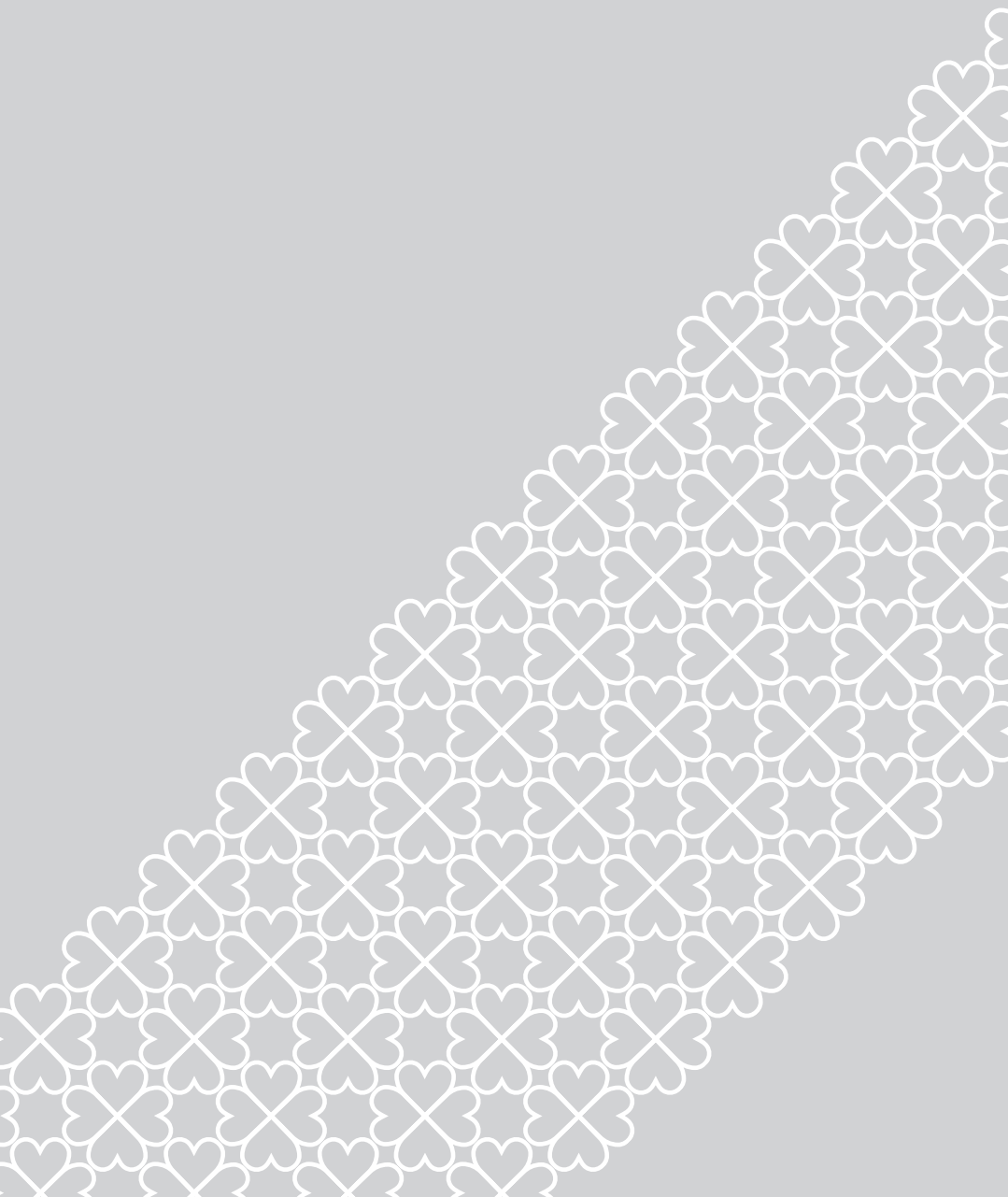




British Association for
Cardiac Rehabilitation

Standards and
Core Components for
Cardiac Rehabilitation
(2007)



