NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

QUALITY AND OUTCOMES FRAMEWORK (QOF) INDICATOR DEVELOPMENT PROGRAMME

Briefing paper

QOF indicator area: Cardiac rehabilitation

Potential output: Recommendations for indicator development

Date of Primary Care QOF Indicator Advisory Committee meeting:
2 December 2010

Contents

Introduction

The QOF indicator area is cardiac rehabilitation and this briefing paper presents an assessment of the suitability of NICE and SIGN clinical guideline recommendations relevant to primary care. The recommendations and underlying evidence are taken from the following guidelines, with no update searches performed:

- Chronic heart failure: management of chronic heart failure in adults in primary and secondary care NICE clinical guideline 108 (2010). This updates and replaces NICE clinical guideline 5.
- Unstable angina and NSTEMI: the early management of unstable angina and non-ST-segment-elevation myocardial infarction NICE clinical guideline 94 (2010). This updates and replaces recommendations for the early management of unstable angina and NSTEMI from NICE technology appraisal guidance 47 and 80.
- Myocardial infarction: secondary prevention in primary and secondary care for patients following a myocardial infarction NICE clinical guideline 48 (2007).
- 'Cardiac rehabilitation' SIGN clinical guideline 57 (2002).

Stakeholder topic suggestion

The stakeholder submission for this topic identified referral of people with **heart failure** to cardiac rehabilitation as an area for QOF indicator development. The QOF programme team expanded this topic suggestion to include other heart disease groups including people following a **myocardial infarction (MI)** and people with **stable and unstable angina**.

Overview of cardiac rehabilitation

Epidemiological summary

Definition

Coronary artery disease (CAD), sometimes referred to as coronary heart disease (CHD), is the narrowing of the arteries to the heart caused by a build-

up of fatty deposits, which partially restricts and sometimes altogether blocks blood flow to the heart. Narrowed blood flow to the heart causes **angina**, in which people experience chest pain. The blockage of blood flow to the heart causes **myocardial infarction**, also known as a heart attack, which leads to death of heart muscle. Over time, CAD can weaken the heart muscle and lead to **heart failure**, in which the heart is unable to pump enough blood throughout the body (National Heart Lung and Blood Institute, 2009).

Angina can either be 'stable', described as predictable exertional chest pain, or 'unstable', described as sudden non-exertional chest pain.

A description of the 4 phases of cardiac rehabilitation programmes is provided in the appendices.

Incidence, prevalence and evidence of variation by age, sex and ethnicity

The population prevalence of CHD in England is 6.5% in men and 4.0% in women. Prevalence rates increase with age, with more than 1 in 3 men and 1 in 4 women aged 75 and over living with CHD (British Heart Foundation www.heartstats.org).

Both the incidence and prevalence of heart failure increase steeply with age, with the average age at first diagnosis being 76. There are approximately 68,000 new cases of heart failure diagnosed in the UK each year. Around 1 in 35 people aged 65–74 has heart failure. This increases to about 1 in 15 of those aged 75–84, and to just over 1 in 7 in those aged 85 and older. People of African or African-Caribbean origin are more likely to develop heart failure as a result of hypertension rather than coronary artery disease, whereas those of Asian origin have a greater risk of developing heart failure as a result of coronary artery disease – often accompanied by obesity and diabetes mellitus.

The annual incidence of MI for men aged between 30–69 is about 600 per 100,000 and for women of the same age it is about 200 per 100,000. The British Heart Foundation has estimated that there are about 147,000 MIs per year in men of all ages in the UK and 121,000 in women, giving a total of

268,000 cases. In the UK, about 838,000 men and 394,000 women have had an MI (British Heart Foundation, 2004).

The recorded prevalence of angina varies across UK studies. The SIGN clinical guideline on the management of stable angina reports the prevalence of angina to be 5.1% in men aged 55–64 and 6.7% in men aged 65–74. For the same age groups in women the equivalent rates were 4% and 6.8%. These prevalence rates apply to Scotland only.

