Cardiac rehabilitation services

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Contents

1 Commissioning cardiac rehabilitation services ................................................................. 4
  1.1 Commissioning for outcomes .................................................................................. 6
  1.2 Key clinical and quality issues .............................................................................. 6
2 An integrated approach to commissioning high-quality integrated cardiac rehabilitation .... 8
3 Assessing service levels for cardiac rehabilitation services ............................................ 10
  3.1 Hospital episode statistics data ............................................................................ 11
  3.2 Current practice ..................................................................................................... 12
  3.3 Expert clinical opinion .......................................................................................... 13
  3.4 Published research .................................................................................................. 13
  3.5 Published guidance .................................................................................................. 14
  3.6 Conclusion ............................................................................................................... 16
4 Specifying a cardiac rehabilitation service .................................................................... 19
  4.1 Identification and referral ...................................................................................... 20
  4.2 Maximising participation and completion .............................................................. 25
  4.3 Delivery of programme .......................................................................................... 32
  4.4 Long-term management .......................................................................................... 37
  4.5 Developing a high-quality comprehensive cardiac rehabilitation service .......... 39
    Multidisciplinary care ............................................................................................... 39
    Anxiety and depression ............................................................................................ 39
  4.6 Service models ........................................................................................................ 41
    Quality, innovation, productivity and prevention ...................................................... 41
    Commissioning for quality and innovation ............................................................. 41
    Case studies ............................................................................................................. 41
5 Service specification for cardiac rehabilitation ............................................................. 43
6 The commissioning and benchmarking tool ................................................................ 50
6.1 Identify indicative local service requirements ................................................................. 50
6.2 Review current commissioned activity ........................................................................... 51
6.3 Identify future change in capacity required ................................................................. 51
6.4 Model future commissioning intentions and associated costs ....................................... 51
6.5 Potential savings ............................................................................................................ 52

7 Further information ......................................................................................................... 53
Additional resources ........................................................................................................... 54

8 Topic Advisory Group: Cardiac rehabilitation services .................................................... 58
   Topic advisory group for the 2011 guide for commissioners update ................................... 58
   Topic advisory group for the 2011 commissioning on services for people with chronic heart failure ..... 58
   Topic advisory group for the 2008 commissioning guide on cardiac rehabilitation ............... 59
1 Commissioning cardiac rehabilitation services

Cardiac rehabilitation is a structured set of services that enables people with coronary heart disease (CHD) to have the best possible help (physical, psychological and social) to preserve or resume their optimal functioning in society.

The World Health Organization has defined cardiac rehabilitation 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'.

Cardiac rehabilitation is recommended in NICE clinical guideline 48 on myocardial infarction (MI): secondary prevention as an appropriate intervention for people following a hospital admission for MI. This supports the National service framework for coronary heart disease which sets the standard that:

'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'.

The National service framework for coronary heart disease established a goal that every hospital should ensure that more than 85% of people discharged from hospital with a primary diagnosis of acute MI or after coronary revascularisation are offered cardiac rehabilitation. It is also recommended in NICE clinical guideline 94 on unstable angina and non-ST-segment-elevation MI (NSTEMI). NICE clinical guideline 108 on chronic heart failure published in 2010 makes a new recommendation supporting cardiac rehabilitation for people with chronic heart failure.

There is evidence that exercise-based cardiac rehabilitation:
Cardiac rehabilitation services

- is effective in reducing total and cardiovascular mortality and hospital admissions in people with coronary heart disease[^1]
- reduces all-cause and cardiovascular mortality rates in patients after MI when compared with usual care provided when it includes an exercise component[^2]
- significantly reduces hospitalisation for chronic heart failure and significantly improves quality of life and exercise tolerance for people with heart failure[^3].

Traditionally the provision of cardiac rehabilitation has been described using phases 1 to 4 as mentioned in the National Service Framework for coronary heart disease (chapter 7). A more recent approach within the Department of Health’s commissioning pack on cardiac rehabilitation describes cardiac rehabilitation along a best practice care pathway using stages 0 to 6 to reflect core stages in the cardiac rehabilitation pathway (see section 2 of this guide).

Cardiac rehabilitation should be offered as a comprehensive package, including exercise, education and psychological support. It should not be regarded as an isolated form or stage of therapy, but be integrated within secondary prevention services. Cardiac rehabilitation services are no longer exclusively hospital based; emphasis is placed on helping patients become active self-managers of their condition. This can involve hospital-, home- and community-based cardiac rehabilitation programmes. Evidence suggests that home- and centre-based cardiac rehabilitation appear to be equally effective in improving the clinical and health-related quality of life outcomes in acute MI and revascularisation patients[^4]. Collaboration between primary and secondary care services is vital in order to achieve the best cardiac rehabilitation outcomes.

Currently, many people who might benefit do not receive adequate cardiac rehabilitation. The National Audit of Cardiac Rehabilitation 2010 indicates that referral to cardiac rehabilitation was almost entirely restricted to people in one of three diagnostic groups: those who had sustained a heart attack (MI, 39%), elective angioplasty (percutaneous coronary intervention [PCI], 28%) or coronary artery bypass surgery (CABG, 76%). Only 1% of patients recorded in the audit had a diagnosis of heart failure. The extent, nature and cost of provision varies dramatically around the country, with some services developing in a haphazard way with no core funding and relying on charitable donations and time 'borrowed' from various hospital departments.

There are also marked inequalities in the way people access the available services. Women, minority ethnic groups, the elderly and people with more severe CHD are all under-represented.
among users of rehabilitation services\(^1\). Furthermore, in many parts of the country those that are ready to start a rehabilitation programme may have to wait for several weeks\(^1\).

### 1.1 Commissioning for outcomes

Commissioners should refer to NICE clinical guideline 48 on MI: secondary prevention, NICE clinical guideline 94 on unstable angina and NSTEMI and NICE clinical guideline 108 on chronic heart failure and the NICE quality standard for chronic heart failure when commissioning services which contribute to delivering the following NHS outcomes (2011/12):

- preventing people from dying prematurely
- enhancing the quality of life for people with long-term conditions
- helping people to recover from episodes of ill health or following injury
- ensuring that people have a positive experience of care

### 1.2 Key clinical and quality issues

Key clinical and quality issues in providing effective cardiac rehabilitation are:

- **actively identifying all people** potentially eligible for cardiac rehabilitation and encouraging them to take part in cardiac rehabilitation
- **improving referral, uptake and completion of cardiac rehabilitation programmes**
- **comprehensive assessment of an individual**, including their need for cardiac rehabilitation
- **developing individualised plans to a person's needs** in line with NICE guidance and the British Association for Cardiac Rehabilitation document Standards and core components for cardiac rehabilitation
- **offering hospital-, community- or home-based programmes** in line with NICE guidance and evidence-based national programmes
- providing core components of the programme in line with the British Association for Cardiac Rehabilitation document Standards and core components for cardiac rehabilitation, including exercise, education, risk factor management and social and psychological support

- providing the best possible outcomes for individual people/patients, their carers and local communities

- providing a quality assured service (see section 6 within this guide).


2 An integrated approach to commissioning high-quality integrated cardiac rehabilitation

Commissioning cardiac rehabilitation services is fundamental to the wider commissioning strategy for cardiovascular disease and long-term conditions.

Commissioners should consider the whole care pathway for cardiovascular disease and long-term conditions when commissioning cardiac rehabilitation. They should also consider how cardiac rehabilitation services are integrated with primary care, secondary care and voluntary services and community services.

The long-term conditions workstream of the Quality, Innovation, Productivity and Prevention (QIPP) programme advocates a proactive generic management model of care for people with long-term conditions. Commissioners should ensure that people with cardiovascular disease and their carers have appropriate access to specialist, condition-specific information and support when indicated.

Commissioners should work with health and wellbeing boards, local authorities, primary care, acute and secondary care, community services and social care.

Commissioners should ensure joint working across health and social care using the generic long-term conditions model. They may also find the exemplar CQUIN goals on long-term conditions useful.