In affiliation with the
British Cardiovascular Society



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1. Introduction

The BACR have defined minimum standards and core components for cardiac rehabilitation (CR) services in order to ensure that all service providers, health professionals and service users understand the requirements for cardiac rehabilitation. Achieving such standards will be a big challenge for many services and the delivery of CR will vary in response to different environments, differing population characteristics and local resources. The practice and science underpinning CR, albeit evidence based¹⁻⁵, are constantly evolving and these standards aim to maintain a flexible approach and at the same time avoid being overly prescriptive. The BACR has an obligation, to Association members and the public, to make sure that currently agreed best practice CR is available to all eligible patients, by ensuring that they are not offered a sub-standard service. The integrity of CR needs to be assured by offering clearly defined core components that are sufficiently resourced. Setting a minimum standard will help clarify the provision for providers and enable a more equitable service. It will protect services by establishing the baseline for what can be described as a rehabilitation programme and enable those who are seeking improved funding to demonstrate that their provision falls below the minimum acceptable level.

Defining a usable minimum standard

To be of any practical use standards must be objective, not open to 'interpretation', and transparent, so that it is obvious to all when a programme has met them or not met them. An agreed set of criteria is required and the supporting data should be easy to collect accurately. The BACR recommend 6 minimum standards, which a programme will be benchmarked against annually. These standards are based on routinely available data that already exists, at least in part, within most CR services. The National Audit Cardiac Rehabilitation (NACR) process will be used to collect the data.

Demonstrating a minimum standard

Most programmes have developed over time slowly building up their capacity and the BACR are aware of the need to support and help programmes doing the best that they can within the limited resource they have been given. Where resources fall below the minimum standard, or cover only one part of the patient journey, the BACR will report that programme, on the national register and to outside bodies, as a 'programme in development' requiring further resource before it is a 'full rehabilitation programme'. Clearly where an individual programme is providing only part of the pathway but working with other programmes so that individuals have access to rehabilitation across the whole pathway it will share 'full programme' status. This does not imply that services listed as 'full rehabilitation programmes' based on meeting the minimum standards, have no need of expansion or improvement, but it does mean that programmes falling below this level are in urgent need of better resourcing.

Evolving Standards

These standards replace the previously published standards. As the knowledge of what is effective is gathered through the process of benchmarking, using the NACR and through research, these recommendations will change. We anticipate a further review of these standards in 2010.

2. BACR standards and core components:

The minimum standards relate to the infrastructure to support CR and the contents of a programme are defined by the recommended core components. Further references, policy documents and guidance are available in appendixes 1 to 7. Full CR programme status is dependent on meeting the minimum standards of the provision and delivery of the core components.

2.1. Standards for cardiac rehabilitation

These are to be used as minimum standards for the successful delivery of CR. To qualify as a full CR programme the providers must ensure that all the standards are achieved and that the programme adheres to the core requirements.

1. A co-ordinator who has overall responsibility for the CR service
2. A CR core team of professionally qualified staff with appropriate skills and competences to deliver the service (appendix 1)
3. A standardised assessment of individual patient needs (appendix 2)
4. Referral and access for targeted patient population (appendix 3)
5. Registration and submission of data to the National Audit for Cardiac Rehabilitation (NACR) (appendix 4)
6. A CR budget appropriate to meet the full service costs (appendix 5)

2.2. Core components for cardiac rehabilitation

Each of the core components of CR provision should be based on a comprehensive assessment leading to appropriate referral in collaboration with the individual patient. The patient, carers and spouses should be involved in goal setting and the appreciation of difference and diversity should be acknowledged in the CR provision. The content of all core components should be developed collaboratively by the core CR team and be delivered competently by appropriately skilled professionals. Delivery of effective CR should allow for group sessions and individual consultations at an agreeable time and place.

The core components are:

1. Lifestyle:
 - I) Physical activity and exercise
 - II) Diet and weight management
 - III) Smoking cessation
2. Education
3. Risk factor management
4. Psychosocial
5. Cardio protective drug therapy and implantable devices
6. Long-term management strategy

2.2.1. Lifestyle

Exercise and physical activity coupled with a healthy diet and avoidance of obesity and smoking represent a lifestyle that is strongly associated with good cardiovascular health.