Figures from the 2006 Health Survey for England suggest that about 8% of men and 3% of women aged 55–64 and about 14% of men and 8% of women aged 65–74 have or have had angina. From these prevalence rates it is estimated that there are about 619,000 men aged between 55 and 75 living in the UK who have or have had angina and about 336,000 women, giving a total of just over 955,000 (British Heart Foundation 2010).

Morbidity and mortality

Mortality rates for CHD have fallen rapidly in the UK since the late 1970s; however, UK mortality rates are still among the highest in Western Europe. CHD is the most common cause of death in the UK, with around 1 in 5 men and 1 in 7 women dying from the disease, causing around 94,000 deaths in the UK each year.

CHD makes a significant impact on every aspect of a person's life including their quality of life, future employment and personal relationships, as well as increasing the risk of their dying early (National Service Framework 2000)

Heart failure has a poor prognosis, with 30–40% of people diagnosed with heart failure dying within a year; thereafter the mortality is less than 10% per year. Heart failure has a major impact on quality of life, and is associated with mood disorders.

Cardiac rehabilitation has been shown to increase physical health and decrease subsequent morbidity and mortality in people with CHD.

Impact on health services

Primary care

The 2009/10 QOF prevalence for the CHD register is 3.4% for England, 4.4% for Scotland, 4.1% for Wales and 4% for Northern Ireland. The 2009/10 QOF prevalence for the heart failure register is 0.7% for England, 0.8% for Scotland, 0.9% for Wales and 0.8% for Northern Ireland.

Secondary care

Hospital episodes statistics for England for 2009/10 show that there were 50,400 emergency admissions for acute myocardial infarction and 53,400 for heart failure.

Evidence suggests that cardiac rehabilitation could lead to a reduction in recurrent MIs and subsequent unplanned admissions to secondary care as well as fewer hospital admissions for heart failure. Suitable patients could be referred by secondary care to cardiac rehabilitation programmes after acute and unplanned admissions.

Current management in primary care

Primary care plays a significant role in the management of people with coronary heart disease, including heart failure. GPs are involved in secondary prevention management, which includes appropriate advice on lifestyle and optimising long-term secondary prevention drug therapy. GPs may refer suitable patients to cardiac rehabilitation programmes.

NHS priorities and timeliness of guidance

The NICE QOF team examined national clinical guidelines, policy documents and national strategies across the UK to assess timeliness of indicators in this topic area. The following were found to be relevant to cardiac rehabilitation:

- Cardiac rehabilitation services. NICE commissioning guide (2008 [since the QOF team's search this has been updated and replaced by the 2011 version])

- Chronic heart failure: management of chronic heart failure in adults in primary and secondary care. NICE clinical guideline 108 (2010)
- Unstable angina and NSTEMI: the early management of unstable angina and non-ST-segment-elevation myocardial infarction. NICE clinical guideline 94 (2010)
- Commissioning a cardiac rehabilitation service. Department of Health (2010)
- Case for change: cardiac rehabilitation services and Service specification. Department of Health (2010)
- The Cardiac Disease National Service Framework for Wales (updates the Coronary Heart Disease National Service Framework 2001). Welsh Assembly Government (2009)
- Department of Health (2008) Treatment of heart attack national guidance: final report of the National Infarct Angioplasty Project (NIAP)
- Myocardial infarction: secondary prevention in primary and secondary care for patients following a myocardial infarction. NICE clinical guideline 48 (2007)
- Developing services for heart failure. Department of Health (2003)
- Cardiac rehabilitation. Scottish Intercollegiate Guidelines Network (2002) guideline 57
- Coronary Heart Disease & Stroke Task Force. NHS Scotland (2001)
- National Service Framework for Coronary Heart Disease. Department of Health (2000)

Review of recommendations

Summary of NICE guideline recommendations

Four recommendations from NICE clinical guidelines 48, 94 and 108, and SIGN clinical guideline 57 have been identified as being potentially suitable for QOF indicator development.

Cardiac rehabilitation for people with heart failure

NICE clinical guideline 108, recommendation 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.

  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.