Commissioners may wish to work with service providers to carry out baseline assessment and clinical audit using NICE implementation support as follows:

- NICE audit support for NICE clinical guideline 48 on myocardial infarction
- NICE audit support for NICE clinical guideline 94 on unstable angina and NSTEMI
- NICE baseline assessment, audit support and electronic audit tool for NICE clinical guideline 108 on chronic heart failure

This will enable commissioners to identify where recommendations from NICE clinical guidelines have been implemented and highlight areas for improvement.
The Department of Health's commissioning pack on cardiac rehabilitation describes cardiac rehabilitation along a best practice care pathway using stages 0 to 6 to reflect core stages in the cardiac rehabilitation pathway as follows:

Stage 0 Identify and refer patient

Stage 1 Manage referral and recruit patient to cardiac rehabilitation programme

Stage 2 Assess patient for cardiac rehabilitation

Stage 3 Develop patient care plan

Stage 4 Deliver comprehensive cardiac rehabilitation programme

Stage 5 Conduct final assessment

Stage 6 Discharge and transition to long-term management

This guide offers an indicative population benchmark for cardiac rehabilitation and focuses on the following service components for cardiac rehabilitation (see section 4):

- identification and referral
- maximising participation and completion
- delivery of programme
- long term-management
- developing high-quality cardiac rehabilitation.
3 Assessing service levels for cardiac rehabilitation services

Available data suggest that the indicative benchmark rate for groups that may be suitable for referral for cardiac rehabilitation is:

- **0.3%**, or 300 per 100,000, population per year.
- For an **average GP practice** with a list size of 10,000, the average number of people requiring cardiac rehabilitation for the conditions below would be **30 per year** (0.3% of the population).

For the purpose of this benchmark the following conditions have been included for referral to cardiac rehabilitation:

- myocardial infarction (MI) including ST-segment-elevation myocardial infarction (STEMI) and non-ST-segment-elevation myocardial infarction (NSTEMI)
- percutaneous coronary intervention (PCI)
- coronary artery bypass graft (CABG)
- chronic heart failure
- implantable cardiac defibrillators (ICD)
- unstable angina.

See table 1 in section 3.5 for an expanded list of conditions that may be considered for a cardiac rehabilitation service.

Before commissioning cardiac rehabilitation service, commissioners should conduct a local needs assessment in order to determine local service levels.

The assumptions used in estimating a population benchmark rate for new referrals into a cardiac rehabilitation service are based on the following sources of information:
• hospital episode statistics data to establish the proportion of the population discharged alive per year following an acute admission for conditions that could require a cardiac rehabilitation service (see section 3.1)

• current practice: the proportion of the population identified in the community with newly identified unstable angina or other groups who may benefit from a cardiac rehabilitation service (see section 3.2)

• expert clinical opinion on best practice for a cardiac rehabilitation service given optimal service design (see section 3.3)

• published research on cardiac rehabilitation (see section 3.4)

• published guidance on the conditions for a cardiac rehabilitation service (see section 3.5).

Use the cardiac rehabilitation commissioning and benchmarking tool section within this guide (section 6) to determine the level of service that might be needed locally and to calculate the cost of commissioning the service using the indicative benchmark and/or your own local data. The commissioning and benchmarking tool includes a data specification to assist in identifying patient numbers at a local level.

### 3.1 Hospital episode statistics data

The 'Hospital episode statistics' (HES) database contains details of all admissions to NHS hospitals in England. It includes private patients treated in NHS hospitals, patients who were resident outside England and care delivered by treatment centres (including those in the independent sector) funded by the NHS.

The analysis of the data from HES suggests that in 2009/10 0.22% or 220 per 100,000 population were discharged alive following an acute admission for an MI and could therefore be given advice about and offered a cardiac rehabilitation programme with an exercise component.

HES analysis in 2009/10 for other patient groups that may be suitable for referral for cardiac rehabilitation following admission to hospital suggests that:

• 0.10%, or 100 per 100,000, were discharged alive following an emergency admission for chronic heart failure
• 0.01%, or 10 per 100,000 population, were discharged alive following PCI
• 0.07%, or 70 per 100,000 population, were discharged following a CABG
• 0.01%, or 10 per 100,000 population, were discharged following implant of an ICD.

People who had multiple admissions in the year and people who had more than one of the procedures and/or diagnoses were counted just once.

### 3.2 Current practice

Patients with unstable angina and chronic heart failure may be suitable for cardiac rehabilitation; however, patients with these conditions are underrepresented in the uptake of cardiac rehabilitation.

IMS disease analyzer, a sample of GP practice databases, shows that the annual incidence of newly diagnosed cases of unstable angina – that is, the detection rate of new cases – is 0.03% per year for patients aged 18 years or over in England. This is likely to be an underestimate of the need among this group, as many people with unstable angina will not have been previously offered cardiac rehabilitation.

The 2010 National Audit of Cardiac Rehabilitation revealed that only 1% of the patients referred to cardiac rehabilitation were referred because of chronic heart failure\[^8\]. A quarter of cardiac rehabilitation programmes still routinely exclude people with chronic heart failure and nearly a fifth exclude people with an implanted cardiac defibrillator or angina.

Other groups that may benefit from an expanded cardiac rehabilitation service include people who have received heart transplants. The rate of heart transplants in the population is small – around 100 transplants per year in the UK\[^9\]. There is also a small number, less than 100 per year, of hospital procedures for the implant or removal of ventricular assist devices (VAD)\[^10\].

Patients who have undergone cardiac resynchronisation therapy (CRT) or valve surgery for reasons other than myocardial infarction or chronic heart failure may also be considered for cardiac rehabilitation.
3.3 Expert clinical opinion

The consensus opinion of the topic advisory group was:

- on average, around 80–90% of people post-MI should be suitable for referral to a cardiac rehabilitation service, of which around 80% could optimally take up the offer, providing that current barriers are addressed

- the majority of people post revascularisation (CABG and PCI) and ICD implant would be suitable for referral for cardiac rehabilitation, and the take-up of those referred would be around 85%

- on average, around 70–80% of people with chronic heart failure would be suitable for cardiac rehabilitation, and the take-up of those referred would be around 60–80%

- the numbers of people presented within the commissioning and benchmarking tool and used to estimate the population benchmark may be an underestimate of the need, because some people may require more than one course of cardiac rehabilitation in the year.

The estimates on the take-up and referral of cardiac rehabilitation provided by the topic advisory group are based on best practice and are the proportions that could be achieved given optimal service design.

3.4 Published research

Poor referral, take-up and attendance have been identified as problems facing cardiac rehabilitation services in the UK[1,12]. There are several reasons for the lower than expected levels of participation. These include a lack of engagement (people not invited to attend cardiac rehabilitation), low levels of referral, scarcity of service provision, and poor take-up due to practical reasons (for example, location and time of the session).

The health technology assessment Provision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups suggested that take-up of cardiac rehabilitation could be improved by addressing the barriers to take-up (also see Specifying a cardiac rehabilitation service).
It is assumed that optimal service design would lead to an increase in take-up and attendance in cardiac rehabilitation, and that those services with current high levels of take-up and attendance may be operating closer to optimal service design. Optimal uptake and referral are examined further in table 3.

### 3.5 Published guidance

Cardiac rehabilitation is recommended in:

- NICE clinical guideline 48 on MI: secondary prevention
- NICE clinical guideline 108 chronic heart failure
- NICE clinical guideline 94 on unstable angina and NSTEMI

This is explored further in section 4.

NICE clinical guideline 126 on the management of stable angina contains no recommendations on cardiac rehabilitation. The guideline suggests that this is an area that requires further research.

Table 1 below sets out priority conditions for a cardiac rehabilitation service and table 2 sets out the conditions not considered within the benchmark.

### Table 1 Priority conditions for cardiac rehabilitation

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rationale for cardiac rehabilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial infarction</td>
<td>Cardiac rehabilitation (CR) is recommended in NICE clinical guideline 48</td>
</tr>
<tr>
<td>Chronic heart failure</td>
<td>CR is recommended in NICE clinical guideline 108</td>
</tr>
<tr>
<td>Acute coronary syndrome: unstable angina and NSTEMI</td>
<td>CR is recommended in NICE clinical guideline 94</td>
</tr>
</tbody>
</table>
Cardiac rehabilitation services

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary artery bypass graft</td>
<td>Suitability for CR confirmed by the topic advisory group for this guide for commissioners</td>
</tr>
<tr>
<td>Implant of a cardiac defibrillator</td>
<td>Suitability for CR confirmed by the topic advisory group for this guide for commissioners</td>
</tr>
</tbody>
</table>

Table 2 Conditions not considered within benchmark

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable angina</td>
<td>NICE clinical guideline 126 contains no recommendation on cardiac rehabilitation.</td>
</tr>
<tr>
<td>Heart transplants</td>
<td>Small number - less than 100 per year, individual clinical decision</td>
</tr>
<tr>
<td>Ventricular assist devices (VAD)</td>
<td>Small number - less than 100 per year, individual clinical decision</td>
</tr>
<tr>
<td>Cardiac resynchronisation therapy (CRT)</td>
<td>Limited current evidence for those not already included as part of the MI or CHF group, suitability can be determined on a case by case basis</td>
</tr>
<tr>
<td>Valve surgery</td>
<td>Limited current evidence for those not already included as part of the MI or CHF group, suitability can be determined on a case-by-case basis</td>
</tr>
</tbody>
</table>

Once trusts have an effective system for identifying, treating and following up people who have survived an MI, who have undergone coronary revascularisation or who have a diagnosis of chronic heart failure, commissioners may wish to consider extending cardiac rehabilitation services to include conditions suggested within the Department of Health's commissioning pack on cardiac rehabilitation, as detailed below.