I) **Physical activity and exercise:** CR should include:

- Risk stratification and baseline assessment of physical activity status and exercise/ functional capacity.⁶ This will determine the appropriate:
 - Prescription
 - Staffing levels and skills⁷; including indication for level of resuscitation training (Appendix 1, 6, 7)
 - Choice of venue (home / community / hospital)
- Use of best practice standards and guidelines for exercise and physical activity prescription.^{1,3,6,7}

II) **Diet and weight management:** CR should include:

- Assessment of body mass index (BMI) and waist circumference
- Assessment of dietary habits to determine appropriate intervention
- Use of best practice standards and guidelines for dietary prescription and weight management (appendix 6 DH guidelines)^{8,9}

III) **Smoking cessation:**

Stopping smoking is essential if individuals are to gain the most from their rehabilitation. Help towards achieving this aim is now available^{1,9} and every effort should be made to achieve this aim. CR should include:

- Assessment of willingness to stop smoking and nicotine dependence
- Counselling to stop smoking and access to smoking cessation services
- Pharmacological support

2.2.2. Education:

The educational component should be delivered using high quality teaching methods with the best available resources to enable individuals to learn about their condition and management. CR education sessions should include:

- Attention to the common unhelpful beliefs and misconceptions about cardiac illness that lead to increased disability
- Pathophysiology and symptoms
- Physical activity, smoking and diet
- Other risk factors: blood pressure, lipids and glucose
- Psychological issues
- Occupational factors
- Sexual dysfunction
- Pharmaceutical, surgical interventions and devices
- Cardiopulmonary resuscitation

2.2.3. Risk factor management

CR assesses and monitors the control of risk factors, namely blood pressure, lipid and glucose levels, and helps the individual to reach the targets defined by the guideline policies (appendix 6). Maintaining guideline levels of blood pressure and glucose is also important for safe exercise (appendix 6)¹⁰. CR staff, where appropriate, will be involved with either direct initiation or up-titration of medication or liaison with appropriate health profession.

The key areas of focus are:

- Blood pressure lowering therapy
- Lipid lowering therapy
- Glucose lowering therapy

2.2.4. Psychological status and quality of life

Anxiety and depression, if not treated or managed, lead to a poor CR outcome. CR, delivered by the core team, can improve psychological wellbeing and it is important to screen all patients (NACR) for clinical levels of anxiety, depression and problems with Health Related Quality of Life. Some will require specific professionally delivered psychological interventions in order to benefit optimally from CR.^{11,12}

CR should include:

- Valid psychological assessment, which should include anxiety and depression using the Hospital Anxiety and Depression Scale
- Agreed referral pathway to appropriately trained professionals for individuals with clinical levels of anxiety or depression and for those demonstrating signs of psychological illness
- Assessment of quality of life using the Dartmouth Coop Scales
- Self-management strategies. (Appendix 6) including:
 - Stress awareness and stress management approaches
 - Discussion of social needs (benefits etc.)
 - Discussion of vocational aims

2.2.5. Cardioprotective drug therapy and implantable devices

Cardioprotective drug therapy

The use of cardioprotective medication is important in the management of cardiac conditions and especially so as part of the preparation for physical activity and exercise programmes.^{7, 9, 13} The following drugs are important and practitioners need to keep up to date with new drug developments:

- Anti-platelet therapy
- Beta-blockers (Post myocardial infarction)
- ACE inhibitors/Angiotensin receptor blockers
- Calcium channel blockers
- Anticoagulants
- Diuretics

Implantable devices

The use of implantable devices is increasing and evidence exists that CR improves outcome for this population (Appendix 6).¹⁴⁻¹⁶ Practitioners need to be aware of how devices impact on a individual patient, their carer's and family's psychological health. The use of devices can also have an impact on physical activity and exercise ability.

CR should include:

- Up to date information, for patients and CR staff, on device parameters and associated heart rate - rhythm control medication
- Referral protocol to specialist cardiac services for support as required

2.2.6. Long-term management:

There are two aspects to long-term management; one involving the individual patient's responsibility and the other involving the continuation of health care provision. Collaboration between primary and secondary care services is vital in order to achieve the best CR outcomes. The availability of home-based and community CR opportunities, both of which are effective¹⁷ will influence the duration of the initial CR provision.

