Optimising care of the hospitalised elderly: a literature review and suggestions for future research

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Authors' objectives
To appraise systematically the evidence of efficacy for current models of geriatric care; to draw conclusions about the current state of the science and highlight issues in need of further research; to identify efficient methods for targeting particular interventions to high-risk patients; and to profile methods by which geriatrically orientated forms of care could be subject to more complete uptake across the entire spectrum of acute hospital practice.

Searching
MEDLINE was searched from 1984 to 1998, using search headings 'geriatric care', 'geriatric assessment', 'geriatric evaluation', and 'geriatric rehabilitation'. The Cochrane Library (issue 3, 1998) and Best Evidence (edition 2, up to 1997) were also searched using these headings (dates not stated). Bibliographies of retrieved article were searched. Only English language trials were included.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (or systematic reviews of RCTs). Non-randomised studies employing a formal research design were also included if they provided useful economic evaluations or insights into organisational aspects of care. Studies had to achieve more than 75% patient follow up and analyse results on an intention to treat basis.

Specific interventions included in the review
Specific geriatric assessment or management strategies: acute geriatric units or services; post-acute geriatric evaluation and management (GEM) units; geriatric consultation services; geriatric day hospitals and condition specific interventions.

Participants included in the review
Patients aged 65 years or older. Populations in the studies included frail elderly inpatients, functionally impaired patients at risk for nursing home placement; patient suffering recent strokes, hospitalised patients with one or more chronic illness, medically stable inpatients and patient living at home with impaired function.

Outcomes assessed in the review
Outcomes of interest were not clearly defined in the review. All outcomes measure in the individual studies were reported. These included case fatality, length of stay or discharge, mortality, activities of daily living (ADL), mental health status, institutionalisation, utilisation of community services, nursing home transfers and placements, functional outcomes, resource use, community living, satisfaction with care, number of discharge medications, patient anxiety, social activities, physician visits, unplanned readmissions.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The author does not state that they assessed validity.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.
Data were extracted from each study in patient numbers, intervention details, main outcome measures and principal results.

**Methods of synthesis**

*How were the studies combined?*

Narratively.

*How were differences between studies investigated?*

Studies were grouped by models of care.

**Results of the review**

Twenty-six studies.

Acute geriatric units (n=4 studies, 3 RCTs).

No significant differences in mortality or rates of institutionalisation. Functional improvement and fewer nursing home transfers were seen in one trial, but these were not maintained beyond three months.

Post-acute geriatric evaluation and management (GEM).

1. Hospital based GEM (n = 3 RCTs and 1 systematic review).

   Inpatient GEM units, which focus on rehabilitation and restoration of independent functioning, improve mortality, functional outcomes and discharge to home. A recent meta analysis (see Other Publications of Related Interest no.1) based on 28 controlled trials and 9871 patients evaluated inpatient GEM units, inpatient consultation services, outpatient geriatric consultation services and home assessment for discharged patients. Outcomes were mortality at one year, living at home at one year and physical function improvement at one year.

2. Community or home-based GEM (n = 3 RCTs).

   Rehabilitation provided by geriatric teams in the community or home to recently discharged patients with specific syndromes facilitate earlier hospital discharge.

   Geriatric consultation services (n = 11 RCTs).

   Inconsistent results from trials for outcomes such as improvement of functional measures, reduced nursing home transfers and lower mortality.

   Geriatric day hospitals (n = 1 RCT).

   Limited randomised evidence based on small patient numbers suggest day hospitals, to which patients recently discharged from acute wards are referred for GEM, have minimal impact.

   Condition-specific interventions (n = 4 RCTs). As an alternative to GEM based on age or fragility criteria, geriatric interventions may be better targeted at specific clinical syndromes associated with significant mortality and burden of illness.

**Cost information**

Cost information was reported for those trials that collected it. However, costs and utilisation of most forms of care were not definitively examined due to analytic complexities.

**Authors' conclusions**
It can be concluded that:

1. Post-acute units providing rehabilitative care for selected patients confer definitive benefits and should be available in all general hospitals.

2. Community based rehabilitation programmes may become an increasingly viable alternative for selected patient groups, but require further study.

3. Geriatric consultation services are of limited value except when community- or home-based multidisciplinary, focused on patient and carer education, initiated in hospital, and adequately resourced; 4) geriatric day hospitals and acute geriatric units are not efficacious as currently organised but could become so with better patient targeting and greater integration with community-based care; and 5) condition specific interventions show promise and need to be more widely explored a range of diagnostic groups within large scale randomised trials.

CRD commentary
The search strategy is adequate but limited to English language trials. Inclusion criteria are clearly described, but the review methodology (how the inclusion criteria were applied, how the data were extracted) is not. No assessment of the validity of the studies was carried out, but only RCTs were included in the review. The review is focused on giving an Australian perspective on the available evidence, but the conclusions appear to follow on from the results of the studies.

Implications of the review for practice and research
The author reports that: condition specific interventions show promise and need to be more widely explored a range of diagnostic groups within large scale randomised trials; targeted needs-based admission criteria may confer better outcomes but require confirmation in large-scale randomised controlled trials; whether day hospitals are more useful in maintaining function in seriously disabled patients recently discharged from hospital needs to be confirmed in randomised trials.

Bibliographic details

PubMedID
10342027

Other publications of related interest

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Subject indexing assigned by NLM

MeSH
Aged; Geriatric Assessment; Geriatrics; Health Services for the Aged; Hospitalization; Humans; Research

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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.