Offering patients with coronary heart disease (CHD) home-based cardiac rehabilitation (CR) was suggested as long ago as 1983.1 Despite this, in most countries, the uptake of CR remains suboptimal and home-based CR has largely failed to take off. In the past this may have been due to a lack of evidence; however, over the last few years systematic reviews have shown that home-based rehabilitation and exercise programmes are as effective as hospital-based CR and may have better long-term compliance.2,3 The most recent Cochrane review of home vs. hospital CR found 12 randomized controlled trials (RCTs) involving nearly 2,000 patients and concluded that: “Home- and centre-based cardiac rehabilitation appears to be equally effective in improving the clinical and health-related quality of life outcomes in acute myocardial infarction (MI) and revascularisation patients.”4 This finding has been reinforced by the latest RCT of home vs. hospital-based CR from Denmark.12

In the United Kingdom (UK), as in most countries, a substantial number of patients decline the offer of CR; offering patients a choice of venue may improve uptake. Evidence that it can do so is provided by an audit study carried out by one of the authors (HD). Of 106 patients offered the choice of a home based programme, the Heart Manual, or a hospital-based programme, 44% chose the Heart Manual and 33% chose the hospital-based programme, the remainder were too ill for either and had individual support.5 Offering a choice meant that, in that part of the UK, the national target, that 85% of MI patients discharged from hospital should be offered CR21, was met: something no other areas of the UK achieved.

The same group of researchers conducted a preference RCT, the Cornwall Heart Attack Rehabilitation Management Study (CHARMS), comparing the outcomes from the hospital and Heart Manual CR programmes; the benefits recorded by each programme were the same but, as in previous studies, significantly more patients completed the Heart Manual programme than the hospital-based programme.6

Why patients prefer a home or a hospital-based programme has been examined in qualitative studies.7,8 The answers vary, although there are some similarities and differences in the reasons why patients chose a particular CR programme; these include: temperament and personality, wanting the programme to fit in with their life and not the other way round, wanting to include their family, not liking group activities, wanting to move at their own pace and overcoming barriers of time and distance. On the other hand, patients choosing hospital-based CR were quite clear that they need the discipline of a group to exercise, that they want to meet ‘people like me’ or that they would prefer to exercise in a ‘safe’, supervised medical environment.

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The Heart Manual

The Heart Manual was developed in Scotland in the late 1980s by a multi-disciplinary team of CR specialists and patients in a three-year project led by one of the authors (BL).9

The key component is the facilitator, a rehabilitation professional who has had a brief training in the Heart Manual’s behaviour change techniques. He or she works with the patient to determine their health needs and to arrive at a shared set of goals. These goals are recorded in a workbook and scheduled for regular practice. They almost always include a walking programme, a relaxation and stress management component and attention to reducing the patients’ risk of CHD. The facilitator contacts the patient at set intervals, either face-to-face or by telephone, to check on progress and help the patient re-set the goals and add new ones. The behaviour change methods are cognitive-behavioural, such as motivational interviewing, goal setting and increasing confidence in small steps. An important element is examining the patient’s and -if possible- the immediate carer’s or family’s...
beliefs about heart disease: what they think about its causes, its most likely course and the most appropriate actions to avoid further problems. Some beliefs, known as cardiac misconceptions, have been shown to affect the degree to which the patient will change their behaviour, unless they are discussed and corrected. The educational component is delivered through discussion with the facilitator, backed up by written and DVD-based materials for all of the family to share. All of the aspects of a full multi-disciplinary programme are addressed. The physical activity programme uses a daily walking programme but also builds on and extends the patient’s own favoured physical activities or hobbies.

The simple nature of the walking and activity component has often led to scepticism about the Heart Manual’s ability to improve physical fitness sufficiently. The first large scale multi-centred RCT to examine this, by comparing the Heart Manual with hospital physiotherapy-led programmes, was conducted by Professor Andrew Coates and exercise physiologist Dr. Jenny Bell. They found no difference between those that attended 6 weeks of twice weekly exercise in the hospital programmes and the Heart Manual patients: both groups demonstrated an increase in exercise tolerance by an average of 2 METs.

