

Modern Standards and Service Models

Coronary Heart Disease

**national
service
frameworks**

Chapter Seven
Cardiac rehabilitation

7

Chapter Seven: Cardiac rehabilitation

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7.0 Cardiac rehabilitation

Introduction

This National Service Framework (NSF) for Coronary Heart Disease (CHD) establishes clear standards for prevention and treatment of CHD that will lead to major improvements in quality and access.

There are seven clinical chapters in this NSF, of which this is the seventh. They cover the following areas:

- 1 Reducing heart disease in the population (standards one and two)
- 2 Preventing CHD in high risk patients (standards three and four)
- 3 Heart attack and other acute coronary syndromes (standards five, six, and seven)
- 4 Stable angina (standard eight)
- 5 Revascularisation (standards nine and ten)
- 6 Heart failure (standard eleven)
- 7 Cardiac rehabilitation (standard twelve).

They each set out:

- the aim
- the relevant standards
- the rationale
- effective interventions
- service models (structuring care and clinical audit)
- immediate priorities
- milestones and goals
- holding the NHS to account – performance indicators.

This chapter includes details of the early milestones relating to cardiac rehabilitation – these are the immediate priorities in which rapid improvement is expected in this area.

All the chapters are summarised in section 2 of this NSF.

[A] **Aim**

- 1 This chapter sets out how the NHS and others can best help people who have had a heart attack, revascularisation or other cardiac event maximise their chances of leading a full life and resuming their place in their community.

[B] **Standards**

- 2 The standard of care that the NHS will aim for is:

Standard twelve

NHS Trusts should put in place agreed protocols/systems of care so that, prior to leaving hospital, people admitted to hospital suffering from coronary heart disease have been invited to participate in a multidisciplinary programme of secondary prevention and cardiac rehabilitation. The aim of the programme will be to reduce their risk of subsequent cardiac problems and to promote their return to a full and normal life.

[C] **Rationale**

- 3 People with CHD are at increased risk of premature death, heart attack and other vascular events. Those at greatest risk are those with the most severe disease – typically those who need to be admitted to hospital because of CHD. But, as described elsewhere in this NSF, there is much that can be done to reduce these risks, for example a healthy lifestyle and the correct medication can reduce risk by about a third to a half.
- 4 Many people find making significant changes to the way they lead their lives can be very difficult. For example, people may be addicted to nicotine; and if someone recently admitted to hospital with CHD is to increase the amount of physical activity they undertake regularly, not only do they need to be well motivated, but they and their families need to be confident that exercise is safe.
- 5 Like all major illness, CHD has a physical, psychological and behavioural impact on patients and their families. Most people are resilient and the adverse psychological consequences are transient, but for some, the psychological consequences can in themselves be persistent and disabling. They can also be a barrier to making the lifestyle changes necessary to reduce subsequent cardiac risk. For example, people with CHD can become afraid to take exercise or to participate as fully as they might in everyday activities for fear of damaging their heart.
- 6 After admission to hospital, perhaps because of a heart attack or for coronary revascularisation, the provision of the correct advice and treatment in primary care is not always enough. Many people require more intensive help to understand their illness and its treatment, to achieve the lifestyle changes they want to make, and to regain their confidence so that they can enjoy the best possible physical, mental and emotional health and so return to as full and as normal a life as possible.

- 7 Cardiac rehabilitation is defined by the World Health Organisation as:
- “.. the sum of activities required to influence favourably the underlying cause of the disease, as well as the best possible, physical, mental and social conditions, so that they (people) may, by their own efforts preserve or resume when lost, as normal a place as possible in the community. Rehabilitation cannot be regarded as an isolated form or stage of therapy but must be integrated within secondary prevention services of which it forms only one facet”¹.*
- 8 The provision of skilled help, support and supervision that is tailored to individual patients can: a) help people understand their illness and its treatment; b) provide psychological and emotional support; c) improve people’s success in making beneficial lifestyle changes; and d) help people make the transition back to a full and as normal a life as possible². Although in the UK ‘cardiac rehabilitation’ usually refers to services over and above those provided by primary care, it is important that cardiac rehabilitation is seen as *an integral component of both the acute stages of care and of secondary prevention*³.
- 9 The evidence suggests that, when well provided and when people are offered comprehensive and tailored help with lifestyle modification involving education and psychological input as well as exercise training, cardiac rehabilitation can make a substantial difference perhaps reducing mortality by as much as 20% to 25% over three years^{4,5}. It is also greatly appreciated by many patients.
- 10 Cardiac rehabilitation should begin as soon as possible after someone is admitted to hospital with CHD (Phase 1), continue through the early discharge period (Phase 2) and the formal rehabilitation programme (Phase 3) and extend into the long-term maintenance of the best possible health (Phase 4).
- 11 A UK estimate⁶ suggests a cost of £6,900 per QALY and a cost per life year gained of £15,700 at 3 years, from cardiac rehabilitation. This represents good value compared to many other treatments currently provided by the NHS.
- 12 Cardiac rehabilitation has been shown to improve prognosis and function for people with the following manifestations of CHD⁷:
- following acute myocardial infarction (AMI)
 - before and after revascularisation procedures (CABG and angioplasty)
 - stable angina
 - heart failure
 - other specialised interventions such as cardiac transplant.
- 13 However, it has not been shown to be helpful for people with unstable angina.