The Department of Health's commissioning pack on cardiac rehabilitation (2010) advocates prioritising cardiac rehabilitation for people with a primary diagnosis of:

- acute coronary syndrome (ACS) which includes STEMI, NSTEMI and unstable angina (NICE clinical guideline 48; NICE clinical guideline 94); this should include all patients undergoing reperfusion (for example, CABG, PCI or PPCI)
chronic heart failure or new diagnosis of chronic heart failure with a step change in clinical presentation (NICE clinical guideline 108).

The Department of Health's commissioning pack states that people who have undergone surgery for ICD or cardiac resynchronisation therapy (CRT) or heart valve replacement and have a primary diagnosis of ACS or heart failure should also be included as high priority.

The Department of Health's commissioning pack states that as cardiac rehabilitation services develop and are successful with the high priority patients, services should be extended to include:

- heart transplant patients and patients with ventricular assist devices (VADs)
- patients who have undergone surgery for ICD therapy or CRT for reasons other than ACS or heart failure
- heart valve replacement patients for reasons other than ACS or heart failure
- patients with a confirmed diagnosis of exertional angina.

See also the National Service Framework for coronary heart disease (chapter 7).

3.6 Conclusion

Based on the epidemiological data and other information outlined above, it is concluded that 0.3% of the population would be suitable for referral to a cardiac rehabilitation service. This is based on the following assumptions (see also table 3):

- the percentages of the population discharged alive for MI, PCI, CABG, implant of an ICD, and chronic heart failure
- the suitability for cardiac referral and the expected optimal take-up of services as suggested by the topic advisory group
- the diagnosed incidence of unstable angina in the population.

Table 3 Assumptions used in the population benchmark for cardiac rehabilitation based on 2009/10 hospital activity data and expert clinical opinion
<table>
<thead>
<tr>
<th>Diagnosis/procedure</th>
<th>Percentage of population discharged alive in 2009/10</th>
<th>Percentage of discharged population suitable for cardiac rehabilitation referral</th>
<th>Percentage (optimal) of population suitable for referral who take up cardiac rehabilitation</th>
<th>Combination of referral and optimal take-up (percent) - that is, attendance</th>
<th>Percentage (optimal) of population who take up cardiac rehabilitation based on 2009/10 data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial infarction</td>
<td>0.22</td>
<td>85</td>
<td>80</td>
<td>68%</td>
<td>0.15</td>
</tr>
<tr>
<td>Percutaneous coronary intervention</td>
<td>0.01</td>
<td>100</td>
<td>85</td>
<td>85%</td>
<td>0.01</td>
</tr>
<tr>
<td>Coronary artery bypass graft</td>
<td>0.07</td>
<td>100</td>
<td>85</td>
<td>85%</td>
<td>0.06</td>
</tr>
<tr>
<td>Chronic heart failure</td>
<td>0.10</td>
<td>75</td>
<td>70</td>
<td>53%</td>
<td>0.05</td>
</tr>
<tr>
<td>Implant of a cardiac defibrillator</td>
<td>0.01</td>
<td>100</td>
<td>85</td>
<td>85%</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Therefore the population benchmark for a cardiac rehabilitation service is estimated to be **0.3%**.

Commissioners should use their local needs assessment to determine optimum levels for local service provision. Commissioners should note that the benchmark rates do not represent NICE's view of desirable, or maximum or minimum, service levels.

Commissioners should use this benchmark and local data to facilitate local discussion on optimum service levels. There is considerable variation in the prevalence and identification of people requiring a cardiac rehabilitation service. This is influenced by the social, economic and demographic profile of the local population; therefore commissioners are encouraged to consider local assumptions.
Use the cardiac rehabilitation commissioning and benchmarking tool to determine the level of service that might be needed locally and to calculate the cost of commissioning the service using the indicative benchmark and/or your own local data.


4 Specifying a cardiac rehabilitation service

Commissioning cardiac rehabilitation, underpinned by NICE guidance and the NICE quality standard for chronic heart failure, is likely to contribute to the achieving outcomes under domains 1, 2, 3 and 4 of the NHS Outcomes framework 2011/12 by:

- providing a comprehensive package of support including exercise, education and psychological support
- providing education and advice to enable people with cardiovascular disease to manage their own condition
- providing cardiac rehabilitation in a timely manner following an admission to hospital for myocardial infarction and cardiac revascularisation.

The key components of effective cardiac rehabilitation are:

- identification and referral (see section 4.1)
- maximising participation and completion (see section 4.2)
- delivery of programme (see section 4.3)
- long term-management (see section 4.4)
- developing a high-quality comprehensive cardiac rehabilitation service (see section 4.5)

Service models can be found in section 4.6.
4.1 Identification and referral

The identification and referral of people who are suitable for cardiac rehabilitation is an important step in providing an effective cardiac rehabilitation service. This is referred to as stage 0 within the Department of Health's commissioning pack on cardiac rehabilitation.

NICE clinical guideline 48 on MI, NICE clinical guideline 94 on unstable angina and NSTEMI and NICE clinical guideline 108 on chronic heart failure make the following recommendations on cardiac rehabilitation provided in below.

Table 4 Commissioning considerations of identification and referral

<table>
<thead>
<tr>
<th>NICE recommendation: CG48 on MI</th>
<th>Implications for commissioners: identification and referral</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1.1: All patients (regardless of age) should be given advice about and offered a cardiac rehabilitation programme with an exercise component</td>
<td>● Ensure people who have had an MI are included in the target population for cardiac rehabilitation</td>
</tr>
<tr>
<td></td>
<td>● Expect providers to make available high quality information regarding local cardiac rehabilitation for both referrers and potential participants</td>
</tr>
</tbody>
</table>
1.2.1.2: Cardiac rehabilitation programmes should provide a range of options, and patients should be encouraged to attend all those appropriate to their clinical needs. Patients should not be excluded from the entire programme if they choose not to attend certain components.

1.2.1.3: If a patient has cardiac or other clinical conditions that may worsen during exercise, these should be treated if possible before the patient is offered the exercise component of cardiac rehabilitation. For some patients, the exercise component may be adapted by an appropriately qualified healthcare professional.

| Inclusion and exclusion criteria should specify that people should be referred to cardiac rehabilitation programmes even if they choose not to attend certain components |
| Expect providers to demonstrate clear inclusion and exclusion criteria that includes clinical conditions that should be treated before exercise and those for which may be adapted |
| Specify the expected skill mix and competencies required by staff to be able to adapt the exercise component according to clinical need |

1.2.1.4 Patients with left ventricular dysfunction who are stable can safely be offered the exercise component of cardiac rehabilitation.

| This should be reflected within inclusion and exclusion criteria for the programme |
### NICE recommendation: CG94 on unstable angina and NSTEMI

1.5.10 Before discharge offer patients advice and information about:
- their diagnosis and arrangements for follow-up (in line with 'MI: secondary prevention', NICE clinical guideline 48)
- cardiac rehabilitation (in line with 'MI: secondary prevention', NICE clinical guideline 48)
- management of cardiovascular risk factors and drug therapy for secondary prevention (in line with 'MI: secondary prevention', NICE clinical guideline 48, and 'Lipid modification', NICE clinical guideline 67)
- lifestyle changes (in line with 'MI: secondary prevention', NICE clinical guideline 48)

1.5.11 Cardiac rehabilitation should be equally accessible and relevant to all patients after an MI, particularly people from groups that are less likely to access this service. These include people from black and minority ethnic groups, older people, people from lower socioeconomic groups, women, people from rural communities and people with mental and physical health comorbidities. (This recommendation is from 'MI: secondary prevention', NICE clinical guideline 48.)

### Implications for commissioners: identification and referral

- Ensure people with unstable angina and non-ST-segment-elevation myocardial infarction (NSTEMI) are included in the target population for cardiac rehabilitation
- Ensure there are no barriers to accessing the service for people amongst these groups

### NICE recommendation: CG108 on CHF

### Implications for commissioners: identification and referral
1.3.1.1: Offer a supervised group exercise-based rehabilitation programme designed for patients with heart failure.

- Ensure the patient is stable and does not have a condition or device that would preclude an exercise-based rehabilitation programme.
- Include a psychological and educational component in the programme.
- The programme may be incorporated within an existing cardiac rehabilitation programme.

- Ensure people with chronic heart failure are included in the local target population for cardiac rehabilitation.
- Expect providers to demonstrate clear inclusion and exclusion criteria that includes the conditions and devices that may preclude an exercise based programme.