- The individual's own responsibility to pursue a healthy lifestyle:
Individuals should be encouraged to use local community opportunities that suit their own circumstances. Carers, spouses and family can contribute to long-term adherence and should be encouraged to help the individual achieve their goals.
- These could include:
 - Phase IV exercise groups
 - Leisure centre and gymnasium memberships, cardiac support group activities, social events such as dancing and other indoor and outdoors activities.
 - Community dietetic and weight management services
- Continuing support of primary care and secondary care services:
Continuity of care is essential to successful long-term management of cardiac disease. It is imperative that each service has defined pathways to monitor effective continuity of care and that CR teams ensure that patients are entered onto GP Practice CHD/CVD registers
- Ongoing support should include:
 - Physical activity and exercise participation
 - Diet and weight management
 - Smoking cessation
 - Psychological wellbeing
 - Risk factor management: blood pressure, lipids and glucose.
 - Cardioprotective drug therapies and devices
 - Continuation of CR audit (NACR)

3. The Standards development group

The membership of the development group embody many professional associations all working within cardiac rehabilitation services or associated professional institutes in the UK. The individual members of the development group, working under the auspices of the BACR, expressed no conflict of interests regarding the material contained in this document.

Co-chaired by:

Prof Patrick Doherty	<i>York St John University and York Hospitals NHS Trust</i>
Mrs Bernie Downey	<i>Belfast Health and Social Care Trust - Mater Hospital Site</i>
Prof Bob Lewin	<i>BHF Cardiac Care and Education Research Group University of York</i>
Prof David Wood	<i>National Heart and Lung Institute, Imperial College London.</i>
Mrs Judith Edwards	<i>Hammersmith Hospitals NHS Trust</i>
Dr Dorothy Frizelle	<i>University of Hull</i>
Dr Malcolm Walker	<i>University College Hospital, London</i>
Mrs Linda Edmunds	<i>Cardiff and Vale NHS Trust</i>
Mrs Sally Hinton	<i>BACR, Phase IV Lead</i>
Mr Geoffrey Dorrie	<i>BACR, Phase IV representative</i>
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Miss Chetali Agrawal	<i>Westminster Primary Care Trust</i>
Mrs Shirley Hall	<i>British Heart Foundation</i>
Mrs Carol Over	<i>North Cheshire Hospitals NHS Trust Website</i>
Mrs Ann Ross	<i>North Glasgow and Clyde NHS Trust</i>
Mrs Linda Binder	<i>NHS Heart Improvement Programme</i>

4. Appendices

Appendix 1: Cardiac rehabilitation team

A comprehensive CR team of appropriately of qualified core staff including; a cardiac specialist nurse, physiotherapist, dietician, administrator and a designated clinical lead (cardiologist or GP specialist in cardiology). The team should also include, where appropriate, referral to a psychologist, pharmacist, occupational therapist and physical activity-exercise specialist. The full CR team should be involved with the development of CR educational materials. The time allocated per professional should be in agreement with the established guidelines. The agenda for change bands are a guide to the minimum requirement and may vary locally.

Staffing per 500 patients based on the SIGN guidelines and adapted in light of Agenda for Change:

Specialist Nurse	(band 6 to 7)	3.0 WTE
Specialist Physiotherapist	(band 6 to 7)	2.0 WTE
Dietician	(band 6 to 7)	0.3 WTE
Pharmacist	(band 6 to 7)	0.2 WTE
Clinical Psychologist	(band 6 to 7)	0.2 WTE
Audit and Clerical staff	(band 3)	0.5 WTE

Appendix 2: Assessment of individual needs

The assessment of individual needs should be agreed collectively by the CR team and include all the relevant aspects of the core requirements. The assessment should, at the very least, include the core items of the NACR (appendix 4). Competent staff should carry out the assessment and appropriate action be taken to ensure prompt intervention and or referral of patients to meet identified needs.

