



## Foreword

For most people, having a heart attack is a serious and frightening event with long-term implications of an increasingly symptomatic and restricted life and an early death. Even if the physical effects are minimised by prompt treatment with thrombolysis (clotbusting drugs) or angioplasty, the psychological and social consequences can be profound.

Cardiac rehabilitation is an inexpensive treatment that saves lives, reduces disability, improves health-related quality of life and helps people fight back against heart disease by becoming active self-managers of their health.

The British Heart Foundation – working closely with the British Association for Cardiac Rehabilitation and the British Cardiovascular Society – has supported and funded the development of cardiac rehabilitation for many years. In each of the four countries of the UK, cardiac rehabilitation is ‘supported’ by the NHS and is in great demand from patients. Together with the British Association for Cardiac Rehabilitation we have recently established a National Audit of Cardiac Rehabilitation. This has revealed that around 60 per cent of the patients who need it are denied the chance of taking part and that many programmes are unable to meet clinical guideline standards.

***Due to changes in funding mechanisms, some of the 360 existing cardiac rehabilitation programmes have closed and others are facing the possibility of closure.***

The British Heart Foundation, in alliance with other heart charities and patient organisations, is developing a campaign to ensure that all cardiac patients have timely and equitable access to a high quality cardiac rehabilitation programme delivered in a manner that suits them.



Dr Mike Knapton  
Director of Prevention and Care  
British Heart Foundation

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“If there were a pill that cost very little, reduced cardiac deaths by 27 per cent, improved quality of life, and reduced anxiety and depression, every cardiac patient in Europe would be expected to take it. There is no such pill, but taking part in a cardiac rehabilitation programme can provide all these benefits. In the UK, only a small number of those in need are offered the chance to take part.”

Professor Bob Lewin, European Society of Cardiology, Amsterdam 2005

## The problem in brief

### Cardiac rehabilitation

- saves lives cost-effectively
- is promoted by the health departments of England, Scotland, Wales and Northern Ireland and is recommended by the National Institute for Health and Clinical Excellence (NICE)
- achieves one of the Government's most pressing aims – to help people with chronic health conditions become more expert and active self-managers of their health
- is very high on patients' own wish list for improved cardiac services.

### Despite this

- services are chronically under-funded
- there is a postcode lottery
- services are provided inequitably
- services that do exist may be under threat.

### The result is

*The majority of cardiac patients in the UK are denied any chance of taking part in cardiac rehabilitation: this means that people are dying earlier than they need to, while others remain unnecessarily disabled.*

### In response

An alliance of patient organisations, health professionals and charities is being formed to increase awareness about cardiac rehabilitation.

### The demands of the campaign

We have five aims:

- 1 that every heart patient who is suitable and wishes to take part is offered a rehabilitation programme
- 2 that patients should be offered alternative methods, such as home-based rehabilitation, if they prefer not to take part in a group programme or attend hospital as an outpatient
- 3 that efforts be made to ensure that rehabilitation programmes meet the needs of under-represented groups, particularly ethnic minorities and women
- 4 that each programme should meet the minimum standards set out by the British Association for Cardiac Rehabilitation
- 5 that this be monitored through the National Audit of Cardiac Rehabilitation.

## The basics – what, where, when and by whom?

### What is cardiac rehabilitation and what does it achieve?

Cardiac rehabilitation is the process of helping people with a heart condition make any necessary changes to their life and get back on their feet again – physically, emotionally, socially and vocationally. It helps in a number of ways.