Cardiac rehabilitation post myocardial infarction

NICE clinical guideline 48, recommendation 1.2.1.1.

- All patients (regardless of their age) should be given advice about and offered a cardiac rehabilitation programme with an exercise component.

Cardiac rehabilitation for people with unstable angina

NICE clinical guideline 94, recommendation 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).

Cardiac rehabilitation for people with stable angina

SIGN guideline 57, recommendation 4.3.

- Patients with stable angina should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.

Evidence summary

This is a summary of the evidence supporting the proposed recommendations presented above. This section relates to the evidence summary table in appendix A of this briefing paper.

Clinical effectiveness

Cardiac rehabilitation for people with heart failure (NICE clinical guideline 108)
There is evidence from randomised controlled trials across relevant outcomes (including reduced heart failure hospitalisation, improved quality of life, improved walking test) to support the use of exercise-based cardiac rehabilitation programmes for people with heart failure when compared with standard care including nurse specialist care, as recommended in NICE clinical guideline 108, recommendation 1.3.1.1.

The NICE Guideline Development Group (GDG) considered that **exercise** is the most important component of a rehabilitation programme, because education and counselling are usually incorporated into standard care[1].

Cardiac rehabilitation after myocardial infarction (NICE clinical guideline 48)
There is evidence from randomised controlled trials across relevant outcomes (including reduction in all-cause mortality and cardiac mortality) to support exercise-only cardiac rehabilitation compared with usual care, as recommended in NICE clinical guideline 48, recommendation 1.2.1.1.

[1] The GDG concluded that of the 3 main components of any rehabilitation programme exercise is the most important intervention because the education and counselling are usually incorporated into standard care. Therefore, the GDG elected to review the role of exercise-based rehabilitation programmes in the management of heart failure, while acknowledging the importance of psychosocial aspects of rehabilitation.
The GDG was aware that some rehabilitation programmes in the NHS are designed specifically to meet the needs of people with chronic heart failure whereas others incorporate people with heart failure within their existing cardiac rehabilitation programmes (post-myocardial infarction and post-cardiac surgery).

Evidence also supports the use of comprehensive cardiac rehabilitation to reduce cardiac mortality compared with usual care.

Cardiac rehabilitation for people with unstable angina (NICE clinical guideline 94)

The GDG noted that no evidence of clinical effectiveness exists for cardiac rehabilitation for people with unstable angina. However, the GDG acknowledged that unstable angina is part of the same pathophysiological continuum as non-ST-segment-elevation myocardial infarction (NSTEMI), therefore the recommendations made in NICE clinical guideline 48 relating to secondary prevention following a myocardial infarction would logically apply to both groups.

NICE clinical guideline 94 recommendation 1.5.10 is based on the same evidence review as NICE clinical guideline 48 recommendation 1.2.1.1, as outlined above.

Cardiac rehabilitation for people with stable angina (SIGN guideline 57)

There is evidence from randomised controlled trials for key outcomes considered (including improving exercise capacity, symptoms and ischaemia) to support the use of exercise-only and comprehensive rehabilitation programmes for people with stable angina.

Cost effectiveness

Cardiac rehabilitation for people with heart failure (NICE clinical guideline 108)

The GDG for NICE clinical guideline 108 noted that cardiac rehabilitation programmes are likely to be cost-effective in different populations and for different healthcare systems, including the UK NHS.

Cardiac rehabilitation after myocardial infarction (NICE clinical guideline 48)

Evidence suggested that cardiac rehabilitation was cost effective when compared with no cardiac rehabilitation in NICE clinical guideline 48.

Cardiac rehabilitation for people with unstable angina (NICE clinical guideline 94)

The GDG for NICE clinical guideline 94 noted that cardiac rehabilitation programmes are likely to be cost-effective in different populations and for different healthcare systems, including the UK NHS.

Cardiac rehabilitation for people with stable angina (SIGN guideline 57)

No cost-effectiveness analysis was conducted for or presented in SIGN clinical guideline 57.