**NICE Quality standard for chronic heart failure**

**Quality statement 8:** People with stable chronic heart failure and no precluding condition or device are offered a supervised group exercise-based cardiac rehabilitation programme that includes education and psychological support.

- As above

The conditions and devices that may preclude an exercise-based rehabilitation programme include: uncontrolled ventricular response to atrial fibrillation, uncontrolled hypertension, and high-energy pacing devices set to be activated at rates likely to be achieved during exercise (HF full guideline).

Commissioners should use the NICE guidance above to agree the conditions for which cardiac rehabilitation will be targeted and commissioned locally (see section 3 for further information).

For further information on prioritising cardiac rehabilitation, commissioners should refer to section 3 and may also wish to refer to the Department of Health's commissioning pack on cardiac rehabilitation.
The National audit of cardiac rehabilitation 2010 found that referral to cardiac rehabilitation was almost entirely restricted to people in one of three diagnostic groups: those who had sustained a heart attack (MI), elective angioplasty (PCI) or coronary artery bypass surgery (CABG). The audit indicates that 24% of programmes reported a policy of not accepting people with a diagnosis of heart failure. In order to meet the new recommendation made within NICE clinical guideline on chronic heart failure CG108 commissioners will therefore need to establish whether people with chronic heart failure are currently included within local cardiac rehabilitation programmes and assess local need, including:
4.2 Maximising participation and completion

Poor referral, uptake and attendance have been identified as problems facing cardiac rehabilitation services in the UK.

The National Service Framework for coronary heart disease suggested that 85% of patients who have had an MI, PCI or CABG should be offered cardiac rehabilitation. The report of the National audit of cardiac rehabilitation 2010 indicates uptake rates demonstrated in table 5 below.

Table 5 Current uptake of cardiac rehabilitation in England[^1]

<table>
<thead>
<tr>
<th>Condition</th>
<th>No. of cases</th>
<th>No. of cases receiving cardiac rehabilitation</th>
<th>% Current uptake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial infarction</td>
<td>76,112</td>
<td>30,128</td>
<td>40</td>
</tr>
<tr>
<td>Percutaneous coronary intervention</td>
<td>30,318</td>
<td>8,813</td>
<td>29</td>
</tr>
<tr>
<td>Coronary artery bypass surgery</td>
<td>16,740</td>
<td>12,681</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>123,170</strong></td>
<td><strong>51,622</strong></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>

Collaboration between primary and secondary care services is vital in order to achieve the best cardiac rehabilitation outcomes. Limited communication between providers of cardiac rehabilitation and referrers may affect referral. Commissioners may wish to specify processes for improved integration between services.

There are several reasons for the lower than expected levels of participation. These include:

- lack of availability of a cardiac rehabilitation programme
- a lack of endorsement by health professionals
- low levels of referral to cardiac rehabilitation
- lack of knowledge regarding the benefits of cardiac rehabilitation
poor take-up due to practical reasons (for example, location and time of the session)

- waiting times to commence a programme

- insufficient choices and lack of flexibility offered by cardiac rehabilitation programmes.

The health technology assessment 'Provision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups' identifies barriers to uptake and adherence and suggested that take-up of cardiac rehabilitation could be improved by addressing barriers to uptake.

Waiting times for a programme may also influence uptake. Commissioners should be aware that there is limited guidance or evidence to support the optimal timing of entry to a cardiac rehabilitation programme. Expert opinion and current practice suggests that the optimal time to commence cardiac rehabilitation varies according to diagnosis and is set out in table 6.

Table 6 Optimal time to commence cardiac rehabilitation

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Optimal time to commence cardiac rehabilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial infarction</td>
<td>In hospital or as soon after diagnosis as possible.</td>
</tr>
<tr>
<td>Unstable angina or non-ST-segment-elevation myocardial infarction</td>
<td>In hospital or as soon after diagnosis as possible (recommendation 1.5.10 in NICE clinical guideline 94).</td>
</tr>
<tr>
<td>Coronary artery bypass graft</td>
<td>Information on cardiac rehabilitation should be given within pre-operative clinic or in hospital before surgery.</td>
</tr>
<tr>
<td></td>
<td>Education and physical activity advice starts immediately post surgery; 6 weeks post surgery before formal exercise sessions commence.</td>
</tr>
<tr>
<td>Angioplasty: percutaneous coronary intervention (PCI) and primary percutaneous coronary intervention (PPCI)</td>
<td>Information on cardiac rehabilitation should be given within pre-operative clinic (PCI) or in hospital before surgery (PPCI). Programme to commence 2 weeks after procedure.</td>
</tr>
</tbody>
</table>
Chronic heart failure | New diagnosis or step-change in clinical presentation[^1].


The National Service Framework for coronary heart disease provides examples of investigations and interventions that should be offered during a hospital admission (referred to as phase 1).

NICE clinical guideline 48 on MI: secondary prevention makes the following recommendations that relate to improving engagement and uptake of cardiac rehabilitation, within section 1.2.2 on patient engagement, and which can be found in table 7.

Table 7 Commissioning considerations for maximising participation and completion

| NICE recommendation: CG48 on MI | Implications for commissioners: maximising participation and completion |
1.2.2.1: Cardiac rehabilitation should be equally accessible and relevant to all patients after an MI, particularly people from groups that are less likely to access the service. These include people from black and minority ethnic groups, older people, people from lower socioeconomic groups, women, people from rural communities and people with mental and physical health comorbidities.

| • Work with clinicians to ensure that people suitable for cardiac rehabilitation post-acute MI will be systematically identified during hospital admission |
| • Assess the needs of the local population |
| • Where necessary specify that single-sex sessions are available and that written information in an appropriate language is available for groups within the local population |
| • Ensure that CR sessions are accessible by public transport and located close to home |
1.2.2.2 Healthcare professionals should take into account patients' wider health and social needs, which may involve identifying and addressing economic, welfare rights, housing or social support issues. There may be a particular issue for patients in more deprived circumstances, and rehabilitation services should assess the likely scale of these needs when planning how their services meet the needs of the local population.

- Assess the needs of the local population, including the cost impact for participants of attending cardiac rehabilitation, e.g. public transport and car parking
- Specify that programmes assess and support people's needs in this area and are able to refer for appropriate support e.g. social services assessment, carer's assessment, benefits

<table>
<thead>
<tr>
<th>1.2.2.3 Cardiac rehabilitation should be culturally sensitive. Employing bilingual peer educators or cardiac rehabilitation assistants who reflect the diversity of the local population should be considered.</th>
<th>1.2.2.5: Healthcare professionals should ask patients whether they would prefer single-sex classes or mixed classes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assess the needs of the local population</td>
<td>• Assess demand for single-sex classes, including exercise sessions and preference for single-sex education sessions on certain topics</td>
</tr>
<tr>
<td>• Where necessary commission appropriate support for people for whom English is not a first language</td>
<td>1.2.2.5: Healthcare professionals should ask patients whether they would prefer single-sex classes or mixed classes.</td>
</tr>
<tr>
<td>Healthcare professionals, including senior medical staff involved in providing care for patients after an MI, should actively promote cardiac rehabilitation.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>• Expect providers to demonstrate how cardiac rehabilitation is promoted locally, including the availability of high quality written information.</td>
<td></td>
</tr>
<tr>
<td>• Consider use of a CQUIN to incentivise referral to cardiac rehabilitation from secondary care during an admission to hospital for acute myocardial infarction.</td>
<td></td>
</tr>
<tr>
<td>• Specify that cardiac rehabilitation services should monitor referral sources and target promotional activity and information to teams/services that are under-referring.</td>
<td></td>
</tr>
</tbody>
</table>
1.2.2.8: Reminders such as:
   a. telephone calls
   b. telephone calls in combination with direct contact from a healthcare professional
   c. motivational letters
should be used to improve uptake of cardiac rehabilitation

- Expect providers to demonstrate how people are supported to join and persevere with cardiac rehabilitation programmes, including use of reminders as recommended
- Specify within the service specification how uptake, retention and completion will be monitored and set target uptake and completion rates

Where cardiac rehabilitation services have been adequately resourced and where they have systematically identified people and adopted a structured approach to their work, the numbers of people treated have increased[^14].


4.3 Delivery of programme

Cardiac rehabilitation should be offered as a structured, comprehensive package of support that includes exercise, education and psychological support. The programme should be tailored to the needs of each patient based on a comprehensive assessment of their cardiac risks and individual goals.

The British Association for Cardiovascular Prevention and Rehabilitation document ‘Standards and core components for cardiac rehabilitation’ (review date 2011) sets out the core components of a cardiac rehabilitation programme as follows:

- lifestyle
  - physical activity and exercise
  - diet and weight management
  - smoking cessation

- education

- risk factor management

- psychosocial

- cardio protective drug therapy and implantable devices

- long-term management strategy.

