

# The Heart Manual

## Development

**“...the UK Heart Manual (NHS Lothian) is perhaps the most extensively studied self-management book for patients recovering from acute MI or coronary revascularization.”**

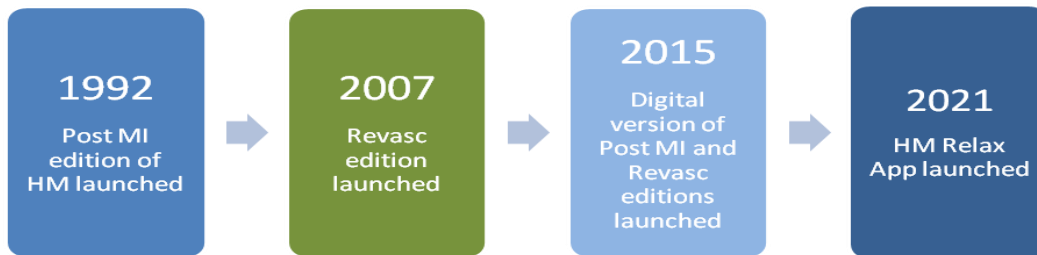
*Scientific Statement from the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Heart Association, and the American College of Cardiology 2019*



# The Heart Manual

In April of 2022 the Heart Manual reached a milestone 30 years in use supporting patients through their cardiac rehabilitation journey.

The benefits and effectiveness of the programme have lasted the test of time and the resources available to support the patients have diversified to meet modern day requirements.



Today the Heart Manual and supporting resources are available in various formats. This includes online links to audio content as well as HM Relax App. Both Post MI and Revascularisation editions of the Heart Manual are available in either paper or digital format for patients to select which mode suits their own circumstances best.

A collage of images illustrating the availability of The Heart Manual in different formats. At the top, three categories are labeled: 'POST MI EDITION', 'SUPPORTING RESOURCES', and 'REVASCULARISATION EDITION'. Under 'PAPER', there are images of the book covers for both editions. Under 'ONLINE', there is a computer monitor displaying the website, a URL <https://www.heartmanual.scot.nhs.uk/index.php/download/resources>, and a tablet showing the 'The Home Exercise Plan Video'. Under 'APP', there are images of a smartphone and a tablet displaying the 'RELAXATION AUDIO' app interface. A CD-ROM labeled 'Relaxation CD' and a DVD-ROM labeled 'The Heart Manual' are also shown under 'SUPPORTING RESOURCES'.

# Development

The initial development of the Heart Manual (HM) took over a year. Patients were presented with sections of the HM and asked to work through them at home. As each week's assignment was completed, the users were questioned to discover which parts had been complied with and found useful. The sections were repeatedly rewritten in the light of this feedback. The end result is the structure of the Heart Manual you still see today. Ongoing development of the HM resources has continued since inception with the support and input of the Patient Involvement Heart Manual (PIHM) Group

## The HM design:

- Support of specially trained facilitator to guide the patient and (their) family
- A six-week home based CR programme consisting of written materials, a sections to record progress, a Q&A audio and relaxation programme
- Contains all the elements of a comprehensive rehabilitation programme: Health behavior change and education, lifestyle risk management, exercise, medical risk management and psychological health
- Can be used in both primary and secondary settings or shared between the two
- It is suitable for the majority of post MI or revascularisation patients

## Heart Manual: The Evidence

The first evaluation of the Heart Manual was a randomised controlled trial (RCT) in a District General Hospital, within a deprived post-industrial area with high rates of coronary disease and unemployment.

(Lewin et al. *Lancet*, 1992)

## The Post Myocardial Infarction Edition

176 patients were randomised, stratifying for age, social class and anxiety, into groups that received the HM and a control group. The control group received a package of leaflets from sources such as the BHF, the Flora Heart Campaign and the Scottish Health Promotion Group about myocardial infarction (MI) and lifestyle change in coronary artery disease CAD. Both groups received the same protocol of

phone calls at 1, 3 and 6 weeks post-discharge from the facilitator who asked them the same questions as the HM group, but leaving out any mention of the HM. The results showed a significant reduction in anxiety and caseness on the general health questionnaire, a reduction in visits to the GP in the first 6 months after discharge and a reduction in readmission to hospital. The incidence of clinical anxiety was reduced by 50% in the Heart Manual group.

Over the years similar results have been obtained in a number of trials throughout the UK.

## The Revascularisation Edition

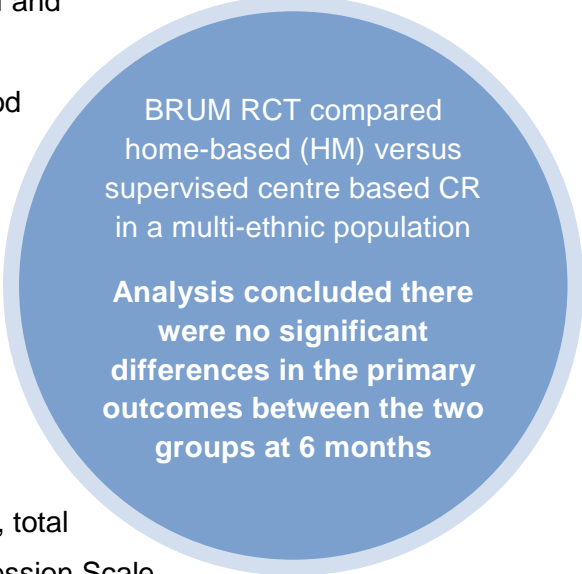
Launched in 2007 the Revascularisation edition of the HM supports the recovery of patients following bypass surgery and/or planned percutaneous coronary intervention. The content is based on the original Post MI Manual, adapted for this patient group.