Assessment of recommendations against current practice

Current practice

In 2010 the British Heart Foundation published the results of the 2008/09 National Audit of Cardiac Rehabilitation (British Heart Foundation 2010). This major audit provides a detailed evaluation of cardiac rehabilitation programmes in UK primary care, including people post MI, people with heart failure and people with angina.

There are currently 395 cardiac rehabilitation programmes on the British Heart Foundation/British Association for Cardiac Rehabilitation Register of Cardiac Rehabilitation Programmes (in England, Northern Ireland and Wales) and 247 took part in the 2008/09 national audit.

Referral to cardiac rehabilitation was almost entirely of people in 1 of 3 diagnostic groups: myocardial infarction, elective angioplasty (PCI) or coronary artery bypass surgery (CABG).

The audit does not report the source of referral for people taking part in a cardiac rehabilitation programme. It is not clear how many people with CHD are being referred by their GP to cardiac rehabilitation programmes.

2008/09 national audit

Results from the 2008/09 national audit showed that:

- 45% of people with a prior MI were referred to cardiac rehabilitation programmes, of whom 40% attended a programme
- only 1% of people with heart failure and 4% of those with angina were referred to cardiac rehabilitation programmes.

The 2008/09 national audit reported that not all cardiac rehabilitation programmes routinely included all diagnostic groups in their programmes. The possible reasons cited were related to clinical and patient awareness and variation in local referral protocols. Participation rates also appeared to be influenced by geographical boundaries and varied between diagnostic groups.

The national audit found that uptake of cardiac rehabilitation programmes was lower in women, particularly in older women. Audit data also showed that there was no evidence of a disparity in uptake across ethnic groups. This finding has to be treated with some caution because not all centres completed the ethnicity data and it may be that those who do are those who are also most careful to ensure that there is equity.

Health inequalities

The evidence shows that rates of CHD vary according to social circumstances, gender and ethnicity.

The highest mortality rates from CHD occur in Scotland and the north of England, with the lowest rates in the south of England. There is a relationship between deaths from heart disease and levels of deprivation, estimated at approximately 1 in 3 deaths from CHD in people under 65 being associated with social class inequalities (Allender et al. 2008).

Mortality rates from CHD differ between ethnic groups. There has been a smaller fall in premature CHD mortality in the South Asian community over recent years than in the rest of the UK population (Allender et al. 2007).

There are health inequalities in relation to the uptake of cardiac rehabilitation according to sex. Older women are underrepresented in cardiac rehabilitation; women over 80 are less likely to take part than men of the same age.

[Relevance to health inequalities: medium/high.]

Will implementation of these recommendations lead to cost-effective improvements in the delivery of primary care?

The evidence suggests that there are particularly low participation rates for cardiac rehabilitation programmes in the UK for some diagnostic groups, namely heart failure and angina.

NICE clinical guideline 48 recommendation 1.2.1.1 would be expected to lead to a moderate shift in practice. NICE clinical guideline 108 recommendation 1.3.1.1 and NICE clinical guideline 94 recommendations 1.5.10 and 4.3 would be expected to lead to a major shift in practice. The guideline developers considered that cardiac rehabilitation was cost effective when compared with standard care. The NICE team consider that implementing these recommendations would lead to cost-effective improvements in primary care.

Initial feasibility assessment

These recommendations could provide the basis of a referral type indicator for cardiac rehabilitation programmes for the 3 diagnostic groups to be considered as part of indicator development.

Key considerations

The following key considerations summarise the main points made in the briefing paper. The Committee is asked to consider these in its discussions:

- NICE recommendations relating to cardiac rehabilitation programmes for people with chronic heart failure, MI and angina and the SIGN recommendation relating to stable angina are supported by level 1 evidence (systematic review and/or meta-analyses or randomised controlled trials).

- Evidence from the recent national audit suggests that increased referral for people with heart failure and angina would entail a major shift in delivery of practice. The uptake was very low for these groups.
- The national audit data does not report the source of referral to cardiac rehabilitation programmes.
- The NICE GDG for heart failure considered that **exercise** is the most important component of a rehabilitation programme.