Participants should be encouraged to attend all components appropriate to their clinical needs and should not be excluded from the entire programme if they choose not to attend certain components.

Delivery of programme components should be preceded by an initial medical assessment to determine a person's individual needs, goals, medical risk factors and limitations. Assessment should also take place at the end of a programme to review a person's progress and ongoing needs.
The Department of Health's commissioning pack on cardiac rehabilitation emphasises the importance of assessment and care planning prior to the delivery of a cardiac rehabilitation programme (stage 2 and 3). Information on assessment can also be found within the British Association for Cardiovascular Prevention and Rehabilitation document Standards and core components for cardiac rehabilitation.

NICE clinical guidelines 48 on myocardial infarction and 108 on chronic heart failure make clear recommendations regarding the content of cardiac rehabilitation programmes:

Table 8 Commissioning considerations for the delivery of a cardiac rehabilitation programme

<table>
<thead>
<tr>
<th>NICE recommendation: CG48 on MI</th>
<th>Implications for commissioners: delivery or programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1.1: All patients (regardless of age) should be given advice about and offered a cardiac rehabilitation programme with an exercise component.</td>
<td>• Expect providers to demonstrate provision of exercise as part of comprehensive package of support. • Commission exercise components in a number of different ways (see 1.2.3.2 below).</td>
</tr>
<tr>
<td>1.2.2.4 Cardiac rehabilitation programmes should include an exercise component designed to meet the needs of older patients or patients with a significant morbidity. Any transport problems should be addressed.</td>
<td>• Specify the skills and competencies required by staff prescribing and providing the exercise component of the programme (see BACR Exercise Professionals Group (EPG) Position Statement 2010: Essential competences and minimum qualifications required to lead the exercise component in early cardiac rehabilitation).</td>
</tr>
<tr>
<td>1.2.3.1: Comprehensive cardiac rehabilitation programmes should include health education and stress management components.</td>
<td>• Expect providers to demonstrate a menu-based approach that covers all components recommended by the clinical guideline and allows participants to choose components relevant to their individual needs.</td>
</tr>
<tr>
<td>1.2.4.1: Stress management should be offered in the context of comprehensive cardiac rehabilitation.</td>
<td>• Refer to NICE clinical guidelines CG91 Depression with chronic physical health problem; CG113 on anxiety and CG90 on depression in adults for further guidance.</td>
</tr>
<tr>
<td>1.2.4.2 Complex psychological interventions such as cognitive behavioural therapy should not be offered routinely.</td>
<td>• Expect providers to demonstrate that an accredited home-based programme is available for people who have had an MI.</td>
</tr>
<tr>
<td>1.2.4.3 There should be provision to involve partners or carers in the cardiac rehabilitation programme if the patient wishes.</td>
<td>• Home-based programmes should be offered to patients as part of a menu-based approach and should be offered as an alternative choice to a hospital or community based programme.</td>
</tr>
<tr>
<td>1.2.3.2 A home-based programme for patients who have had an MI such as the Edinburgh heart manual; see <a href="http://www.cardiacrehabilitation.org.uk/heart_manual/heartmanual.htm">www.cardiacrehabilitation.org.uk/heart_manual/heartmanual.htm</a> that incorporates education, exercise and stress management components with follow-ups by a trained facilitator may be used to provide comprehensive cardiac rehabilitation.</td>
<td>• The term 'home-based programme' is applied to a variety of methods but any programme purchased should have a published evidence base and attend to lifestyle change and psycho-social adjustment.</td>
</tr>
</tbody>
</table>
1.2.3.3 Most patients who have had an MI can return to work. Any advice should take into account the physical and psychological status of the patient, the nature of the work and the work environment.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Recommendations 1.2.5.1 – 1.2.5.5 on sexual activity including 1.2.5.3 the subject of sexual activity</th>
</tr>
</thead>
</table>

- Specify that programmes provide people with information and education regarding return to work, and help to access further support where appropriate.
- See also [www.nice.org.uk/ph19](http://www.nice.org.uk/ph19)

**NICE recommendation:** [CG108 on chronic heart failure](http://www.nice.org.uk/cg108)  

**Implications for commissioners:** delivery or programme

1.3.1.1 Offer a supervised group exercise-based rehabilitation programme designed for patients with heart failure.

- Ensure the patient is stable and does not have a condition or device that would preclude an exercise-based rehabilitation programme.
- Include a psychological and educational component in the programme.
- The programme may be incorporated within an existing cardiac rehabilitation programme. [new 2010]

- Expect providers to demonstrate a menu-based approach that covers all components recommended by the clinical guideline and allows participants to choose components relevant to their individual needs.
- Consider the advantages and disadvantages locally of including programmes for people with chronic heart failure within existing evidence-based programmes, including the preferences of service users, staff competencies.

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\(^{\text{a}}\) The conditions and devices that may preclude an exercise-based rehabilitation programme include: uncontrolled ventricular response to atrial fibrillation, uncontrolled hypertension, and high-energy pacing devices set to be activated at rates likely to be achieved during exercise.
Commissioners should be aware that there is currently limited evidence to support home-based cardiac rehabilitation programmes for people with chronic heart failure. However, commissioners may wish to take account of emerging evidence. Commissioners may wish to consider how cardiac rehabilitation for people with chronic heart failure is provided as part of a menu-based approach for people who are unable to, or do not wish to, attend a group-based programme. A menu-based programme should incorporate the core components recommended by the British Association for Cardiovascular Prevention and Rehabilitation document Standards and core components for cardiac rehabilitation.

A cardiac rehabilitation programme should be offered using a menu-based approach and tailored to the individual needs of a wide range of people with a variety of clinical conditions. Therefore expert opinion suggests that there is the duration or frequency recommended for cardiac rehabilitation should not be standardised and should be based on the assessment of the individual patient's needs.
4.4 Long-term management

Commissioners should ensure that a range of local schemes and services are available to support long-term management and secondary prevention of cardiovascular disease, and that these services are able to support people through lifestyle changes as recommended in NICE clinical guidelines CG48 on myocardial infarction and CG108 on chronic heart failure. This has previously been referred to as phase 4 and is referred in stage 6 within the Department of Health's commissioning pack on cardiac rehabilitation.

The British Association for Cardiovascular Prevention and Rehabilitation 'Standards and core components for cardiac rehabilitation' includes long-term management as a component of cardiac rehabilitation and highlights two aspects to long-term management:

- the individual patient's responsibility
- the continuation of health care provision.

Commissioners should specify that pathways are in place to provide and monitor ongoing care for people following completion of a cardiac rehabilitation programme.

This may include:

- risk factor management, including blood pressure, lipids and glucose (see also 'Lipid modification', NICE clinical guideline 67)
- monitoring of cardioprotective drug therapies and devices
- community-based programmes, commonly referred to as phase 4 cardiac rehabilitation groups
- leisure centre membership, using existing exercise on referral or discounted membership schemes where available and with appropriately trained and competent exercise instructors
- other community exercise and physical activity groups, such as health walks
- cardiac support group activities
- weight management and healthy eating services
• 'stop smoking' support.

Encouraging people with long-term conditions to manage their own health is a key element of the generic long-term conditions model and long-term conditions workstream of the QIPP programme. Long-term management following a cardiac rehabilitation programme should aim to empower people to continue to manage their own health, accessing services and support according to individual needs.
4.5 Developing a high-quality comprehensive cardiac rehabilitation service

Multidisciplinary care

The British Association for Cardiovascular Prevention and Rehabilitation recommends a multidisciplinary approach to cardiac rehabilitation consisting of trained and competent staff (see Standards and core components for cardiac rehabilitation).

The BACR Standards and Core Components for Cardiac Rehabilitation update (July 2009): Staffing of Cardiac Rehabilitation (CR) programmes advocates a coordinator who has overall responsibility for the CR service and a core team of professionally qualified staff with appropriate skills and competencies to deliver the service.

The standards emphasise that all core team members treating and managing patients should be professionally qualified, work within their professional scope of practice and have evidence-based professionally verified cardiac rehabilitation education, training and competencies.

Anxiety and depression

Heart attacks or other cardiac conditions can lead to disabling and distressing symptoms. Patients can become socially isolated and have to give up activities that they enjoy. These factors may lead to the development of anxiety and depression.