- 14 Currently, many people who might benefit do not receive adequate cardiac rehabilitation. The extent and nature of provision varies dramatically around the country⁹ and there are marked inequalities in the way people access the services that are available. For example, although more than a third of people with CHD are women, only 15% of people using rehabilitation services are women. Minority ethnic groups, the elderly and people with more severe CHD are also under-represented among users of rehabilitation services. In many parts of the country those that do attend may have to wait for several weeks after being ready to benefit from cardiac rehabilitation, thereby delaying their return to normal life.
- 15 Barriers to people's participation in rehabilitation can include: a) lack of motivation – sometimes reflecting patients' perceptions of the strength of physicians' recommendations to attend; b) practical problems e.g. difficulties getting to rehabilitation sessions; and c) lack of appropriate provision e.g. for women or people from minority ethnic groups.
- 16 There is thus considerable scope for improving cardiac rehabilitation and secondary prevention services in England so that, in addition to the primary care services set out in chapter 2, all those most in need are offered rehabilitation that includes exercise, psychological, dietary and educational interventions.

[D] **Effective interventions**

- 17 Cardiac rehabilitation services should form part of and be integrated closely with other services provided in primary care (Chapter 2) and secondary care (Chapters 3, 4, 5, 6).
- 18 The aim should be to offer high-quality cardiac rehabilitation before discharge from hospital to people with any of the manifestations of CHD listed in paragraph 12. The initial priority is to make sure that people who have survived a myocardial infarction or who have undergone coronary revascularisation are offered cardiac rehabilitation.
- 19 Once Trusts have an effective system recruiting people who have survived a myocardial infarction or who have undergone coronary revascularisation to high quality cardiac rehabilitation, they should extend their rehabilitation services to people admitted to hospital with other manifestations of coronary heart disease e.g. angina and heart failure.
- 20 The interventions that should be offered to people who are candidates for cardiac rehabilitation, unless contraindicated are:

The investigations and interventions that people who are candidates for cardiac rehabilitation should be offered unless contraindicated (*see Chapter 2 for more detail on the particular interventions*) are:

Before discharge from hospital (Phase 1)

to be offered as soon as is practical as an integral part of the acute care of someone admitted (or planned to be admitted) to hospital with CHD:

- assessment of physical, psychological and social needs for cardiac rehabilitation
- negotiation of a written individual plan for meeting these identified needs (copies should be given to the patient and the general practitioner)
- initial advice on lifestyle e.g. smoking cessation, physical activity (including sexual activity), dietⁱ, alcohol consumption and employment
- prescription of effective medication (see chapters 2-6) and education about its use, benefits and harms
- involvement of relevant informal carer(s)
- provision of information about cardiac support groups
- provision of locally relevant written information about cardiac rehabilitation

Early post-discharge period (Phase 2)

- comprehensive assessment of cardiac risk, including physical, psychological and social needs for cardiac rehabilitation; and a review of the initial plan for meeting these needs
- provision of lifestyle advice and psychological interventions according to the agreed plan from relevant trained therapists who have access to support from a cardiologist
- maintain involvement of relevant informal carer(s)
- review involvement with cardiac support groups
- offer resuscitation training for family members

Four weeks after an acute cardiac event (Phase 3): as Phase 2 plus

- structured exercise sessionsⁱ to meet the assessed needs of individual patients
- maintain access to relevant advice and support from people trained to offer advice about exercise, relaxation, psychological interventions, health promotion and vocational advice

Long-term maintenance of changed behaviour (Phase 4)

- long term follow-up in primary care (see chapter 2)
- offer involvement with local cardiac support groups
- referral to specialist cardiac, behavioural (e.g. exercise, smoking cessation) or psychological services as clinically indicated.

ⁱ Exercise sessions may be structured in a variety of ways to meet the needs of individual patients. Typically they will be provided to groups, last at least 6 weeks, but normally 12 weeks or more and comprise at least 3 sessions per week with a minimum of 2 supervised exercise sessions (individual programmes often in a group environment) and 1 session of education and information for patients, partners, carers and family. Some people may benefit from individual sessions and others may prefer to exercise at home guided, for example, by a self-help manual.

Special considerations

- 21 Special consideration should be made to ensure that services meet the particular needs of the following groups, each of whom can benefit from cardiac rehabilitation:
- people from minority ethnic groups¹¹
 - women
 - people on low incomes
 - the elderly
 - people with physical disability.
- 22 People with severe CHD, e.g. those with complicated AMI, also require special consideration as they are currently under-represented in cardiac rehabilitation programmes. People whose potential to exercise is limited may have much to gain from the non-exercise components of cardiac rehabilitation. Consideration should be given as to how this group of people will not be overlooked in the future.
- 23 One of the barriers to participation in cardiac rehabilitation programmes is difficulty getting to the relevant venue. Consideration should be given to how people will travel to and from their rehabilitation sessions.
- 24 Most people will want to make use of the cardiac rehabilitation services provided in association with the hospital where they were admitted. But for some people this is not practical: some people are admitted to hospital far from where they live e.g. for surgery at a specialist centre or if they become unwell suddenly while away from home. Others may want to convalesce with family or friends who live in another part of the country. Rehabilitation services must, therefore, be able to make and accept referrals from other clinicians working in other localities.

[E] Service models

- 25 The variations in the nature and extent of provision of cardiac rehabilitation services and in the rates of recruitment mean that too many people who could benefit remain unidentified, and inadequately treated and followed up.
- 26 However, where cardiac rehabilitation teams' services have been adequately resourced and where they have adopted a systematic and structured approach to their work, the numbers of people treated appropriately have increased. If all those who have most to gain from cardiac rehabilitation are to be offered the appropriate advice and treatment, the evidence suggests care should be provided systematically.