Assessment against NICE's prioritisation criteria

The condition is considered to have population prevalence that is high, partly meets the criteria for diagnosis and treatment and fully meets the criteria for monitoring in primary care (by GPs or directly employed practice staff).

The recommendations for **cardiac rehabilitation for people with heart failure and unstable angina** have feasibility issues that would need to be considered as part of indicator development. The evidence of clinical effectiveness has been assessed as high. The evidence suggests the recommendations are likely to be cost-effective. The expected change in practice is considered to be high.

The recommendations for **cardiac rehabilitation for people after MI** have feasibility issues that would need to be considered as part of indicator development. The evidence of clinical effectiveness has been assessed as high. The evidence suggests the recommendation is likely to be cost-effective. The expected change in practice is considered to be moderate.

The recommendations for **cardiac rehabilitation for people with stable angina** have feasibility issues that would need to be considered as part of indicator development. The evidence of clinical effectiveness has been assessed as high. There are no cost-effectiveness data available. The expected change in practice is considered to be high.

References

Allender S, Peto V, Scarborough P et al. (2008) Coronary heart disease statistics. London: British Heart Foundation.

Allender S, Peto V, Scarborough P et al. (2007) Coronary heart disease statistics. London: British Heart Foundation.

Beswick AD, Rees K, Griebsch I et al. (2004) Revision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups. 13: 2

British Heart Foundation (2010) Coronary heart disease statistics. London: British Heart Foundation.

British Heart Foundation (2009) The national audit of cardiac rehabilitation annual statistical report 2010.

National Heart Lung and Blood Institute (2009) What is coronary heart disease?

Appendix A: Evidence summary

Selected recommendations from NICE clinical guidelines 48, 94 and 108 and SIGN clinical guideline 57

	Recommendation	Level of evidence	Key outcomes considered (for interventions)	Specific considerations highlighted by guideline developers	Cost-effectiveness evidence
Rehabilitation in chronic heart failure					
NICE clinical guideline 108, recommendation 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.	Meta-analyses of 12 RCTs (level 1 evidence)	6 minute walking test (after 12 months and after 5 years) Minnesota Living with Heart Failure Questionnaire after 6 months Heart failure hospitalisation rates Quality of life after 5 years All-cause mortality	A meta-analysis of 12 randomised-controlled trials (RCT) was identified comparing **exercise based cardiac rehabilitation with standard care** including nurse specialist care. In the studies reviewed, exercise rehabilitation significantly reduced HF hospitalisation and significantly improved quality of life (up to 5 years follow up) and significantly improved walking (based on mean 6 minute walking test at up to 6 months and 12 months) There was no significant difference between exercise rehabilitation and standard care for: • All-cause mortality (30 months and 5 years) • All-cause hospitalisation (up to 30 months) • Cardiovascular death (up to 4.4 years)	The GDG noted that healthcare-based cardiac rehabilitation programs are likely to be cost effective in different populations and for different healthcare systems, including the UK NHS.

	Recommendation	Level of evidence	Key outcomes considered (for interventions)	Specific considerations highlighted by guideline developers	Cost-effectiveness evidence
				• Quality of life (up to 6 months) • Mean change in quality of life (up to 3 months) • Mean 6 minute walking test (5-year follow up) **GDG considerations** The GDG noted that **exercise** is the most important component of a rehabilitation programme, because education and counselling are usually incorporated into standard care. The GDG also noted that the majority of the programmes included group exercises, which also provided the patients with support and educational opportunities.	
Cardiac rehabilitation after an acute MI					
NICE clinical guideline 48, recommendation 1.2.1.1	All patients (regardless of their age) should be given advice about and offered a cardiac rehabilitation programme with an exercise component.	3 systematic reviews of RCTs (level 1 evidence)	All-cause mortality Cardiac mortality non-fatal MI Revascularisation Sudden cardiac deaths Death from cerebrovascular disease	The GDG reviewed level 1 evidence on: • Exercise-only cardiac rehabilitation compared with usual care • Comprehensive cardiac rehabilitation compared with usual care • Risk factor education or counselling, without an exercise	The GDG reviewed results that suggested that cardiac rehabilitation was cost effective when compared with no cardiac rehabilitation. The estimated incremental cost-effectiveness ratio (ICER) is about