NICE clinical guideline 48 on MI recommends:

- For recommendations on the management of patients with clinical anxiety and/or depression, refer to 'Anxiety' (NICE clinical guideline 22)\(^{[15]}\) and 'Depression' (NICE clinical guideline 23)\(^{[16]}\) (recommendation 1.2.4.4)

NICE clinical guideline CG108 on chronic heart failure recommends that:

- The diagnosis of depression should be considered in all patients with heart failure. \([2003]\) (recommendation 1.5.8.1)
• Where depression is likely to have been precipitated by heart failure symptoms then reassessment of psychological status should be undertaken once the physical condition has stabilised following treatment for heart failure. If the symptoms have improved no further specific treatment for depression is required. [2003] (recommendation 1.5.8.2)

• Where it is apparent that depression is co-existing with heart failure, then the patient should be treated for depression in line with 'Depression: the treatment and management of depression in adults' (NICE clinical guideline 90) and 'Depression in adults with a chronic physical health problem: treatment and management' (NICE clinical guideline 91). [2003] (recommendation 1.5.8.3)

The NICE quality standard for depression in adults includes a number of quality statements relating to the assessment of depression and provision of psychological therapy for people with a chronic physical health problem.

Commissioners should specify that staff providing cardiac rehabilitation programmes are competent to identify anxiety and depression and are able to support people to self manage or refer them to the right service. See NICE commissioning guide on common mental health disorder services for further information.

[15] Now replaced by 'Anxiety: Generalised anxiety and panic disorder (with or without agoraphobia) in adults' NICE clinical guideline 113

[16] Now replaced by 'Depression: the treatment and management of depression in adults' NICE clinical guideline 90
4.6 Service models

Quality, innovation, productivity and prevention

Commissioners may wish to work with their local Quality, Innovation, Productivity and Prevention (QIPP) lead to develop service models for cardiac rehabilitation. Example outputs for delivering QIPP through cardiac rehabilitation may include:

- increasing the proportion of people with targeted conditions referred to and completing cardiac rehabilitation
- increasing the proportion of people completing cardiac rehabilitation provided with self-management plans.

Commissioning for quality and innovation

Commissioners may wish to consider working with clinicians when using the Commissioning for Quality and Innovation (CQUIN) payment framework as a lever for service change. For example:

- inclusion of referral to cardiac rehabilitation as a clinical process measure or discharge bundle as part of a CQUIN scheme for myocardial infarction and/or heart failure
- assessment of achievement of goals achieved to determine whether patients have achieved their goals at point of discharge.

Case studies

Commissioners may wish to refer to examples of cardiac rehabilitation programmes and services. Examples are included in table 9.

Commissioners may wish to consider commissioning a cardiac rehabilitation service in a number of different ways, and mixed models of provision may be appropriate across a local health economy. Primary care trusts, local authorities and the voluntary sector should agree the range and availability of services that can be drawn on for cardiac rehabilitation.

Commissioners may also wish to collaborate with their local cardiac network to ensure a strategic approach to service development.
Table 9 Examples of service models cardiac rehabilitation

<table>
<thead>
<tr>
<th>Theme</th>
<th>Case study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification and assessment</td>
<td>• Systematic identification and assessment of patients admitted to hospital with suspected MI by a cardiac liaison nurse and referral to cardiac rehabilitation</td>
</tr>
</tbody>
</table>
| Integrated care              | • A cardiac rehabilitation service in Cornwall demonstrated that national service framework targets for cardiac rehabilitation and secondary prevention can be achieved in patients who survive an MI by integrating rehabilitation services (home and hospital) with secondary prevention clinics in primary care. Nurse led clinics in primary care facilitate long-term structured care and optimal secondary prevention. Payments for these clinics are now included in the new GP contract as part of the quality and outcomes framework.  
  • Royal Free Hampstead NHS Trust: In and outpatient cardiac rehabilitation services |
| Long-term management         | • Phase IV cardiac rehabilitation classes in Bracknell  
  • Phase IV cardiac rehabilitation in Sussex |
| Return to work               | • Vocational rehabilitation project: North West London Cardiac Rehabilitation and Stoke Network (See Cardiac Rehabilitation - National Priority Projects: Lessons and learning one year on) |

A number of examples of service development can also be found at NHS Improvement: Heart.

(Please note – these examples are offered to share good practice and NICE makes no judgement on the compliance of these services with its guidance.)
5 Service specification for cardiac rehabilitation

Commissioners should collaborate with clinicians, local stakeholders, and service users when determining what is needed from services for people attending cardiac rehabilitation in order to meet local needs. The care pathway should be person/patient-centred and integrated with other elements of care for people/patients with cardiovascular disease and other long-term conditions.

Commissioners may wish to consider commissioning cardiac rehabilitation in a number of different ways, and mixed models of provision are likely to be appropriate within a local area. Commissioners may wish to take action to stimulate the local market if there are identified shortages of providers at any point in the pathway, and should note that any qualified providers may include health, local authority, other statutory partners, private or third sectors.

Commissioners should ensure that providers implement the recommendations stipulated in NICE guidance and that providers are taking steps to achieve the standards set out in NICE quality standard for chronic heart failure.

Commissioners should ensure the services they commission represent value for money and offer the best possible outcomes for their service users. Commissioners should refer to the NICE quality standards for chronic heart failure when commissioning services and should include quality statements and measures within the service specification element of the standard contract where appropriate. If poor performance is identified, commissioners can discuss the level of performance with their providers and address any issues and concerns before introducing more formal contractual remedies.

Commissioners may choose to use quality standards to ensure that high-quality care is being commissioned through the contracting process, to establish key performance indicators as part of a tendering process and/or to incentivise provider performance by using the indicators in association with incentive payments such as Commissioning for Quality and Innovation (CQUIN).

Commissioners should ensure that they consider both the clinical and cost effectiveness of the service, and any related services, and take into account clinicians’ and patients' views and those of other stakeholders when making commissioning decisions.

includes considerations for commissioners when developing a contract specification for cardiac rehabilitation.
# Table 10 Considerations for contract specification for cardiac rehabilitation

<table>
<thead>
<tr>
<th>Heading</th>
<th>Section</th>
<th>To be described in service specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Policy context</td>
<td>- Evidence base, for example NICE guidance and Quality standards, NHS evidence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- National policy drivers for cardiac rehabilitation including the National Service Framework for coronary heart disease</td>
</tr>
<tr>
<td></td>
<td>Local strategic context</td>
<td>- Local commissioning drivers (for example, reducing hospital admissions and length of stay, QIPP, CQUIN).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Results of joint strategic needs assessment (JSNA).</td>
</tr>
<tr>
<td></td>
<td>Aims and objectives of service</td>
<td>- The expected outcomes of the service(s).</td>
</tr>
<tr>
<td><strong>Service scope</strong></td>
<td>Define service user groups</td>
<td>- Demographic profile of the local population (age, gender, ethnicity, socio-economic status).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Conditions to be targeted by local cardiac rehabilitation programmes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Local recorded and expected prevalence of conditions to be targeted by local cardiac rehabilitation programmes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Estimated prevalence of comorbidities (for example, hypertension, stroke, chronic obstructive pulmonary disease, depression).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Evidence of inequalities in outcomes between specific groups.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Number of wholly attributable and partially attributable MI and chronic heart failure-related hospital admissions, bed days and readmissions.</td>
</tr>
<tr>
<td>Exclusion criteria</td>
<td>Define exclusion criteria for service(s) in accordance with NICE guidance and locally determined criteria.</td>
<td></td>
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<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
| Geographical population | • Proportion of people living in urban and/or rural areas.  
• Areas of higher-than-average need – for example, areas of deprivation and areas with a high population of older people.  
• Population coverage required or geographical boundaries. |
| Service description / care package | • Mapping existing cardiac rehabilitation services.  
• Commissioning of core service components.  
• Interface with other local services including weight management services, smoking cessation, leisure services. |
| Location | • Service location(s), defining accessibility requirements and discreet location(s).  
• Integration with other services for people with cardiovascular disease.  
• Home-based, locality based services and centrally based services. |
| Days/hours | • Expected hours of operation, including days, evenings and weekends where appropriate.  
• Expected number of patients, taking into account potential increased flow through the system over defined periods |
### Referral processes
- Referral criteria and processes.
- Management of 'unable to attend' (UTAs) and 'did not attends' (DNAs).
- Processes to maximise referral and uptake.

### Response times
- This should be needs-based and outcomes-based.
- Setting specific times – for example, response to referral, waiting times for assessment and to commence programme.

### Care pathways
- Agreed clinical protocols or guidelines to support decision-making in the patient pathway.
- Use of third sector – for example, leisure facilities.
- Care coordination.

### Discharge processes
- Process for discharge from cardiac rehabilitation, including long-term disease management.

### Staffing
- Profile of existing health and social care workforce.
- Staffing levels to be funded: minimum band or levels of level of experience and competency and expected skill mix.