27 Trusts should put in place (and PCGs/PCTs should commission) models of care that:

use a systematic approach for:

- identifying people who are likely to benefit from cardiac rehabilitation before they are discharged from hospitalⁱⁱ
 - assessing individuals' risks and needs for cardiac rehabilitation and developing individualised plans to meet those needs
 - providing and documenting the delivery of appropriate advice and treatment and offering regular review to people accepting the offer of cardiac rehabilitation
 - integrating care¹² with the local network of secondary prevention services provided by primary care teams and others
 - assessing and improving the quality of care.
-

28 Systematic care implies that Trusts should agree, implement and audit a detailed plan and protocol for identifying, treating and following up their patients who may benefit from coronary rehabilitation.

29 Trusts should begin by developing systematic approaches to identifying people who have survived a myocardial infarction or who have undergone coronary revascularisation and offering them cardiac rehabilitation.

30 Once Trusts have an effective system for identifying, treating and following up people who have survived a myocardial infarction or who have undergone coronary revascularisation they should extend their rehabilitation services to people admitted to hospital with other manifestations of coronary heart disease e.g. angina and heart failure.

Identifying people who are likely to benefit from cardiac rehabilitation before they are discharged from hospital

31 No matter how good the quality of cardiac rehabilitation, its impact will be limited if those with most to benefit are not identified and offered the service.

32 Some groups of patients are easy to identify (e.g. those undergoing revascularisation and those with an acute myocardial infarction cared for on Cardiac Care Units). Others (e.g. the elderly with acute myocardial infarction cared for on a general ward) may require more effort to identify.

33 Models of care should include Trust-wide protocols specifying the arrangements for identifying appropriate patients. These protocols should include details of:

ⁱⁱ The first priority is to offer cardiac rehabilitation to those who have survived a myocardial infarction and those who have undergone coronary artery bypass grafting (CABG) or (PTCA).

- a written Trust-wide agreement (with the relevant PCGs/PCTs) about the groups of patients who are to be offered cardiac rehabilitation
 - an explicit agreement between teams undertaking *revascularisation* (i.e. surgical teams and invasive cardiac teams) and the cardiac rehabilitation team, as to how patients undergoing revascularisation will be identified to the cardiac rehabilitation team (e.g. by sending a copy of surgical lists sent to the rehabilitation team) and when and how the rehabilitation team should make contact with patients (e.g. pre-operatively or post-operative visit to the patient's bed side)
 - an explicit agreement with cardiologists and other clinical teams caring for people with AMI and other manifestations of CHD, as to how patients will be identified to the rehabilitation team (e.g. notification by nursing or medical staff the day after admission) and when and how the rehabilitation team should make contact with patients (e.g. consultation at the patient's bed side before discharge or when the patient is stable).
-

Assessing individuals' risks and needs for cardiac rehabilitation and developing individualised plans to meet those needs

- 34 Different people have different needs. A prime aim of the cardiac rehabilitation programme is to provide a set of services tailored to the needs of each individual patient based on a comprehensive assessment of their cardiac risks.
- 35 Before discharge from hospital, people's needs for rehabilitation should be assessed by appropriately trained staff. This assessment should be used to develop a tailored plan for each individual. As a minimum this assessment and an individual's plan should address systematically the following:

- physical needs including desirable lifestyle changes (e.g. increased physical activity, smoking cessation, diet, alcohol consumption, medication and further clinical management)
 - educational needs
 - psychological needs
 - social, cultural and vocational needs
 - family and carer needs.
-

- 36 Some teams find it helpful to use pre-printed forms to structure the assessment interview to record details of symptoms, modifiable risk factors, treatments, employment, social circumstances, and the results of relevant investigations. Validated instruments such as the Hospital Anxiety and Depression Scale (HAD)¹³ or Dartmouth Co-Op Charts¹⁴ may also help in the assessment of psychological, social and emotional needs.
- 37 The same record can also be used to record a treatment plan agreed with the patient. It can also be helpful if the plan includes measurable targets which can be used to assess progress. A copy of this plan should be given to the patient and another sent to the primary care team. A copy of the summary of the patient assessment care plan, HAD and audit tools recommended by a joint working party of the British Cardiac Society (BCS) and the Royal College of Physicians (RCP)³ are in Appendix A.
- 38 The local cardiology and cardiac surgical teams have important roles to play in a high quality rehabilitation service. The early stages of rehabilitation should be an integral component of the acute care that they provide. Their commitment to rehabilitation and the strength of the advice they give to patients influences people's motivation to participate in active cardiac rehabilitation. These teams have the skills and expertise to oversee the programme and support the multidisciplinary team delivering the service.

