

Provision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups

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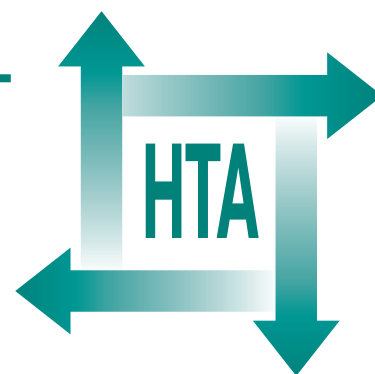
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Executive summary

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Executive summary

Background

The National Service Framework for Coronary Heart Disease (NSF-CHD) identifies patients with acute myocardial infarction and following coronary revascularisation as eligible for outpatient cardiac rehabilitation. However, rehabilitation uptake remains low, particularly in some specific patient groups. While many barriers to patient participation have been described, the effectiveness of interventions to improve uptake and adherence has not been assessed by systematic review. Furthermore, the cost implications of interventions to improve uptake and adherence and of increasing overall provision to meet total population need have not been estimated.

Objectives

- To estimate UK population need and update estimates of cardiac rehabilitation provision.
- To identify patient groups not receiving cardiac rehabilitation.
- To review effectiveness of methods to improve uptake and adherence to cardiac rehabilitation.
- To estimate cost implications of increasing uptake of cardiac rehabilitation.

Methods

- Analysis of hospital discharge statistics to ascertain the population need for outpatient cardiac rehabilitation in the UK.
- Surveys of cardiac rehabilitation programmes to determine UK provision, uptake and audit activity, and to identify local interventions to improve uptake. Estimation of eligibility for cardiac rehabilitation and non-attendance in a recent trial.
- Systematic review of interventions to improve patient uptake, adherence and professional compliance in cardiac rehabilitation.
- Assessment of costs of improving uptake identified from national survey, systematic review and sampled cardiac rehabilitation programmes.

Results

Population need and provision

In England, Wales and Northern Ireland nearly 146,000 patients discharged from hospital with a

primary diagnosis of acute myocardial infarction, unstable angina or following revascularisation were potentially eligible for cardiac rehabilitation. In England in 2000, 45–67% of these patients were referred, with 27–41% attending outpatient cardiac rehabilitation. If all discharge diagnoses of ischaemic heart disease (including angina pectoris and heart failure) were considered, nearly 299,000 patients would be potentially eligible, with rates of referral and attendance of 22–33% and 13–20%, respectively. Rates of referral and attendance were similar in Wales, but somewhat lower in Northern Ireland.

Patient uptake

Referral and attendance of older people and women at cardiac rehabilitation tended to be low. There was a suggestion that patients from ethnic minorities and those with angina or heart failure were less likely to be referred to or join programmes. A wide range of local interventions suggested awareness of the problem of uptake.

The survey of cardiac rehabilitation centres in England identified an uncoordinated approach to audit, with variations in methods and content despite guidelines and the NSF requirements.

In an NHS-funded, multicentre, randomised controlled trial, possibly representing more optimal protocol-led care, medical and nursing staff identified 73–81% of patients with acute myocardial infarction as eligible for cardiac rehabilitation. Excluded patients tended to be older with more severe presentation of cardiac disease. Experiences of patients suggested that uptake may be improved by addressing issues of motivation and relevance of rehabilitation to future well-being, co-morbidities, site and time of programme, transport and care for dependants.

Systematic review

A comprehensive search strategy identified studies relating to uptake, adherence or professional compliance with cardiac rehabilitation. Of 3261 references identified, 957 were acquired as potentially relevant. Reports were frequently not published in easily accessible form. The majority of studies were small, of short duration and not of high quality. Consequently, none of the findings can be considered definitive. Few studies reported cost implications. ►

Eight studies (three randomised) evaluated methods to improve patient uptake of cardiac rehabilitation. These supported the use of letters, pamphlets or home visits to motivate patients. Some encouragement was found for the use of trained lay visitors. Fourteen studies (seven randomised) evaluated methods to improve overall patient attendance or maintenance of lifestyle changes associated with cardiac rehabilitation. Self-management techniques showed some value in promoting adherence to lifestyle changes. Six studies (two randomised) evaluated methods to improve patient uptake and adherence to cardiac rehabilitation by improving professional compliance with guidelines and good practice. Although no effective interventions specifically aimed at improving professional compliance were found, professional support for practice nurses may have value in the coordination of postdischarge care.