### Information sharing
- Define information sharing, confidentiality and audit requirements, including IT support and infrastructure.
- Raising awareness of cardiac rehabilitation. Do patients and health and social care professionals know how to access services?
### Patient and public involvement

- Processes to understand patient experience of cardiac rehabilitation in order to develop and monitor services.
- Expectations of how patient opinion, preference and experience will be used to inform service delivery for example, focus groups, representation on working groups, and surveys.
- Monitoring of complaints and complements and how they are used to inform service.

### 1. Quality indicators

- Use NICE quality standards to define high-quality care.
- Patient satisfaction surveys on services and access to treatment.
- Define outcomes and (proxy) measures, including uptake, adherence and completion rates.

### Performance monitoring

- Impact of service(s) on admissions to 'Accident and Emergency' departments, inpatient hospital care and length of stay in hospital.

### Equality

- Measures to ensure equality of access to services, taking into account the risks of unintentional discrimination against groups who are often under-represented, such as people who do not speak English as a first language.
- Consider equity of access for people living within residential homes and those who are housebound; or people within prisons.
### Staff training and competency

- Training and competencies on recruitment and for ongoing development.
- Skill mix and competencies required across the care pathway, including competencies in: assessment, behavioural change and motivational interview, personalised care planning, provision of exercise and identifying palliative care needs. See [Skills for Health](#) for examples.
- See BACR Exercise Professionals Group (EPG) Position Statement 2010: Essential competences and minimum qualifications required to lead the exercise component in early cardiac rehabilitation
- Staff development – appraisal and personal development plans, and mandatory training.

### Audit

- Specify expectations for regular clinical audit, including reporting arrangements, which may include the National Audit of Cardiac Rehabilitation which has been adapted to capture key rehabilitation processes and clinical outcomes.
- See [audit support](#) and [electronic audit tool](#) for NICE clinical guideline CG108 and audit support for CG48.
- See also [audit criteria for NICE public health guidance PH1 on brief interventions and referral for smoking cessation; NICE audit support for smoking cessation services; and NICE audit support for CG91 on depression with a chronic physical health problem](#).

### Staff and patient safety

- Procedures for risk assessment.
- Formal procedures for incident reporting and monitoring.
- Address any safeguarding concerns and promote the welfare of vulnerable adults.
<table>
<thead>
<tr>
<th>Activity plan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Long-term impact of increased access to improved assessment and diagnosis on referrals to other services, hospital admissions and bed days.</td>
</tr>
<tr>
<td></td>
<td>● Planned service development setting out any productivity improvements.</td>
</tr>
<tr>
<td></td>
<td>● Capture of information relating to outpatient cardiac rehabilitation activity using treatment function code 327.</td>
</tr>
<tr>
<td></td>
<td>Cardiac Rehabilitation: Rehabilitation service for patients with or recovering from heart related conditions such as heart attacks or from procedures such as coronary artery bypass surgery to ensure that they achieve their full potential in terms of physical and psychological health.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost</th>
<th>Value for money</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Likely cost of new or additional services.</td>
</tr>
<tr>
<td></td>
<td>● Anticipated set-up costs.</td>
</tr>
<tr>
<td></td>
<td>● Anticipated savings from reduction in admissions.</td>
</tr>
<tr>
<td></td>
<td>● How will pricing be set?</td>
</tr>
<tr>
<td></td>
<td>● Potential for better value for money.</td>
</tr>
<tr>
<td></td>
<td>● Are patients receiving most appropriate services?</td>
</tr>
<tr>
<td></td>
<td>● Cost of facilities, for example venue hire</td>
</tr>
<tr>
<td></td>
<td>● Cost of staff travel to services and patients' homes.</td>
</tr>
<tr>
<td></td>
<td>● See the commissioning and benchmarking tool for further information.</td>
</tr>
</tbody>
</table>
6 The commissioning and benchmarking tool

Download the cardiac rehabilitation services commissioning and benchmarking tool

Use the commissioning and benchmarking tool for cardiac rehabilitation to determine the level of service that might be needed locally and to calculate the cost of commissioning the service, as described below.

6.1 Identify indicative local service requirements

Available data suggest that the indicative benchmark rate for groups that may be suitable for referral for cardiac rehabilitation is:

- **0.3%**, or 300 per 100,000, population per year.
- For an *average GP practice* with a list size of 10,000, the average number of people requiring cardiac rehabilitation for the above conditions would be 30 per year (0.3% of the population).

For the purpose of this benchmark the following conditions have been focused on:

- myocardial infarction (MI) including STEMI and NSTEMI
- percutaneous coronary intervention (PCI)
- coronary artery bypass graft (CABG)
- chronic heart failure
- implantable cardiac defibrillators (ICD)
- unstable angina.

The commissioning and benchmarking tool helps you to assess local service requirements using the indicative benchmark as a starting point. With knowledge of your local population and its demographic, you can amend the benchmark to better reflect your local circumstances. For example, if your population is significantly younger or older than the average population, or has an ethnic composition different from the national average, or has a significantly higher or lower
rate of the conditions above, you may need to provide services for relatively fewer or more people.

6.2 Review current commissioned activity

You may already commission a cardiac rehabilitation service for your population. The tool provides tables that you can populate to help you calculate your total current commissioned activity and costs.

6.3 Identify future change in capacity required

Using the indicative benchmark provided, or your own local benchmarks, you can use the commissioning and benchmarking tool to compare the activity that you might need to commission against your current commissioned activity. This will help you to identify the future change in capacity required. Depending on your assessment, your future provision may need to be increased or decreased.

6.4 Model future commissioning intentions and associated costs

You can use the commissioning and benchmarking tool to calculate the capacity and resources needed to move towards the benchmark level, and to model the required changes over a period of 4 years.

Use the tool to calculate the level and cost of activity you intend to commission. The tool is pre-populated with data on the potential recurrent and non-recurrent cost elements that may need to be considered in future service planning, which can be reviewed and amended to better reflect your local circumstances.

Commissioning decisions should consider both the clinical and economic viability of the service, and take into account the views of local people. Commissioning plans should also take into account the costs of monitoring the quality of the services commissioned.
6.5 Potential savings

Participating in cardiac rehabilitation reduces the risk of being admitted to hospital for people with heart failure.

You can use the commissioning and benchmarking tool to calculate the potential savings associated with a service for cardiac rehabilitation.
7 Further information

Table 11 summarises national drivers that are relevant to commissioning cardiac rehabilitation services.

### Table 11 National policy relating to cardiac rehabilitation

<table>
<thead>
<tr>
<th>Document</th>
<th>Author</th>
<th>Year</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Outcomes Framework 2011/12</td>
<td>Department of Health</td>
<td>2011</td>
<td>Domains 1, 2, 3 and 4.</td>
</tr>
<tr>
<td>Quality, innovation prevention and productivity (QIPP)</td>
<td>Department of Health</td>
<td>2011</td>
<td>The workstream on long-term conditions is of particular relevance when commissioning cardiac rehabilitation.</td>
</tr>
<tr>
<td>Liberating the NHS: legislative framework and next steps</td>
<td>Department of Health</td>
<td>2011</td>
<td>Describes in detail how reforms of the NHS will be put into practice, including the development of NICE quality standards.</td>
</tr>
<tr>
<td>NHS operating framework for 2011/12</td>
<td>Department of Health</td>
<td>2011</td>
<td>Sets out the role of PCT clusters in oversee management and implementation of medium term QIPP plans.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sets out some of the mechanisms to support reform of the NHS including the NHS Outcomes Framework and extension of quality accounts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sets out some of the mechanisms to support reform of the NHS including the NHS Outcomes Framework and extension of quality accounts.</td>
</tr>
<tr>
<td>Using the Commissioning for Quality and Innovation (CQUIN) payment</td>
<td>Department of Health</td>
<td>2010</td>
<td>Makes a proportion of providers' income conditional on quality and innovation.</td>
</tr>
<tr>
<td>framework – a summary guide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department of Health's commissioning pack on cardiac rehabilitation</td>
<td>Department of Health</td>
<td>2010</td>
<td>Includes a service specification, and procurement and contracting tools to support the commissioning of cardiac rehabilitation.</td>
</tr>
</tbody>
</table>
Coronary heart disease: national service framework for coronary heart disease - modern standards and service models

Department of Health 2000
Chapter 7 sets out standards and milestones for cardiac rehabilitation.

Additional resources

Commissioners may also find the resources in table 12 useful when commissioning cardiac rehabilitation services.