- **Cardiac rehabilitation helps people to change poor health habits** and encourages patients and their families to actively 'fight back' against the chronic illness that threatens their lives.
- **Cardiac rehabilitation helps people to regain their confidence.** A fear of provoking a heart attack can lead to patients unnecessarily restricting their social and vocational activities. The myths and fears that lead to this behaviour are dealt with during rehabilitation.
- **Cardiac rehabilitation helps people to recover psychologically.** In the months after a heart attack as many as 30 per cent of patients may have clinically significant levels of anxiety and 15 to 20 per cent will suffer from a significant degree of depression.
- **Cardiac rehabilitation helps people to deal with social issues** such as understanding and obtaining benefits, re-entry to employment, and with problems relating to health and travel insurance.
- **Cardiac rehabilitation helps people to live longer.**

### How is cardiac rehabilitation delivered?

Rehabilitation was originally organised as a hospital-based, group exercise programme with educational talks about lifestyle. Modern clinical guidelines and standards stress the importance of providing an individualised programme based on a standardised assessment of the patient's needs – medical, psychological and social<sup>1,2</sup> – and offering a variety of methods to achieve those aims. In the UK, a lack of resources and pressure of numbers mean that the majority of centres are unable to offer a 'menu-based' approach.

### Where is cardiac rehabilitation delivered?

There are three main venues: in hospital as an outpatient, in a community setting such as a GP practice or sports centre, and in the patient's own home. Some patients like a group-based programme but an equal number do not and prefer to carry out their rehabilitation at a time and place that suits them and their family.<sup>3,4</sup> There is evidence that offering a home-based self-management programme as an option can substantially improve uptake<sup>5</sup> and that outcomes from these programmes are the same as those from traditional group-based programmes.<sup>6</sup>

### When is cardiac rehabilitation delivered?

In most cases cardiac rehabilitation is delivered after a heart attack or following bypass surgery or angioplasty. This is despite the evidence that patients with angina, heart failure, implanted cardiac devices and some arrhythmias can also benefit greatly.

### Who is it delivered by?

Rehabilitation requires input from a number of professionals – these include dietitians, nurses, physiotherapists, psychologists, social workers and others – not all of whom need to see every patient.

*Over the last 30 years, many expert scientific groups around the world, from the World Health Organization to the British Cardiovascular Society, have reviewed cardiac rehabilitation; every one of these reviews has supported it unequivocally and called for it to become more available.*

## The evidence and costs

### What is the evidence that it saves lives?

The most recent review and meta-analysis, a Cochrane Review, found 48 randomised controlled trials with a 20 per cent reduction in all-cause mortality and a 27 per cent reduction in cardiac mortality at two to five years (random effects model odds ratio 0.73 – 0.54 to 0.98).<sup>7</sup>

### Is it cost-effective?

Yes. Data from a randomised trial of cardiac rehabilitation in the Canada recalculated to reflect the UK situation yielded a cost of £6,900 per quality adjusted life year and £15,700 per year gained at three years (in 1997).<sup>8</sup>

## Can it reduce direct costs and readmissions to hospital?

Modelling done in Scotland from a randomised trial of a home-based rehabilitation programme<sup>9</sup> showed that depending on the grade of staff and the use of home visits was *cost saving* due to the 30 per cent reduction in unplanned readmissions to hospital found in the trial.<sup>10</sup>

## Does it affect other healthcare costs?

Patients who do not make a full psychological recovery cost society more than those who do. For example, a cohort of anxious and depressed patients followed over a year accrued four times the healthcare costs of the patients who were not anxious or depressed. These extra costs were all attributed to additional emergency admissions, tests and procedures, and not to psychological help.<sup>11</sup>

## How much does it cost per patient?

The National Audit of Cardiac Rehabilitation survey for 2005–06 found the most common cost was £413 – less than the average cost (£451) of an annual holiday taken that year.

## How does the cost compare to other cardiac treatments?

A single day in a coronary care unit costs £1,400. An angioplasty (yielding no decrease in mortality) costs £3,000. Bypass surgery costs £8,000.