Healthcare costs

Average costs in 2001 of cardiac rehabilitation to the health service per patient completing a cardiac rehabilitation programme were about £350 (staff only) and £490 (total). It is estimated that outpatient cardiac rehabilitation represented an NHS cost of £15–24 million in the UK. Variation in cost per patient across centres was partly explained by the duration of rehabilitation and staff-to-patient ratio. If services were modelled on an intermediate multidisciplinary configuration with three to five key staff, approximately 13% more patients could be treated with the same budget. If the most modest services were provided, 40% more patients could be treated. Depending on staffing configuration an approximate 200–790% budget increase would be required to provide cardiac rehabilitation to all potentially eligible patients.

Conclusions

Implications for healthcare

- Provision of outpatient cardiac rehabilitation in the UK is low, well below the NSF-CHD goal of 85% of patients with acute myocardial infarction and following revascularisation being offered outpatient cardiac rehabilitation.
- Information on referral to and uptake of cardiac rehabilitation is incomplete, with widely varying estimates of provision, particularly in under-represented groups. Little is known about the capacity of cardiac rehabilitation centres to increase provision.
- There is an uncoordinated approach to audit data collection.
- Reasons reported by patients for non-attendance are amenable to intervention, but few interventions have been formally evaluated.

- Many interventions aimed at improving patient uptake, adherence and professional compliance with guidelines and good practice have been proposed, but few have been formally evaluated.
- Motivational communications and trained lay volunteers may improve uptake of cardiac rehabilitation.
- Self-management techniques may help to promote lifestyle change associated with cardiac rehabilitation.
- Information on costs of interventions is frequently not reported.
- Experience of low-cost interventions and good practice exists within rehabilitation centres.
- Increased provision of outpatient cardiac rehabilitation will require extra resources.

Recommendations for research and development

- Trials comparing the cost-effectiveness of comprehensive multidisciplinary rehabilitation with simpler outpatient programmes.
- Economic and patient preference studies of the effects of different methods of using increased funding for cardiac rehabilitation, and evaluations of the impact of any increased funding.
- Evaluation of a range of interventions (including self-management techniques, motivational communication and the use of trained lay volunteers) to promote attendance in all patients and under-represented groups.
- Development of standardised audit methods in the context of modern records systems, appropriate training for dedicated staff and dialogue between service contributors. Standardisation of criteria for patient eligibility, regular and comprehensive data collection to estimate the need for and provision of cardiac rehabilitation.
- Identification of further areas for intervention through qualitative studies.
- Extension of low-cost interventions and good practice within rehabilitation centres.
- Regular updated systematic review of literature relating to uptake and adherence to cardiac rehabilitation to include 'grey' literature and non-UK studies.

Publication

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NHS R&D HTA Programme

The research findings from the NHS R&D Health Technology Assessment (HTA) Programme directly influence key decision-making bodies such as the National Institute for Clinical Excellence (NICE) and the National Screening Committee (NSC) who rely on HTA outputs to help raise standards of care. HTA findings also help to improve the quality of the service in the NHS indirectly in that they form a key component of the 'National Knowledge Service' that is being developed to improve the evidence of clinical practice throughout the NHS.

The HTA Programme was set up in 1993. Its role is 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. '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.

The HTA programme commissions research only on topics where it has identified key gaps in the evidence needed by the NHS. Suggestions for topics are actively sought from people working in the NHS, the public, consumer groups and professional bodies such as Royal Colleges and NHS Trusts.

Research suggestions are carefully considered by panels of independent experts (including consumers) whose advice results in a ranked list of recommended research priorities. The HTA Programme then commissions the research team best suited to undertake the work, in the manner most appropriate to find the relevant answers. Some projects may take only months, others need several years to answer the research questions adequately. They may involve synthesising existing evidence or designing a trial to produce new evidence where none currently exists.

Additionally, through its Technology Assessment Report (TAR) call-off contract, the HTA Programme is able to commission bespoke reports, principally for NICE, but also for other policy customers, such as a National Clinical Director. TARs bring together evidence on key aspects of the use of specific technologies and usually have to be completed within a limited time period.

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Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

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