Providing and documenting the delivery of appropriate advice and treatment and offering regular review to people accepting the offer of cardiac rehabilitation

- 39 The evidence suggests that cardiac rehabilitation is more effective when it includes educational and psychological components as well as physical fitness training⁷. Although there are many different ways in which each of the various components of cardiac rehabilitation can be provided, it is not known which service model is most effective for particular groups of patients. The aim, therefore, is to develop a range of services and service models in each locality so that different packages of care can be constructed to meet the assessed needs of each individual patient.
- 40 The range of available services, should include:

Trained staff

- 41 Rehabilitation services should be available from people trained in:

-
- the provision of advice about exercise and exercise supervision and who are capable of modifying exercises appropriately on an individual basis to take account of co-morbidity
 - lifestyle interventions (e.g. smoking cessation, and healthy eating)
 - psychological treatments (e.g. cognitive behavioural therapy)
 - defibrillation and advanced life support.
-

Exercise sessions

- 42 It is not clear which model of care is most effective and different models of service delivery seem to suit different patients. There is evidence, however, that structured, taught exercise sessions are most cost-effective in groups and that cost-effectiveness increases with group size.
- 43 Taught exercise sessions can be provided in a hospital or elsewhere e.g. in a Local Authority sports centre. Some people do not want to attend formal taught sessions and for them, resources such as the Heart Manual⁸ or a home-based exercise plan can be helpful.
- 44 Typically people are offered 3 sessions per week of which 2 will be taught/supervised exercise sessions. This intensity of support typically lasts 6 to 12 weeks but in exceptional circumstances may continue for considerably longer.
- 45 Defibrillation equipment and someone trained in its use and advanced life support should be readily available at taught exercise sessions. The British Association of Cardiac Rehabilitation recommend that, ideally, there should be 3 members of staff to 15 patients at taught exercise sessions.

Education and lifestyle and vocational advice

- 46 Verbal and written information for patients and their families should be available in a language that they can understand about:
- CHD
 - relevant medication – its use, benefits and potential harms
 - the symptoms of heart attack and what to do should they develop
 - the benefits of healthy lifestyles and practical advice about how they can be achieved (e.g. practical advice about food and its preparation, about physical activity and smoking cessation)
 - employment and other aspects of daily activity.
- 47 Such advice can be provided in groups or individually.
- 48 The rehabilitation service should agree criteria for referral to specialist services such as dietitians and smoking cessation clinics.

Psychological treatments

- 49 After a major illness, most people need some re-assurance and psychological support to help them regain their self-confidence. However, some people develop psychological disorders that may benefit from more formal psychological interventions such as cognitive behavioural therapy. These need not be complicated interventions and with training, some may be delivered by non-psychologists. A minority of patients may need to be referred for further specialist help.

50 There should be explicit arrangements about how those who are assessed as needing formal psychological interventions receive them.

A district wide cardiac rehabilitation programme.

51 Individual rehabilitation plans will be constructed from the services that are available locally. Each local implementation team (see Section 3 in the main report) and the relevant organisations (e.g. Trusts, PCGs/PCTs, local authorities and voluntary sector cardiac support groups) should agree the range and availability of services that can be drawn on for cardiac rehabilitation. These services, collectively, will form the backbone of a district-wide cardiac rehabilitation service. This service should be delivered with the aid of local protocols used by relevant organisations and teams. The service should be referred to in the HIImP and reflected in long term service agreements.

52 A clear description of the district cardiac rehabilitation programme should be available to the public, to service providers and to commissioners and should be cited in the HIImP. This description should include details of:

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- the patients to be offered cardiac rehabilitation
 - staffing (including details of the skills and training required)
 - the location and timetable of service provision
 - audit criteria (see below)
 - investment and resources.
-

53 It may be necessary to offer sessions that cater specifically for particular groups of people. For example, Asian women may be reluctant to attend sessions attended mainly by white men. People with the relevant language skills will also be required.

54 Neither the staff nor the facilities necessarily need to be provided exclusively by the NHS. For example, local authority leisure centres, church hall or other such publicly-accessible facilities may be appropriate venues for cardiac rehabilitation sessions. Similarly, appropriately trained local authority staff can play a useful role in supervising physical activity, providing social support, and with other aspects of cardiac rehabilitation.

55 Planning and providing a comprehensive district-wide cardiac rehabilitation and secondary prevention service provides an important opportunity for agencies to work together.

56 Whatever the detail of local rehabilitation services, records should be kept so that the service can be audited against nationally recommended guidelines. This should include information about ethnicity so that it is possible to monitor equity of access. Audit will be easier to undertake if data is stored electronically in a way that allows ready analysis.

Integrating care with secondary prevention services provided by primary care teams

- 57 Once the period of intensive rehabilitation is over, arrangements for long-term access to appropriate physical activity, medical and social support should be discussed and agreed with each patient.
- 58 The primary care team should be provided with details of patients' progress and of their long-term plans. Primary care teams should ensure that patients' details are recorded on the practice's CHD register and that they are followed up regularly as described in Chapter 2.

Clinical audit

- 59 Clinical audit – the systematic assessment of the quality of care – is an essential component of modern, high quality health care. It will also be an essential component of effective clinical governance embracing all health professionals. Participation in clinical audit is recognised by the General Medical Council^{16,17} as an integral part of good medical practice. The Government also expects all clinicians working in the NHS to undertake clinical audit and to use the results to improve the quality of care.
- 60 Trusts should work with their local PCGs/PCTs and their constituent practices to undertake clinical audit that allows them to review annually the items listed in **bold** below. They may also wish to review the other items when it becomes possible to collect these data.

1 number and % of patients discharged from hospital after coronary revascularisation OR with a primary diagnosis of AMI with documentation of arrangements for cardiac rehabilitation in discharge communication to GP (by Trust and PCG/PCT and by sex, age 35-74ⁱⁱⁱ years, and ethnic group)

2 number and % of patients discharged from hospital with a primary diagnosis of CHD recruited to a cardiac rehabilitation programme by Trust and PCG/PCT and by sex, age 35-74ⁱⁱⁱ years, and ethnic group

3 total number and % of those recruited to cardiac rehabilitation who have an individualised plan for rehabilitation and secondary prevention before discharge from hospital

4 total number and % of those recruited to cardiac rehabilitation who, one year after discharge, report:

- **regular physical activity of at least 30 minutes duration on average 5 times a week**
- **not smoking**
- **BMI < 30 kg/m².**

(NB. PCGs/PCTs and rehabilitation services may wish to collaborate in the collection, analysis and interpretation of their audit data to avoid duplication of effort and to gain a more complete picture of the quality of rehabilitation and secondary prevention services.)