## Heart Manual versus centre based cardiac rehabilitation trial

Both the Post MI and Revascularisation editions were evaluated in a large individually randomised trial conducted by Jolly et al 2007, at Birmingham University (BRUM Study). This trial compared home-based rehabilitation versus supervised centre-based rehabilitation in a multi-ethnic population.

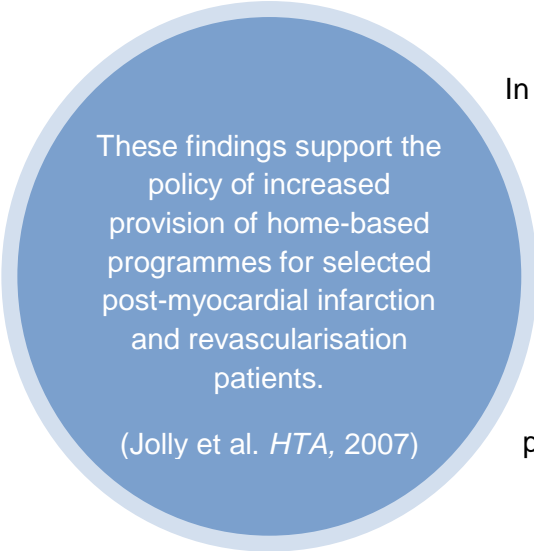
The study included 525 low/moderate risk post MI and revascularisation patients who were referred to a cardiac rehabilitation programme in a 2-year period from February 2002.

Conducted in 4 inner-city hospitals serving a multi-ethnic population, the intervention consisted of 12 weeks of home-based rehabilitation (HM and nurse follow up) [N=263] or usual hospital/community-based rehabilitation. Patients were followed up for 6 months, outcome measures used included systolic BP, diastolic BP, total and HDL- cholesterol, Hospital Anxiety and Depression Scale (HADS), distance walked on shuttle test and smoking cessation. The main results from primary analysis revealed no significant differences in primary outcomes between home and centre-based groups at 6 months.



BRUM RCT compared home-based (HM) versus supervised centre based CR in a multi-ethnic population

**Analysis concluded there were no significant differences in the primary outcomes between the two groups at 6 months**



These findings support the policy of increased provision of home-based programmes for selected post-myocardial infarction and revascularisation patients.

(Jolly et al. *HTA*, 2007)

In a secondary analysis, statistically significant improvements in both home and centre-based groups were seen for smoking cessation, HADS anxiety and total cholesterol levels at 6 months compared to baseline. This study showed that home-based and supervised centre-based programmes equally improved outcomes at 6 months in a low risk cardiac population.

## Systematic Reviews of the Heart Manual Literature

The Heart Manual evidence has been surveyed in various systematic reviews over the years:

- British Medical Journal (Dalal et al. 2010), found that the home-based programmes using the Heart Manual were as equally effective as hospital-based rehabilitation
- European Journal of Cardiovascular Nursing (Clark et al. 2011), concluded the Heart Manual is as effective as hospital based cardiovascular rehabilitation on a number of psychological, behavioural, biological, service and cost outcomes.
- International Electronic Journal of Rural and Remote Health Research, Education, Practice and policy (Blair et al. 2011) concluded home programs should be offered alongside hospital intervention, instead of as a secondary option.
- European Journal of Cardiovascular Nursing (Clark et al. 2015), the Heart Manual included in a review of home-based and recently developed telehealth programmes, was identified as an effective alternative to hospital based programmes.

## National Guidelines

National Institute for Clinical Excellence (NICE) has identified the Heart Manual as a comprehensive, validated home-based cardiac rehabilitation programme in its clinical guidelines for secondary prevention since 2007

“A home-based programme validated for people who have had an MI (such as [NHS Lothian's Heart Manual](#)) that incorporates education, exercise and stress management components with follow ups by a trained facilitator may be used to provide comprehensive cardiac rehabilitation”. (2007).

*(NICE Clinical Guideline 185: Acute Coronary Syndromes)*

## The Digital Heart Manual (D-HM)

A digital version of both post MI and revascularisation editions was released in 2015 following funding and support from the University of Edinburgh, Edinburgh and Lothian's Health Foundation (EHLF), the Scottish Government, Edinburgh College, and Scottish Health on the Web (SHOW). This version stays true to the paper version, thus maintaining effectiveness of the HM programme in an easy to use and engaging online format. Development included input from a multi-disciplinary team, web developers/designers and e-health experts with the close involvement of patients at every step of the process.

Facilitators should take some time to familiarise themselves with the navigation of the digital HM (D-HM) content

The aim of introducing a digital HM version (D-HM) was to make CR more accessible and provide options to patients in their choice of mode of CR delivery, whilst maintaining the evidence based format of the HM:

- Improve access of cardiac rehabilitation services to **younger people** diagnosed with myocardial infarction or undergoing revascularisation;
- Provide greater support for **people returning to work**; providing opportunities to integrate the HM into working life earlier after a heart attack or revascularisation;
- Engage with greater number of **people wishing to use digital technology** in day

During the design and trial stage it became apparent that it was not just the younger generation of cardiac patients who would welcome a digital resource. Some older adults also seemed to prefer a digital option, whilst a proportion of younger adults expressed preference for a book given as a welcome break for those working with computers most of

the day. It is important therefore not to make assumptions of personal preference for either format based on age.

For information on further Heart Manual publications please visit the Heart Manual website at:

<https://services.nhsllothian.scot/TheHeartManual/Evidence/Pages/default.aspx>

Presentations can be found at:

<https://services.nhsllothian.scot/TheHeartManual/Evidence/Pages/Conference-Presentations.aspx>

For any other information please contact us at:

[heartmanual@nhsllothian.scot.nhs.uk](mailto:heartmanual@nhsllothian.scot.nhs.uk)

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