive geriatric assessment, discharge support and educational interventions. The intervention types were not mutually exclusive.

Overall analysis by intervention characteristics

Overall no significant effect was seen on mortality at 3 months (ten trials), 6 months (14 trials) or 12 months after discharge (14 trials). Index length of stay was not significantly affected by the interventions (19 trials).

The risk of readmission to hospital was significantly reduced by intervention (readmission risk ratio (RRR) 0.851; 95% confidence interval (CI), 0.760 to 0.953; $p = 0.005$; 35 trials). This effect was preserved where the intervention was provided by a single professional (RRR 0.825; 95% CI, 0.699 to 0.974; $p = 0.023$; 16 trials), compared to a team (RRR 0.875; 95% CI, 0.744 to 1.028; $p = 0.105$; 19 trials). The effect on readmission risk was most apparent in interventions provided both in hospital and in the patient's home (RRR 0.829; 95% CI, 0.690 to 0.995; $p = 0.045$; 15 trials). A similar trend was seen for interventions provided in the patient's home only (RRR 0.795; 95% CI, 0.613 to 1.032; $p = 0.085$; 10 trials). Little effect was seen for interventions provided only in hospital (RRR 0.931; 95% CI, 0.795 to 1.091; $p = 0.377$; 6 trials) or by telephone (RRR 0.919; 95% CI, 0.446 to 1.893; $p = 0.819$; 3 trials).

Other outcome measures were not collected or reported consistently in the trials and only limited analysis was possible.

Analysis by intervention type

None of the four intervention types were shown to have major effects on mortality or length of hospital stay. Only educational interventions had an effect on readmission risk ratio (RRR 0.667; 95% CI, 0.573 to 0.778; $p < 0.001$; 5 trials); however, the trials were limited in focus and this result may not be generalisable outside selected patient subgroups.

Conclusions

The evidence from these trials does not suggest that discharge arrangements have effects on mortality or length of hospital stay. This review supports the concept that arrangements for discharging older people from hospital can have beneficial effects on subsequent readmission rates. Interventions provided across the hospital–community interface, both in hospital and in the patient's home, showed the largest effect.

Evidence from RCTs is not available to support the general adoption of discharge planning protocols, geriatric assessment processes or discharge support schemes as means of improving discharge outcomes.

Recommendation for research

More research is needed, particularly in the UK. Models that provide intervention across the hospital–community interface and/or education are worthy of consideration. Future studies should ensure that mortality, index length of stay and readmission rates are recorded. Patient health outcomes, patient and carer satisfaction, and costs should be measured. Trials should preferably be conducted to agreed standards, with harmonisation of outcome measures to facilitate pooling of data. Health economic analysis should be planned as integral to future studies, which should be large enough and inclusive enough to detect important effects and ensure generalisability of results. Further research to explore the issue of cross-national comparability of studies between different healthcare systems would be worthwhile.

Publication

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NHS R&D HTA Programme

The NHS R&D Health Technology Assessment (HTA) Programme was set up in 1993 to ensure that high-quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and provide care in the NHS.

Initially, six HTA panels (pharmaceuticals, acute sector, primary and community care, diagnostics and imaging, population screening, methodology) helped to set the research priorities for the HTA Programme. However, during the past few years there have been a number of changes in and around NHS R&D, such as the establishment of the National Institute for Clinical Excellence (NICE) and the creation of three new research programmes: Service Delivery and Organisation (SDO); New and Emerging Applications of Technology (NEAT); and the Methodology Programme.

This has meant that the HTA panels can now focus more explicitly on health technologies ('health technologies' are broadly defined to include all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care) rather than settings of care. Therefore the panel structure has been redefined and replaced by three new panels: Pharmaceuticals; Therapeutic Procedures (including devices and operations); and Diagnostic Technologies and Screening.

The HTA Programme will continue to commission both primary and secondary research. The HTA Commissioning Board, supported by the National Coordinating Centre for Health Technology Assessment (NCCHTA), will consider and advise the Programme Director on the best research projects to pursue in order to address the research priorities identified by the three HTA panels.

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