ⁱⁱⁱ Age 35-74 is used to allow consistency of data for audit purposes. The standards set out in this NSF apply to all people, irrespective of age, who may benefit.

Interpretation of audit criteria: performance indicators not performance measures

61 Importantly these audit criteria are indicators and not measures of access and quality of care. There are many reasons why an individual's or an institution's figures may appear to be better or worse than expected. Possible explanations include differences in quality and completeness of data recording, differences in the characteristics of people being treated and chance as well as differences in the quality of care.

62 The British Heart Foundation is developing a clinical audit tool that they intend could be used nationally. In time, it is likely that the National Institute for Clinical Excellence (NICE) will be asked to commission or endorse a method of clinical audit for cardiac rehabilitation that can be used throughout the NHS. The information systems that are being developed by the Information Authority as part of the new information strategy will support clinical and audit needs of the National Service Frameworks.

[F] **Immediate priorities**

63 The immediate priorities for implementing this area of the NSF are:

- increasing the use of effective medication in survivors of heart attacks so that by April 2002 at discharge from hospital, at least:
 - 90% are prescribed aspirin
 - 80% are prescribed statins
 - 80% are prescribed beta-blockers or ACE inhibitors
- delivering the early milestones.

64 This will be monitored through the performance management processes.

[G] **Milestones and goal**

65 There is enormous variation in the extent and provision of cardiac rehabilitation and secondary prevention services around the country.

66 The NSF provides a measure against which every rehabilitation service can assess itself and describes a set of milestones that will allow Trusts and PCGs/PCTs to set realistic and achievable targets. It also provides a mechanism for continually improving the quality of care.

67 The milestones listed overleaf should be used locally to set realistic and achievable targets for cardiac rehabilitation services. These targets should reflect local HImPs and be recorded in other local plans.

Milestone 1

By October 2000, every hospital should have:

an effective means for setting hospital-wide clinical standards^{iv} for common conditions
a systematic approach to determining whether agreed clinical standards are being met.

Milestone 2

By April 2001, every hospital should have:

an agreed hospital-wide protocol for the identification, assessment and management of people who are likely to benefit from cardiac rehabilitation.

Milestone 3

By April 2002, every hospital should have:

clinical audit data no more than 12 months old that describe all the items listed in bold in paragraph 60. Where relevant these data are derived from participation in national audits.

The NSF goal

Every hospital should:

ensure: a) that more than 85% of people discharged from hospital with a primary diagnosis of AMI or after coronary revascularisation are offered cardiac rehabilitation; and b) that one year after discharge at least 50% of people are non-smokers, exercise regularly and have a BMI <30 kg/m²; these should be demonstrated by clinical audit data no more than 12 months old.

68 Over time, as these milestones are reached, new, more-demanding milestones will be added to promote the continuous improvement of quality of care throughout the NHS.

^{iv} Where accepted national standards exist they should be included as part of the locally agreed hospital-wide standards.

[H] Holding the NHS to account

69 The Commission for Health Improvement and the Regional Offices of the NHS Executive will use both local and national indicators to judge the performance of individual organisations.

70 NHS organisations will be expected to demonstrate that, in implementing this National Service Framework, they are making full use of the new mechanisms for improving quality of care. This includes ensuring that local systems of clinical governance and life-long learning are used to promote the quality of services for the prevention and treatment of CHD.

NHS Performance Assessment Framework

71 Nationally the Performance Assessment Framework (PAF) and the associated High Level Performance Indicators (HLPis) can be used to assess overall performance of the NHS. Equally the PAF can be used to assess performance of a specific aspect of the NHS, supported by suitable indicators. The CHD performance indicators, relevant to this chapter, fit within the areas of the Performance Assessment Framework as follows (those shown in italics cannot yet be derived from routinely available data):

Health improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class)

Fair access and effective delivery of appropriate health care

- *number and % of patients discharged from hospital after coronary revascularisation OR with a primary diagnosis of AMI with documentation of arrangements for cardiac rehabilitation in discharge communication to GP.*
-

72 The NHS Executive will provide detailed advice about the collection of each of these data items.

73 It is anticipated that:

- the following items will be available from April 2000:
 - age-sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class)
- the following items will be available from April 2001:
 - *number and % of patients discharged from hospital after coronary revascularisation OR with a primary diagnosis of AMI with documentation of arrangements for cardiac rehabilitation in discharge communication to GP.*

[]

Summary

74

This chapter has described:

- how cardiac rehabilitation can facilitate the return to normal life and work
- why comprehensive cardiac rehabilitation is important as an integral component of secondary prevention of CHD
- the evidence-based approach to cardiac rehabilitation
- service models that the NHS will be expected to put in place to reduce inequalities and inappropriately low rates of access to cardiac rehabilitation
- the milestones marking progress and the NSF goals
- the measures that will be used to judge progress and performance.

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Appendix A

Cardiac rehabilitation: audit tools recommended by the British Cardiac Society (BCS) and the Royal College of Physicians (RCP) Joint Working Party

Patient Summary

Patient code number

1 What was the initiating event?

Angina MI Cardiac Surgery Angioplasty Heart Failure

Any non-cardiac morbidity (specify)

Initiating episode date

Month

Year

Age

Sex

Ethnic group (specify)

2 Risk Factors

Yes

No

Do the notes indicate that the blood pressure (mmHg) has been assessed?

