Home versus hospital-based cardiac rehabilitation: a systematic review
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CRD summary
This review aimed to compare hospital and home-based cardiac rehabilitation, particularly in remote and rural populations. The authors concluded that home rehabilitation was a safe and effective therapy which could, and possibly should, be offered to all eligible cardiac patients. Methodological limitations suggest that these conclusions should be interpreted with caution.

Authors' objectives
To evaluate hospital compared with home-based cardiac rehabilitation, particularly focusing on issues for remote and rural populations.

Searching
PubMed, EMBASE and Cochrane Central Register of Controlled Trials (CENTRAL) were searched between January 1970 and March 2010 for studies published in English. Search terms were reported. Reference lists of relevant studies were also examined for further studies.

Study selection
Eligible studies of adults (over 19 years old) investigated cardiac rehabilitation in a home or community setting where the participants had been discharged from hospital (such as focusing on post-discharge care). Studies had to report physical activity levels, psychological status or clinical outcomes. Participants had to have experienced acute myocardial infarction, percutaneous transluminal coronary angioplasty, coronary artery bypass graft, coronary heart disease or congestive heart failure.

The included studies compared home-based rehabilitation with hospital cardiac rehabilitation and home based rehabilitation with a control group. Some studies included only male or female participants. The cardiac rehabilitation programmes generally involved an exercise programme and an educational component, but the extent of these varied between studies. A variety of outcome measures were reported in the included studies.

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 state that study quality was assessed.

Data extraction
The number of reviewers that extracted data was not reported.

Methods of synthesis
The studies were synthesised narratively, presented by outcome. A table of individual study details was available in the text.

Results of the review
Twenty-two studies were included in the review (7,714; range 26 to 1,376). Sixteen were randomised controlled trials, one was a controlled trial, three were observational designs, one was a focus group study and one was a retrospective database review. All included a control group.

The authors reported that participation in cardiac rehabilitation was associated with a relative reduction in mortality of approximately 25%; absolute risk reduction ranged from 3.8% to 26.4%. There was little difference in mortality or cardiovascular event rates between hospital and home-based cardiac rehabilitation (two studies).

Cost information
One study found that the average cost of home cardiac rehabilitation was £198 compared with £157 for hospital-based
rehabilitation; when patient travel costs and time was included, hospital-based rehabilitation rose to £181. Another study found that six weeks provision of the Heart Manual was £30 cheaper per patient than comprehensive hospital cardiac rehabilitation, but there was no significant difference in costs between groups over a nine month period.

Authors’ conclusions
Home rehabilitation was a safe and effective therapy which could, and possibly should, be offered to all eligible cardiac patients.

CRD commentary
The research question was supported by inclusion criteria for participants, intervention and outcomes. Only published studies in English were included so publication and language bias could not be ruled out. Study quality was not assessed, so the reliability of the results of the primary studies could not be ascertained. A large proportion of studies were designs known to be at risk of bias and some of the sample sizes were small. It was not reported whether steps were taken to reduce error and bias during the review process (such as processes involving two independent reviewers).

The statistical analyses used were unclear. The results presented largely appeared to find little difference between home- and hospital-based cardiac rehabilitation, which appeared to be interpreted in the authors’ conclusions as equivalence of the two treatments. The methodological limitations of the review, such as lack of quality assessment and possibility of language and publication bias, suggest that the authors’ conclusions should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors stated that there was a need for clearer guidelines and a more consistent approach to cardiac rehabilitation; home based rehabilitation using resources such as the Heart Manual could be an acceptable and appropriate alternative to a hospital setting; home programmes could and should be offered alongside hospital interventions instead of as a secondary option; and telehealth had a role in home rehabilitation in rural communities.

Research: The authors stated that more work was needed on the long-term effectiveness, cost-effectiveness and safety of different modes of home service delivery.

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