Appendix 3: Target patient population

Types of patients suitable for cardiac rehabilitation irrespective of age, sex, ethnic group and condition are:

- Coronary heart disease (CHD)
 - Exertional angina
 - Acute coronary syndrome (unstable angina or NSTEMI or STEMI) following medical/surgical management
- Before and after revascularisation – Percutaneous revascularisation or surgery
- Following any stepwise alteration in CHD condition
- Other atherosclerotic disease e.g. peripheral arterial disease
- Stable heart failure and cardiomyopathy
- Congenital heart disease
- Following implantable device interventions

Appendix 4: Cardiac Rehabilitation Audit

The BACR consider registration with the National Audit Cardiac Rehabilitation (NACR) as mandatory. Each CR service should be collecting audit data of individual outcomes for every patient and should be willing to provide this information to the NACR. The BHF Cardiac Care and Education Research group based at the University of York are managing the dataset. <http://www.cardiacrehabilitation.org.uk/>. Assistance is available from the NACR team to overcome IT issues.

Appendix 5: Cardiac rehabilitation budget

This can take the form of annually allocated budgets or cost per case tariffs. It should be sufficient to meet CR costs for core staff, referral staff and appropriate resources to deliver a safe and effective service. The budget will, at the very least, have to meet the costs associated with the minimum standards and core components.

Appendix 6: Recommended policy statements and service guidelines

Cardiac rehabilitation resources		
Group	Guideline /Policy	Website
CHD	NSF CHD (2000)	www.dh.gov.uk
	Scottish Intercollegiate Guidelines Network (SIGN) (2007) No. 97	www.sign.ac.uk
CR	Cardiac rehabilitation (2000) Cochrane Database No. 4	http://www.cochrane.org
	SIGN (2002) Cardiac rehabilitation (57)	www.sign.ac.uk
	Psychological interventions (2004) No.2	http://www.cochrane.org
	CREST: Guidelines for Cardiac Rehabilitation in Northern Ireland	http://www.crestni.org.uk
CR Exercise	Association of Chartered Physiotherapists in CR (ACPICR) Standards for phase III Cardiac Rehabilitation (2006)	www.acpicr.org.uk
	AHA/AACVPR guidelines (2007)	www.americanheart.org
	ACSM guidelines (2006)	www.acsm.org
	American association of cardiovascular and pulmonary rehabilitation	www.aacvpr.org
Cardiovascular health	Joint British Societies' (JBS2) Guidelines on Prevention of Cardiovascular Disease in Clinical Practice	www.bcs.org
Myocardial infarction	NICE guidelines for post MI (2007)	www.nice.org.uk
Heart Failure	NICE guidelines for Heart failure	www.nice.org.uk
	European Society of Cardiology	www.escardio.org
	SIGN Heart failure (95)	www.sign.ac.uk
Arrhythmias & Sudden Cardiac Death	NSF CHD-Chapter 8 of NSF	www.dh.gov.uk
Arrhythmia	NICE guidelines for arrhythmia SIGN (94)	www.nice.org.uk www.sign.ac.uk
Diet and weight management	DH: Raising the issue of weight SIGN (2007) No. 97	www.dh.gov.uk www.sign.ac.uk
Audit (NACR)	National Audit Cardiac Rehabilitation	www.cardiacrehabilitation.org.uk/

Appendix 7: Web resources

Useful website addresses	
BACR	www.bcs.com/bacr
BHF Cardiac Care and Education Research Group	www.cardiacrehabilitation.org.uk/
Phase IV cardiac rehabilitation	www.bacrphaseiv.co.uk
British Heart Foundation (BHF)	www.bhf.org.uk
British Association of Sport and Exercise Science (BASES)	www.bases.org.uk
BHF heart statistics	www.heartstats.org
Welsh Assembly Government	www.new.wales.gov.uk/topics/health
Hearts for Life	www.heartsforlife.co.uk
Scottish Intercollegiate Guidelines Network (SIGN)	www.sign.ac.uk
National Electronic Library for Health	www.nelh.nhs.uk/
Department of Health	www.dh.gov.uk/
Arrhythmia alliance	www.arrhythmiaalliance.org.uk

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