Do the notes indicate that the blood fats (LDL and HDL) have been assessed?

Do the notes indicate that smoking has been assessed?

Do the notes indicate that the blood or urine sugar has been assessed?

Do the notes indicate the presence of both weight and height from which BMI can be estimated?

Do the notes indicate the patient's usual exercise pattern?

3 Exercise capacity

Yes

No

Is there a written record of exercise capacity being assessed?

Is there a written record of the patient having an exercise test?

4 Personal plan

Yes

No

Has the patient been given a written personal rehabilitation plan?

If yes, is there a copy of the written personal rehabilitation plan in the notes?

Do the notes record a smoking history?

Does the patient smoke?

Has the possibility of further advice and support about stopping smoking been offered?

Do the notes indicate whether the patient has concerns about sexual activity?

If yes, has the patient been referred for sexual counselling?

	Yes	No
Do the notes indicate whether the patient has concerns about return to work?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, has the patient been referred for vocational guidance?	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>		
5 Exercise programme	Yes	No
Do the notes indicate exercise advice for the patient?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, which of the following have been recommended:		
To continue activities of daily living	<input type="checkbox"/>	<input type="checkbox"/>
Home-based structured exercise	<input type="checkbox"/>	<input type="checkbox"/>
Community-based group exercise	<input type="checkbox"/>	<input type="checkbox"/>
Hospital-based exercise	<input type="checkbox"/>	<input type="checkbox"/>
None of these	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate attendance at the formal (hospital or community-based) exercise sessions?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, what is the estimate of the patient's attendance rate?		
<input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> 0%		
<hr/>		
6 Psychological aspects	Yes	No
Do the notes indicate the patient's psychological state?	<input type="checkbox"/>	<input type="checkbox"/>
Has the patient been assessed for anxiety and depression using the HAD scale?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate whether the patient is anxious?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate whether the patient is depressed?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, do the notes indicate that the patient has been referred for assessment/treatment?	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>		
7 Educational support	Yes	No
Do the notes indicate that both patient and partner have been offered an educational package?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate that both patient and partner have been offered a stress management programme?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate whether a home visit has been offered by a member of the rehabilitation team?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
Do the notes indicate whether both patient and partner have been offered counselling?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate whether both patient and partner have been offered guidance on action to take in event of relapse?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate whether both patient and partner have been offered an opportunity for CPR training?	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>		
8 Medical investigations and treatment	Yes	No
Do the notes indicate whether the patient is receiving aspirin post-cardiac episode?	<input type="checkbox"/>	<input type="checkbox"/>
Do the notes indicate whether the patient has heart failure?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, do the notes provide evidence that the heart failure has been addressed?	<input type="checkbox"/>	<input type="checkbox"/>
Since referral to the programme which, if any, of the following investigations have been initiated?		
Angiography	<input type="checkbox"/>	<input type="checkbox"/>
MI perfusion imaging	<input type="checkbox"/>	<input type="checkbox"/>
Radionuclide ventriculography	<input type="checkbox"/>	<input type="checkbox"/>
Echocardiography	<input type="checkbox"/>	<input type="checkbox"/>
CABG	<input type="checkbox"/>	<input type="checkbox"/>
PTCA	<input type="checkbox"/>	<input type="checkbox"/>
Transplant	<input type="checkbox"/>	<input type="checkbox"/>
Temporary pacemaker	<input type="checkbox"/>	<input type="checkbox"/>

THOMPSON D et al (1997) Cardiac Rehabilitation Guidelines and Audit Standards. Royal College of Physicians.

Notes concerning the patient audit sheet

Cardiac rehabilitation is a comparatively new adjunct to the medical treatment of patients with heart disease. Information concerned with cardiac rehabilitation may not always be readily available in the medical notes as this is a multidisciplinary activity that, in the main, takes place on an out-patient basis. It would, therefore, be prudent to discuss this audit with the cardiac rehabilitation co-ordinator in order to establish the sources of information. The notes below refer to the numbers on the page opposite.

- 1 These audit points determine the primary reason for inclusion in cardiac rehabilitation. The patient code number should be associated with this exercise only and should not be traceable. The information needed to complete this section will be available in the medical notes.
- 2 These audit points address whether coronary risk factors have been assessed. Blood pressure will be measured in mmHg. High and low density lipoproteins or total serum cholesterol may be used to determine blood fats. Smoking may be assessed by the volume of cigarettes/pipe tobacco consumed over a period of time or by expired CO. Blood sugar is measured in mmol/L and urine sugar as a percentage. Weight is measured in kilogrammes and height in metres and millimetres, from this the BMI can be determined. The patient's usual exercise pattern needs to be ascertained. Most of the factors can be found recorded in the patient's medical notes, but the exercise pattern may be documented elsewhere, for example, in the cardiac rehabilitation notes.
- 3 These audit points will indicate who is offered exercise testing. Exercise may be tested simply by walking at a particular pace over time, by a fixed exercise or treadmill test. This information may be available in the medical notes or, alternatively, kept with the exercise technician or cardiac rehabilitation co-ordinator.
- 4 These audit points will determine whether the patient has received instructions concerning health behaviour change. There is no standard means of recording this information; local custom and practice will need to be established. This information may be held in the nursing notes or kept with the cardiac rehabilitation co-ordinator.
- 5 These audit points address the exercise programme. The type of programme offered to the patient should be identified along with the frequency of the patient's attendance. There is no standard, agreed method of recording this information. The source of this information is likely to be kept by the person responsible for the exercise component or the cardiac rehabilitation co-ordinator.
- 6 These audit points address psychological adjustment. The objective is to determine whether this has been accounted for in the patient's recovery. This may be presented as a subjective impression in the medical notes, for example, as a reference to 'mood' or 'anxiety' or 'depression'. A more objective means of determining this may be obtained by using the Hospital Anxiety and Depression (HAD) scale. This scale will be kept on a separate chart and found either in the medical notes or retained by the cardiac rehabilitation co-ordinator.
- 7 These audit points address the educational and behavioural opportunities offered to the patient. The objective is to determine the range of strategies available to educate and support the patient's health goals. An educational package may include a number of elements, such as providing literature, individual instruction, group discussion or formal lectures. These activities will, in the main, take place on an out-patient basis and will invariably be organised by the cardiac rehabilitation co-ordinator, from whom this information may be obtained.
- 8 These audit points establish whether the patient has had certain major medical interventions during rehabilitation. This information will be readily available in the medical assessment and radiological sections of the patient's medical notes.

