International experiments in integrated care for the elderly: a synthesis of the evidence

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CRD summary
This review assessed the effects of community-based care reforms for the elderly in OECD countries on hospitalisation and institutionalisation. The authors concluded that integrated care systems can reduce institutionalisation and costs but implementation outside demonstration settings presents a challenge. It is difficult to assess the reliability of the conclusions because it is unclear how representative the included projects were.

Authors' objectives
To assess the effect of comprehensive community-based care reforms for the elderly in OECD countries on the rates of hospitalisation and institutionalisation, and to identify features common to effective integrated care systems.

Searching
MEDLINE and PubMed were searched from 1966 to 2000; the keywords were stated. The reference lists in identified studies were also checked.

Study selection
Study designs of evaluations included in the review
Experimental studies with a control group were eligible for inclusion. The included studies were randomised controlled trials (RCTs), quasi-experimental studies with matched pairs of participants, quasi-experimental non-randomised studies, and before-and-after studies.

Specific interventions included in the review
Studies that compared community based care reforms aimed at improving the integration of services with a control intervention were eligible for inclusion. Studies of comprehensive integration of acute and chronic care services that included financial means of achieving integration and less comprehensive integration of medical and social services were also eligible. The studies had to have taken place after the US National Long Term Care Demonstration (Channelling Project; see Other Publications of Related Interest).

The projects reported in the included studies were Darlington (UK), On Lok (USA), PACE (USA), S/HMO (USA), Italy (Rovereto), Italy (Vittorio Veneto) and SIPA (Canada). These projects incorporated one or more of the following elements: case manager promoting integrated delivery of medical and social services; multidisciplinary geriatric assessment teams; delivery of services by one organisation with contracts for specialist service; case management by multidisciplinary team; integrated funding with the programme, or a single organisation responsible for financial risk; single entry point to the system; and community-based primary care system responsible for all health and social services. The projects were funded in a variety of ways: government (UK, Canada and Italy) and Medicare, Medicaid, private premiums and copayments (USA). The included studies tended to be of demonstration projects.

Participants included in the review
Studies of groups of elderly or frail elderly people were eligible for inclusion. The studies had to target groups of elderly people rather than specific diseases. The included studies were of projects for community-dwelling physically frail or disabled elderly considered eligible for long-term or nursing home care, or people who were eligible for intermediate care or skilled nursing.

Outcomes assessed in the review
The studies had to assess the rates of hospitalisation or long-term institutionalised care, utilisation of services, process of care outcomes, or health outcomes.

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

Assessment of study quality
The authors did not explicitly state that they assessed validity, but some aspects of validity were discussed in the text. Such aspects included the potential for selection bias and the degree to which the participants were representative of the general population. The authors did not state how the validity assessment was performed.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. Where possible, data on service utilisation, process of care measures and health outcomes were extracted for each study.

Methods of synthesis
How were the studies combined?
A narrative synthesis of the studies was undertaken. Each study was described in the text and additional descriptive information was tabulated.

How were differences between studies investigated?
Differences between the studies were discussed in the text of the review with reference to common elements in projects reporting success and elements absent in unsuccessful projects. The discussion covered single entry point, breadth of service, degree of responsibility for patients, case-management multidisciplinary geriatric assessment team, financial arrangements, and integration of physicians and patient-selected physician.

Results of the review
Studies of seven projects (approximately 25,000 participants) were included. There were 2 RCTs (1,454 participants), 2 quasi-experimental studies with matched pairs (16,874 participants), 2 quasi-experimental non-randomised studies (approximately 7,000 participants) and 1 before-and-after study (115 participants).

Darlington (UK).
One government-funded project based in the UK (101 patients discharged from long-term hospital to the community) showed that a community care project compared with continuing institutionalised care reduced the rates of institutionalisation (50% at home after 12 months) and increased the number of days at home (137 days versus 12 days). The project also increased the use and appropriateness of community services, and significantly increased morale, patient satisfaction and depression; it showed no effect of the intervention on carer stress. The preferential selection of short-term patients who still had their own community accommodation was a potential source of bias. The project may have limited generalisability due to the requirement for extensive social support or only moderate dependency.