	Recommendation	Level of evidence	Key outcomes considered (for interventions)	Specific considerations highlighted by guideline developers	Cost-effectiveness evidence
			Non-fatal cerebrovascular disease Health-related quality of life	component compared with usual care in patients with CAD. In 1 of the systematic reviews, exercise-only cardiac rehabilitation reduced all-cause mortality and cardiac mortality. Exercise-only and comprehensive programmes both reduced total cardiac mortality. The GDG acknowledged very small effects were shown for health-related quality of life. The GDG noted a trend in the reduction of cerebrovascular disease mortality but this was not significant. 1 systematic review showed neither programme had an effect on the recurrence of non-fatal MI, another found that comprehensive cardiac rehabilitation reduced recurrent MI. Analysis of the combined outcomes of all-cause mortality, non-fatal MI and revascularisations found that both exercise and comprehensive programmes resulted in a reduction in these combined outcomes compared with usual care.	£7860 for men and £8360 per QALY gained for women, which is well below the level usually considered to be affordable in the NHS (about £20,000 to £30,000 per QALY). The results of the additional analysis are consistent with the findings from other healthcare systems.

	Recommendation	Level of evidence	Key outcomes considered (for interventions)	Specific considerations highlighted by guideline developers	Cost-effectiveness evidence
				The GDG noted effects of rehabilitation programmes differed over time, with no significant difference in all-cause mortality at 12 months, but a significant reduction at 24 months and at 5 years in the rehabilitation group.	
Rehabilitation and discharge planning (unstable angina)					
NICE clinical guideline 94, recommendation 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	As above	As above	The guideline developers used the evidence review for cardiac rehabilitation in people with unstable angina as used in NICE clinical guideline 48. The GDG acknowledged that although no evidence exists specifically for people with unstable angina, it is part of the same pathophysiological continuum as non-ST-segment-elevation myocardial infarction (NSTEMI) and so the recommendations would logically apply to both groups.	As above

	Recommendation	Level of evidence	Key outcomes considered (for interventions)	Specific considerations highlighted by guideline developers	Cost-effectiveness evidence
	clinical guideline 48, and 'Lipid modification', NICE clinical guideline 67) • lifestyle changes (in line with 'MI: secondary prevention', NICE clinical guideline 48).				
Stable Angina					
SIGN clinical guideline 57, recommendation 4.3	Patients with stable angina should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.	Systematic reviews and RCTs (level 1 evidence)	Exercise capacity Less progression of atherosclerosis Myocardial ischaemia quality of life Cardiac events	In the studies reviewed, the guideline developers found evidence that exercise-only and comprehensive cardiac rehabilitation programmes improved exercise capacity, symptoms and ischaemia in patients with stable angina. The guideline developers noted fewer cardiac events in people who attended comprehensive cardiac rehabilitation programmes.	None presented.

Appendix B: Related QOF indicators

Related existing QOF indicators from2009/10 indicator set

Cardiac rehabilitation relates to existing QOF clinical domains as defined in the 2009/10 GMS Contract guidance. The QOF indicators for this domain are outlined below.