Costs per quality adjusted life year:

- £22,000 for coronary artery bypass surgery
- £47,000 for percutaneous coronary intervention (angioplasty)<sup>12</sup>
- £15,700 approximately for cardiac rehabilitation (averaged up at 5 per cent from 1997 costs).<sup>8</sup>

## Who should be getting cardiac rehabilitation?

### In England

The National Service Framework for Coronary Heart Disease 2000<sup>2</sup> stated that by 2002, 85 per cent of post-myocardial infarction and revascularisation (bypass and angioplasty) patients should be offered cardiac rehabilitation. Then other patients who should benefit, such as those with angina, heart failure and those with implanted defibrillators, should be offered rehabilitation. Trusts are now paid a fixed tariff for every episode of care but rehabilitation does not receive a separate tariff. In a few parts of the country local healthcare commissioners have ensured that a proportion of the 'cardiac' tariffs are used for rehabilitation but, generally speaking, this has not been the case. At the same time it is not included as a target in the quality and outcomes framework – the mechanism that encourages GPs to ensure that patients get set standards of care. This means that many programmes have no sustainable funding stream, and this places them in jeopardy.

### In Scotland

The Scottish CHD and Stroke Strategy 2002<sup>13</sup> established a series of managed clinical networks across the country which were expected to develop local plans for cardiac rehabilitation. These networks were to have a particular focus on the needs of people in excluded groups, such as women and people in deprivation. The update to the Strategy in 2004<sup>14</sup> noted that these networks were expected to ensure inclusive cardiac rehabilitation services were available in their area.

However a report commissioned by BHF Scotland in 2006 noted that some cardiac rehab programmes were being threatened as a result of funding gaps.

*A survey by the Healthcare Commission in 2004 found that 60 per cent of all patients, 87 per cent of Afro-Caribbean and 79 per cent of Pakistani respondents said they had not been offered rehabilitation and some said they had been offered it only after they had requested it.<sup>16</sup>*

## In Northern Ireland

The Clinical Resource Efficiency Support Team (CREST) guidelines for cardiac rehabilitation<sup>15</sup> published in May 2006 said that all trusts should ensure that cardiac patients are offered the opportunity to participate in a rehabilitation programme. Groups to be included were myocardial infarction, angioplasty and bypass patients, and selected patients with heart failure and stable angina. Funding for cardiac rehabilitation in Northern Ireland has historically been provided by the four local health boards and, for the most part, delivered out of secondary care. Traditionally there has been no coordinated approach to commissioning cardiac rehabilitation services throughout the province and, as a result, this has led to variable provision. Much of the current funding is not from mainstream recurrent funds. The creation of a regional cardiac network in 2006 has focused on the delivery of cardiac services and has prioritised cardiac rehabilitation as one development area.

## In Wales

The National Service Framework for Coronary Heart Disease for Wales has been revised and is awaiting publication. The consultation document included a specific standard for cardiac rehabilitation and the recommendation to include referral to a cardiac rehabilitation programme for myocardial infarction and revascularisation patients and after an acute coronary syndrome. A recent document – *Design for Life* – stresses that services should be designed for patients and by patients. Despite this, cardiac rehabilitation services continue to be threatened because funding is precarious: many programmes currently face uncertainty over their continuation. Many services have been initiated on the back of National Lottery Funding, and recurrent funding for cardiac rehabilitation services is determined on a local basis by each of the 22 Local Health Boards across Wales. Because there is no central strategy for the funding of these services each local cardiac rehabilitation service has to compete for priority amongst commissioning needs within that locality.

## Frequently asked questions

### Why is cardiac rehabilitation so under-funded?

It is not clear, but this neglect is working against the thrust of current Government policy which is to empower patients to become active managers of their own health. Some reasons for this disparity may be that:

- it is not taught about in medical schools and as only a handful of doctors in the UK take an active role in rehabilitation programmes it is a case of 'out of sight and out of mind'
- it is low tech and such treatments are not 'sexy' or dramatic
- it does not generate revenue for the private sector, pharmaceutical companies or private medicine
- care for cardiac patients has been organised around acute events such as heart attack but is actually a chronic illness punctuated by acute events: very little emphasis has been placed on managing disability or tackling the underlying disease factors.