Cardiac Rehabilitation Audit – Patient Summary

1 Date of summation

Day Month Year Facility

Number of patients into programme with:

Angina

MI

Cardiac Surgery

Angioplasty

Heart Failure

any non-cardiac morbidity

Total no of patients Lowest age

Total no of women Highest age

Total no from ethnic groups

Does the proportion of women reflect the numbers admitted for acute coronary episode? Yes No

Does the proportion from ethnic groups reflect the numbers admitted for acute coronary episode? Yes No

2 Risk Factors

Number of patients with a record of blood pressure

Number of patients with a record of blood fats (HDL, LDL)

Number of patients with a record of smoking

Number of patients with a record of blood or urine sugar

Number of patients with a record of weight and height

Number of patients with a record of usual exercise pattern

3 Exercise capacity

Number of patients with a record of assessed exercise capacity

Number of patients with a record of an exercise test

4 Personal Plan

Number of patients who have been given a personal rehabilitation plan

Number of patients who smoke

Number of patients offered advice and support to stop smoking

Number of patients who express sexual problems who have been referred for sexual counselling

Number of patients who express return to work problems who have been referred for vocational guidance

5 Exercise programme

- Number of patients given advice on exercise
- Number of patients recommended to continue with daily living activities
- Number of patients given instructions for structured home-based activities
- Number of patients referred to a community-based exercise group
- Number of patients referred to a hospital-based exercise group
- Number of patients not referred to any of these
- Number of patients attending formal exercise classes 100% 75% 50% 25%
- Number of patients stopping attendance at programme
- Number of patients who were women stopping attendance at programme
- Number of patients who were from ethnic groups stopping attendance at programme

6 Psychological state

- Number of patients with written accounts of their psychological state
- Number of patients assessed for anxiety and depression using the HAD scale
- Number of patients found to have psychological morbidity
- Number of patients referred for assessment/treatment

7 Educational support

- Number of patients and partners offered access to an education package
- Number of patients and partners offered access to a stress management programme
- Number of patients and partners offered home visits from a rehabilitation team member
- Number of patients and partners offered counselling
- Number of patients and partners offered guidance in the event of a relapse
- Number of patients and partners offered CPR training

8 Medical investigation and treatment

- Number of patients receiving aspirin
 - Number of patients with heart failure
 - Number of patients with heart failure showing evidence that this has been addressed
 - Number of patients attending for angiogram after referral to programme
 - Number of patients attending for post MI perfusion imaging after referral to programme
 - Number of patients attending for radionuclide ventriculography after referral to programme
 - Number of patients attending for echocardiography after referral to programme
 - Number of patients attending for CABG after referral to programme
 - Number of patients attending for PTCA after referral to programme
 - Number of patients attending for transplant after referral to programme
 - Number of patients for insertion of pacemaker after referral to programme
-

Cardiac Rehabilitation Audit – Facilities

Day Month Year Facility

1	Yes	No
Does the unit have a cardiac rehabilitation programme?	<input type="checkbox"/>	<input type="checkbox"/>
Does the unit have a policy for entry into cardiac rehabilitation programme?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, are all staff involved in the programme given a copy of the policy?	<input type="checkbox"/>	<input type="checkbox"/>
Is there written information in the OPD concerning referral to CR?	<input type="checkbox"/>	<input type="checkbox"/>
Is there written information in other departments concerning referral to CR?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a named consultant associated with the CR programme?	<input type="checkbox"/>	<input type="checkbox"/>
2 Are the following included in the policy?	Yes	No
Specified minimum individual contracts between patient and rehabilitation staff in the first year?	<input type="checkbox"/>	<input type="checkbox"/>
Specified frequency of telephone contact	<input type="checkbox"/>	<input type="checkbox"/>
Guidance on educational programmes for both patient and partner	<input type="checkbox"/>	<input type="checkbox"/>
Guidelines on psychological assessment of both patient and partner	<input type="checkbox"/>	<input type="checkbox"/>
Guidelines on minimum counselling requirements for both patient and partner	<input type="checkbox"/>	<input type="checkbox"/>
Guidelines on criteria for exclusion from programme	<input type="checkbox"/>	<input type="checkbox"/>
Guidelines as to which patient should have exercise testing	<input type="checkbox"/>	<input type="checkbox"/>
Guidelines on exercise protocols	<input type="checkbox"/>	<input type="checkbox"/>
Explicit parameters of safe exercise	<input type="checkbox"/>	<input type="checkbox"/>
Specified routine follow-up of both patients and partners following completion of CR	<input type="checkbox"/>	<input type="checkbox"/>