Table 12 Additional resources for commissioning cardiac rehabilitation

<table>
<thead>
<tr>
<th>Document or web page</th>
<th>Source</th>
<th>Year</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic heart failure pathway</td>
<td>NICE</td>
<td>2011</td>
<td>Provides a visual representation of NICE guidance on chronic heart failure.</td>
</tr>
<tr>
<td>NHS Improvement: heart</td>
<td>NHS Improvement</td>
<td>Various</td>
<td>Part of NHS Improvement's Heart Team, the Cardiac Rehabilitation (CR) workstream aims to support clinicians, commissioners, providers and patients to deliver effective clinical practice through service improvement and redesign.</td>
</tr>
<tr>
<td>Cardiac rehabilitation</td>
<td>Supported by the British Heart Foundation</td>
<td>n/a</td>
<td>Provides names and addresses of cardiac rehabilitation services throughout the UK.</td>
</tr>
<tr>
<td>Commissioning of cardiac services – a resource pack from the British Cardiovascular Society</td>
<td>British Cardiovascular Society</td>
<td>2011</td>
<td>Provides a summary of existing standards and guidelines that can be used as a basis for commissioning decisions</td>
</tr>
<tr>
<td>Title</td>
<td>Organisation/Authors</td>
<td>Year</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Heart disease and South Asians: delivering the national service framework for coronary heart disease’</td>
<td>British Heart Foundation and Department of Health</td>
<td>2004</td>
<td>Focuses on work which aims to improve services for South Asian people, who are 50% more likely to die prematurely from heart disease than the general population.</td>
</tr>
<tr>
<td>Standards for physical activity and exercise in the cardiac population</td>
<td>Association of Chartered Physiotherapists In Cardiac Rehabilitation</td>
<td>2009</td>
<td>Aims to standardise the quality and approach taken by exercise professionals when delivering the exercise component of CR.</td>
</tr>
<tr>
<td>National Infarct Angioplasty Project (NIAP) interim report</td>
<td>Department of Health</td>
<td>2008</td>
<td>NIAP is a feasibility study looking at how far primary angioplasty can be rolled out as the main treatment for heart attack in place of clot-busting drugs.</td>
</tr>
<tr>
<td>BACR education</td>
<td>BACR education</td>
<td>various</td>
<td>Information on training courses for health and exercise professionals in the management of cardiovascular disease across the UK, including BACR exercise instructor training.</td>
</tr>
<tr>
<td>Guidance on the referral of patients between physiotherapists and fitness instructors and referral to a physiotherapist or fitness instructor for supervised exercise - referral advice for GPs</td>
<td>Chartered Society of Physiotherapy and Fitness Industry Association</td>
<td>2011</td>
<td>Clarifies the roles of physiotherapists and fitness instructors in delivering supervised exercise-based programmes.</td>
</tr>
<tr>
<td>Physiotherapy works: cardiac rehabilitation</td>
<td>Chartered Society of Physiotherapy</td>
<td>2011</td>
<td>Demonstrates the cost effectiveness of physiotherapy in cardiac rehabilitation.</td>
</tr>
</tbody>
</table>

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Examples of how organisations have implemented NICE guidance locally.

<table>
<thead>
<tr>
<th>Shared learning database</th>
<th>NICE 2011</th>
<th>Examples of how organisations have implemented NICE guidance locally.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Evidence</td>
<td>NHS evidence</td>
<td>Various</td>
</tr>
</tbody>
</table>

General information on quality and corporate assurance can be obtained from the following sources:

- **Indicators for Quality Improvement Programme** from the NHS Information Centre. A resource of robust indicators to help local clinical teams select indicators for local quality improvement and a source of indicators for benchmarking.

- **NHS Alliance online resources.** NHS Alliance is the representational organisation of primary care and primary care trusts, and provides them with an opportunity to network and exchange best practice. The alliance supports its members with an open-access helpline, in-house and joint publications and briefings, internal newsletters and a website.

- **NHS Institute for Innovation and Improvement** support for commissioners, includes The Productive Leader programme to enable leadership teams to reduce waste and variation in personal work processes, and Better care, better value indicators to help inform planning, to inform views on the scale of potential efficiency savings in different aspects of care, and to generate ideas on how to achieve these savings.

- **The Quality and outcomes framework (QOF)** is a voluntary quality incentive scheme that rewards general practices for implementing systematic improvements in the quality of patient care.

- **Skills for Health** works with employers and other stakeholders to ensure that those working in the sector are equipped with the right skills to support the development and delivery of healthcare services.

Sources of further information to help you in assessing local health needs and reducing health inequalities include:
NHS Evidence provides free access to clinical and non-clinical information - local, regional, national and international. Information includes evidence, guidance and Government policy.

The National Cardiovascular Disease (CVD) profiles provide a snapshot of key issues relating to heart disease and stroke - these profiles have been designed to help local health services to assess the impact of these elements of cardiovascular disease on their local populations and the services provided to meet those needs.

Department of Health Delivering quality and value – focus on benchmarking.

NICE Health equity audit – learning from practice briefing.

NHS Comparators provides comparator data for NHS commissioning and provider organisations to enable users to investigate aspects of local activity, costs and outcomes.

The Disease management information toolkit (DMIT) is a good-practice tool for decision-makers, commissioners and deliverers of care for people with long-term conditions, which presents data on conditions that contribute to high numbers of emergency bed days. It models the effects of possible interventions that may be commissioned at a local level and helps users to consider the likely impact of commissioning options.

Disease prevalence models produced by the Association of Public Health Observatories provides primary care trust-level prevalence estimates for coronary heart disease.

PARR (Patients at risk of rehospitalisation) is a risk-prediction system for use by primary care trusts to identify patients at high risk of hospital re-admission.

PRIMIS+ provides support to general practices on information management, recording for, and analysis of, data quality, plus a comparative analysis service focused on key clinical topics.

SHAPE (Strategic health asset planning and evaluation) application provides support to strategic health authorities and primary care trusts on strategic planning across a whole health economy.
8 Topic Advisory Group: Cardiac rehabilitation services

The development of this guide for commissioners was informed by two topic advisory groups.

Topic advisory group for the 2011 guide for commissioners update

This group contributed to the development of the guide via email.

**Sam Barlow**
Commissioning Development Manager, NHS Hull

**Samantha Breen**
Clinical Lead Physiotherapist in Cardiac Rehabilitation, Central Manchester Foundation NHS Trust

**Dr Hasnain Dalal**
General Practitioner, Three Spires Medical Practice, Truro, Cornwall

**Prof Patrick Doherty**
Professor of Rehabilitation, York St John University and National Clinical Lead for Cardiac Rehabilitation (NHS Improvement)

Topic advisory group for the 2011 commissioning on services for people with chronic heart failure

A topic advisory group was established to review and advise on the content of the guide for commissioners on services for people with chronic heart failure. The following members of this group also contributed to the development of the guide for commissioners on cardiac rehabilitation services. This group met once, with additional interaction taking place via email.

**Sarah Baker**
GP and Accountable Officer, Warrington Health Consortium
Samantha Breen
Clinical Lead Physiotherapist in Cardiac Rehabilitation, Central Manchester Foundation NHS Trust

Martin Cowie
Professor of Cardiology, Imperial College London, and member of Topic Expert Group for Quality Standard on chronic heart failure

Prof Patrick Doherty
Professor of Rehabilitation, York St John University and National Clinical Lead for Cardiac Rehabilitation (NHS Improvement)

Jane Gilmour Heart Failure Specialist Nurse, Luton and Dunstable NHS Trust and member of Topic Expert Group for Quality Standard on chronic heart failure

Hugh McIntyre
Consultant Geriatrician, East Sussex Hospitals NHS Trust and Chair of Topic Expert Group for Quality Standard on chronic heart failure

Sally Singh
Director of Rehabilitation, Coventry University and Head of Pulmonary and Cardiac Rehabilitation, University Hospitals of Leicester NHS Trust

John Soady
Public Health, Sheffield PCT and member of Topic Expert Group for Quality Standard on chronic heart failure

Helen Tomkys
Vascular lead, Department of Health

**Topic advisory group for the 2008 commissioning guide on cardiac rehabilitation**

This group met once, with additional interaction taking place via email.
Cardiac rehabilitation services

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Cardiac Rehabilitation Manager and Senior Nurse in Cardiology, Luton and Dunstable Hospital NHS Foundation Trust

Dr Hasnain Dalal
General Practitioner, Truro, Cornwall

Judith Herbert
Vascular Programme Policy Officer, Department of Health (London)

Ben Knight
Service Development Team Manager, Leicestershire, Northamptonshire and Rutland Cardiac Network

Prof Bob Lewin
Director, British Heart Foundation, Care and Education Research Group

Dr Anita Roy
Consultant in Public Health, Wakefield District PCT

Dr Matthew Thalanany
Associate Director of Public Health Medicine, South West Essex PCT

Helen Williams
Pharmacy Team Leader for Cardiac Services, Kings College Hospital NHS Foundation Trust

Providing comment via email:

Margaret Leid
Director, Cheshire and Merseyside Cardiac Network

Acknowledgements

Thank you to the following for their contribution to this guide