### Who speaks for cardiac rehabilitation?

The British Association for Cardiac Rehabilitation is the 'trade body' for those who work in cardiac rehabilitation. It relies on personal subscriptions from the relatively few healthcare workers engaged in cardiac rehabilitation. It has no industry sponsors and too little money to employ a representative. Over the last 25 years, only the British Heart Foundation, and Chest, Heart and Stroke Scotland, have been consistent champions and funders of cardiac rehabilitation.

### How did it manage to get established in the first place?

The establishment of a programme depended on a local champion, usually a nurse or physiotherapist responding to the very obvious needs of their patients. As a result, where there is no core funding, services have grown in an opportunistic and haphazard way with no attempt to match need and provision. Many programmes still depend on time 'borrowed' from other health professionals, charitable donations and local fundraising events.

### What is the difference between cardiac rehabilitation and secondary prevention?

Cardiac rehabilitation promotes recovery, reduces disability and prevents further illness "... whereas secondary prevention prevents further illness"

In the most recent Cochrane review the mortality benefits were still evident in trials in which aspirin, statins and other medications were provided to both treatment and control arms, showing that the benefits of cardiac rehabilitation are *in addition* to those obtained from routine secondary prevention.<sup>6</sup>

## Is it true that only 'exercise-based' rehabilitation is worthwhile?

There is a misunderstanding arising from the Cochrane Review in which an attempt was made to separate exercise-only programmes from fully multi-disciplinary rehabilitation. Mortality benefits were not significantly different between programmes that were predominantly exercise-based or those claiming to be more 'comprehensive'. Some people have taken this to mean that exercise is all that is required in a rehabilitation programme. However, a Cochrane Review of psychological interventions (without exercise) for cardiac patients also showed a reduction in non-fatal infarction (odds ratio 0.78 – 0.67 to 0.90) and, most importantly, a significant improvement in anxiety and depression.<sup>17</sup>

No-one knows what it is about cardiac rehabilitation that prolongs life and secondary prevention is only one of its aspects. Even if it could be shown that exercise is responsible for the reduction in mortality it would not mean that all that is required is exercise or a secondary prevention programme. This is because the aims of rehabilitation are not limited to reducing mortality but, like many other interventions in medicine, they also aim to reduce symptoms, disability and psychological distress and improve a patient's quality of life.

## Are there any clinical guidelines or standards that programmes should meet?

The British Association for Cardiac Rehabilitation has set minimum standards for cardiac rehabilitation and has adopted as a guideline the Scottish Intercollegiate Guidelines Networks' guideline.<sup>1</sup> Chapter 7 of the Department of Health's National Service Framework for Coronary Heart Disease in England also sets out a picture of best practice.<sup>2</sup>

## How can we assess the quality of our local provision?

We can assess quality by using the National Audit of Cardiac Rehabilitation's online benchmarking database of patient outcomes.<sup>18</sup> The National Audit is supported financially by the British Heart Foundation working with the British Association for Cardiac Rehabilitation and the Central Cardiac Audit Dataset Programme.

Taking part in the National Audit of Cardiac Rehabilitation is also a basic minimum standard set by the British Association for Cardiac Rehabilitation. Of the 360 UK programmes, 240 have indicated that they want to take part in the audit and 130 have found the resources to join. Those programmes that don't have the resources to take part electronically are asked to complete an annual audit of the number of patients they have worked with. In 2005–06, 32 programmes (10 per cent) reported that even this was beyond their capability as they have no means of keeping a register. Clearly, when resources are as low as this, the degree to which the programme can adequately meet any of their patients' needs must be in doubt.

## Should rehabilitation be provided in primary or in secondary care?

The ideal place would be to have a rehabilitation team both in the hospital and in the community working together in an integrated manner with primary care staff. This is because rehabilitation should start before discharge and some patients, for example those with advanced heart failure or an arrhythmic condition, may need supervision from specialist cardiac physiotherapists and nurses and safer by beginning to exercise in hospital.

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