3	Yes	No
Is the attendance of women monitored?	<input type="checkbox"/>	<input type="checkbox"/>
Is the attendance of ethnic groups monitored?	<input type="checkbox"/>	<input type="checkbox"/>
Does the attendance of women reflect the proportion of the number admitted?	<input type="checkbox"/>	<input type="checkbox"/>
Does the attendance of ethnic groups reflect the proportion of the number admitted?	<input type="checkbox"/>	<input type="checkbox"/>
4	Yes	No
Is there an education programme following patient discharge?	<input type="checkbox"/>	<input type="checkbox"/>
Is there accommodation for group education?	<input type="checkbox"/>	<input type="checkbox"/>
Is there accommodation for counselling?	<input type="checkbox"/>	<input type="checkbox"/>
Is there accommodation in the hospital for supervised exercise sessions?	<input type="checkbox"/>	<input type="checkbox"/>
Is there accommodation in the community for supervised exercise sessions?	<input type="checkbox"/>	<input type="checkbox"/>
Are there facilities for all at risk patients to be exercise tested within 3 months post episode?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a facility for patients to continue exercise once formal programmes are completed?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a patient support group associated with the facility?	<input type="checkbox"/>	<input type="checkbox"/>
5	Yes	No
Is there a training protocol for rehabilitation staff?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, does this include:		
Counselling?	<input type="checkbox"/>	<input type="checkbox"/>
Adult education?	<input type="checkbox"/>	<input type="checkbox"/>
Cardiology up-date?	<input type="checkbox"/>	<input type="checkbox"/>
ACLS?	<input type="checkbox"/>	<input type="checkbox"/>

HAD Scale

Name

Date

Doctors are aware that emotions play an important part in most illnesses. If your doctor knows about these feelings he will be able to help you more.

This questionnaire is designed to help your doctor to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.

Don't take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought-out response.

Tick one box only in each section

1 I feel tense or 'wound up':

- Most of the time
- A lot of the time
- Time to time, Occasionally
- Not at all

8 I feel as if I am slowed down:

- Nearly all the time
- Very often
- Sometimes
- Not at all

2 I still enjoy the things I used to enjoy:

- Definitely as much
- Not quite so much
- Only a little
- Hardly at all

9 I get a sort of frightened feeling like 'butterflies' in the stomach:

- Not at all
- Occasionally
- Quite often
- Very often

3 I get a sort of frightened feeling as if something awful is about to happen:

- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn't worry me
- Not at all

10 I have lost interest in my appearance:

- Definitely
- I don't take so much care as I should
- I may not take quite as much care
- I take just as much care as ever

4 I can laugh and see the funny side of things:

- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all

11 I feel restless as if I have to be on the move:

- Very much indeed
- Quite a lot
- Not very much
- Not at all

5 Worrying thoughts go through my mind:

- A great deal of the time
- A lot of the time
- From time to time but not too often
- Only occasionally

12 I look forward with enjoyment to things:

- As much as I ever did
- Rather less than I used to
- Definitely less than I used to
- Hardly at all

6 I feel cheerful:

- Not at all
- Not often
- Sometimes
- Most of the time

13 I get sudden feelings of panic:

- Very often indeed
- Quite often
- Not very often
- Not at all

7 I can sit at ease and feel relaxed:

- Definitely
- Usually
- Not often
- Not at all

14 I can enjoy a good book or radio or TV programme:

- Often
- Sometimes
- Not often
- Very seldom

HAD Scale Scoring Sheet

1 **A**

3	
2	
1	
0	

8 **D**

3	
2	
1	
0	

2 **D**

0	
1	
2	
3	

9 **A**

0	
1	
2	
3	

3 **A**

3	
2	
1	
0	

10 **D**

3	
2	
1	
0	

4 **D**

0	
1	
2	
3	

11 **A**

3	
2	
1	
0	

5 **A**

3	
2	
1	
0	

12 **D**

0	
1	
2	
3	

6 **D**

3	
2	
1	
0	

13 **A**

3	
2	
1	
0	

7 **A**

0	
1	
2	
3	

14 **D**

0	
1	
2	
3	

This audit tool is taken from the work of Professor David Thompson (National Institute for Nursing), Professor Alison Kitson (Royal College of Nursing) and Dr Anthony Hopkins (Royal College of Physicians). The audit project was funded by a grant awarded by the NHS Executive.

Client Feedback and Goal Planning Form

Name

Date completed

This form gives you a brief summary of the things we talked about at the clinic. This is intended to help you remember the things you are already doing to look after your heart and the things you could do in future to look after it even better.

AREA REVIEWED	CURRENT ASSESSMENT	CLINIC RECOMMENDATION	ACTION AGREED
Medication			
Cholesterol			
Blood pressure			
Exercise			
Diet	1. 2. 3.		
Smoking			

Agreed Action Plan

AGREED GOAL:

Use the chart below to plan how you can work towards your goal a week at a time. Try to set yourself a clear, realistic target each week. If you reach it then set a new target for the next week. If you don't reach your target **don't give up!** Try to think through the difficulties you found and try to reach the same target again the next week.

Week	Target set for the week	Tick if target met	Problems/comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

OTHER INFORMATION