On Lok and PACE (USA).
Two similar Medicare, Medicaid and private premium-funded projects based in the USA sought to maintain participants in the community. One project (300 community-dwelling participants eligible for nursing home care; matched pairs design) showed that a community care project significantly improved some measures of functional independence and reduced the rates of hospitalisation and use of skilled nursing care. The other project (approximately 7,200 participant in a much greater catchment area; the control group was people who refused to enrol in the project) attempted to duplicate this project, but no results for the rates of institutionalisation were (as yet) available. There appears to have been problems in implementing the project due to the larger geographical area covered.

S/HMO (USA).
One Medicare, Medicaid, private premium and copayment-funded project based in a social health maintenance
organisation in the USA (16,547 older participants; matched control from non-institutionalised Medicare clients) showed that a community project did not improve the health outcomes or service use in comparison with a fee for service system. The role of the case manager differed from other successful projects and the authors felt other organisational elements may also have had a negative impact.

Roverto and Vittorio Veneto (Italy).

One RCT (200 community-dwelling frail elderly in Italy) showed that, compared with standard home services, a government-funded comprehensive community-based project decreased the use of community services, institutionalisation and nursing home admission and significantly reduced acute hospital admission at one year. One before-and-after study (115 applicants for integrated home care service in Italy) showed that a government-funded comprehensive community-based project improved some functional outcomes and significantly reduced the number and duration of hospital admissions compared with the 6 months before the project.

SIPA (Canada).

The results were only available for the first 3 months of one RCT (1,254 community-dwelling frail elderly) of a primary care-based system. It showed that a government-funded project had a trend towards increased use of community services, reduced use of hospital emergency services, and an increase in preventative services such as vaccination.

Elements common to successful projects were case management, geriatric assessment, and multidisciplinary team. The one unsuccessful project did not use a multidisciplinary team and geriatric services were either weak or not present. Two successful projects (both non USA-based) used a single entry point. Financial levers were used by three projects (two successful and one with no results as yet).

Cost information
Studies that assessed the costs were eligible for inclusion.

One government-funded project (Darlington, UK) found that a community care project reduced the costs in comparison with continuing institutionalised care. One study (On Lok, USA) estimated that the project reduced the costs per participant by 21%. One Medicare-funded project (HMO, USA) showed no reduced costs resulted from the project. One government-funded Italian project estimated that the project resulted in cost-savings of Lire 1,125 per participant per year. The other Italian project estimated the project reduced the costs by 29% per participant.

Authors' conclusions
Community-based integrated care systems for the frail elderly can reduce the rates of institutionalisation and the costs, but the cost-effectiveness of the project depends upon the specific system of care. The authors also concluded that the successful implementation of systems outside demonstration settings presents a challenge.

CRD commentary
The review question was clear in terms of the study design, intervention, participants and outcomes. The database search was limited (only MEDLINE and PubMed) and this may have resulted in the omission of other relevant studies. In addition, it was unclear whether any language restrictions had been applied, and the lack of any attempt to locate unpublished studies raises the possibility of publication bias. The methods used to select the studies and extract the data were not described; hence, efforts made to reduce errors and bias cannot be judged. The one included UK project was only one of 23 such pilot projects in the UK; the others may have had different results. Validity was not formally assessed, but some potential sources of bias in the included studies were discussed in the text.

Some relevant information on the included studies was tabulated, but the results were not reported consistently. A narrative synthesis was appropriate given the small number of studies. It is difficult to comment on the validity of the common features for a successful project in view of the small number of diverse projects conducted in widely differing health care systems and the identification of only one project with negative findings. The evidence presented indicates
that some projects can be successful in terms of outcomes, but it was difficult to assess how representative the identified projects were of all such projects undertaken.

**Implications of the review for practice and research**

Practice: The authors stated that implementing care systems that have proved successful in pilot projects is complex and challenging.

Research: The authors did not report any implications for further research.

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**Other publications of related interest**


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