These findings were replicated in another large multi-centred trial funded by the UK Government, the BRUM study. This included 525 MI and coronary revascularisation patients, including 17% from the South Asian community. The results showed: “… significant improvements in total cholesterol, smoking prevalence, in the Hospital Anxiety and Depression Scale anxiety score, in self-reported physical activity and diet in both arms between baseline and the 6-month follow-up.”

The Heart Manual was superior in one aspect, as reported by the CHARMS investigators there was a much lower ‘dropout’ rate: A significantly larger number (241)(96%) of the home-based participants received 5 or more contacts (by visit or telephone) with a CR nurse, whereas only 147 (56%) of the centre-based participants attended this number of CR classes (p<0.001). There have been many published studies of the Heart Manual, both quantitative and qualitative and many more local evaluations, making it by far the most researched home-based rehabilitation programme. Its evidence base has been extensively reviewed and is recommended for routine clinical use by numerous expert guideline committees, including the UK’s National Institute for Health and Clinical Excellence (NICE) and the 2010 NHS Commissioning Guide for Cardiac Rehabilitation.

The Heart Manual is based on a cognitive-behavioural understanding of disability. Does it bring extra benefits when used in addition to ‘conventional’ CR? An interesting study, carried out in an area of high social deprivation in the UK, randomised patients to routine care which included an offer of a hospital-based CR programme, or the same offer plus the Heart Manual. Regardless of whether the patients attended the hospital programme or not, those who had used the Heart Manual, reported lower anxiety and depression scores and the authors reported that people over 80 benefitted equally to younger patients.

How does the cost of the Heart Manual compare to hospital-based programmes? Both the BRUM and CHARMS trials included an economic evaluation. Overall costs were similar with the mean cost for the home-based CR programme reported at £198 versus £182 (including patient costs) to the hospital-based patients in BRUM and £170 (home-based CR) and £200 (hospital-based CR) in CHARMS. Costs in CHARMS were measured in British pounds for 2002–3 (currency conversion rate of £1.00=Canadian $2.35, 2003). Both interventions were deemed cost-effective.

The Heart Manual is the most widely researched and implemented home based rehabilitation programme in the UK and has been available since 1998. It is managed by NHS Lothian in Edinburgh. Currently around 15,000 patients a year in the UK use it. That’s equivalent to 20% of the number of people who take part in CR in England, Northern Ireland and Wales each year, but still only 9% of the number of people surviving an MI having CABG or PCI in a year in those countries.

The Heart Manual is also in use in several other countries including the Republic of Ireland, New Zealand, Italy, the Falkland Islands, Australia and Canada. In Canada, the Heart Manual has been
‘Canadianised’ by Impact Health Improvement Action Society of BC (Impact BC). Around 100 Canadian facilitators have been trained since 2005, predominantly in Alberta and British Columbia and over 1,200 manuals disseminated. In the Northern Health Authority of BC, 50 facilitators are currently active and aiming to meet a local target of rehabilitating 80% of MI patients using the Heart Manual.21

See www.impactbc.ca.

Conclusions

There is no longer any reason to believe that hospital-based programmes have an advantage over evidence-based home programmes for the majority of the patients we see in post-MI or post-revascularisation rehabilitation. There is evidence to suggest that we should be routinely offering all patients a choice between these two methods. A reasonable case could be made that until we do offer such a choice, we will fail to engage a significant number of people who might otherwise have had their lives extended.

As the authors of the 2010 Cochrane Review said: “This finding, together with an absence of evidence of difference in healthcare costs between the two approaches, would support the extension of home-based cardiac rehabilitation programmes such as the Heart Manual to give patients a choice in line with their preferences, which may have an impact on uptake of cardiac rehabilitation in the individual case.”24

It may also lead to more satisfied and more compliant patients. Why evidence-based rehabilitation programmes such as the Heart Manual, despite twenty years of evidence and availability, are not being more widely used would form an interesting research question.

References

20. Personal communication, Catherine North, Impact Health Improvement Action Society of BC, cnorth@patientvoices.ca