QOF domain 2009/10: Secondary prevention of coronary heart disease

Indicator	Points	Payment stages
Records		
CHD 1. The practice can produce a register of patients with coronary heart disease	4	
Diagnosis and initial management		
CHD 2. The percentage of patients with newly diagnosed angina (diagnosed after 1 April 2003) who are referred for exercise testing and/or specialist assessment	7	40–90%
Ongoing management		
CHD 5. The percentage of patients with coronary heart disease whose notes have a record of blood pressure in the previous 15 months	7	40–90%
CHD 6. The percentage of patients with coronary heart disease in whom the last blood pressure reading (measured in the previous 15 months) is 150/90 or less	17	40–70%
CHD 7. The percentage of patients with coronary heart disease whose notes have a record of total cholesterol in the previous 15 months	7	40–90%
CHD 8. The percentage of patients with coronary heart disease whose last measured total cholesterol (measured in the previous 15 months) is 5 mmol/l or less	17	40–70%
CHD 9. The percentage of patients with coronary heart disease with a record in the previous 15 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken (unless a contraindication or side-effects are recorded)	7	40–90%
CHD 10. The percentage of patients with coronary heart disease who are currently treated with a beta blocker (unless a contraindication or side-effects are recorded)	7	40–60%
CHD 11. The percentage of patients with a history of myocardial infarction (diagnosed after 1 April 2003) who are currently treated with an ACE inhibitor or Angiotensin II antagonist	7	40–80%
CHD 12. The percentage of patients with coronary heart disease who have a record of influenza immunisation in the preceding 1 September to 31 March	7	40–90%

QOF domain 2009/10: Heart failure

Indicator	Points	Payment stages
Records		
HF 1. The practice can produce a register of patients with heart failure	4	
Initial diagnosis		
HF 2. The percentage of patients with a diagnosis of heart failure (diagnosed after 1 April 2006) which has been confirmed by an echocardiogram or by specialist assessment	6	40–90%
Ongoing management		
HF 3. The percentage of patients with a current diagnosis of heart failure due to Left Ventricular Dysfunction (LVD) who are currently treated with an ACE inhibitor or Angiotensin Receptor Blocker (ARB), who can tolerate therapy and for whom there is no contra-indication	10	40–80%
HF 4. The percentage of patients with a current diagnosis of heart failure due to LVD who are currently treated with an ACE inhibitor or Angiotensin Receptor Blocker, who are additionally treated with a beta-blocker licensed for heart failure, or recorded as intolerant to or having a contraindication to beta-blockers.	9	40–60%

Related indicators from the NICE menu of indicators

There are 3 cardiac rehabilitation related indicators on the NICE menu of indicators, available from: www.nice.org.uk/aboutnice/qof/indicators.jsp

NICE Menu NM06: In those patients with a new diagnosis of hypertension (excluding those with pre-existing CHD, diabetes, stroke and/or TIA) recorded between the preceding 1 April to 31 March: the percentage of patients aged 30 to 74 years who have had a face-to-face cardiovascular risk assessment at the outset of diagnosis (within 3 months of the initial diagnosis) using an agreed risk assessment tool.
NICE Menu NM07: The percentage of patients with a history of myocardial infarction from 1 April 2011 currently treated with an ACE inhibitor (or ARB if ACE intolerant), aspirin or an alternative anti-platelet therapy, beta-blocker and statin (unless a contraindication or side effects are recorded).
NICE Menu NM08: For patients with newly diagnosed angina (diagnosed after 1 April 2011), the percentage who are referred for specialist assessment.

Related indicators under consideration by the Advisory Committee

Pilot 3 (October 2010–March 2011) In those patients with a new diagnosis of hypertension (as of 1 October 2010) (excluding those with pre-existing CHD, diabetes, stroke and/or TIA), who have a recorded CVD risk assessment score (using an agreed risk assessment tool) of ≥20% in the previous 15 months, who are currently treated with statins (unless there is a contraindication).

Appendix C: Assessment of topic and recommendations against prioritisation checklist criteria status

The overall topic and recommendations produced by the QOF programme team have been assessed by comparing information in this briefing paper with the revised prioritisation checklist as agreed at the June 2010 Advisory Committee meeting.

Topic status

This topic meets the prioritisation criteria for prevalence, primary care management and disease severity as outlined in 1A, 1B and 1C below.

1A Population	
The condition is considered to have population prevalence that is high	☒
The condition is considered to have population prevalence that is medium	☐
The condition is considered to have population prevalence that is low	☐

1B Management				
		Fully meets criteria	Partly meets criteria	Doesn't meet criteria
	Score:	[3]	[2]	[1]
The condition is diagnosed in primary care*		☐	☒	☐
The condition is treated in primary care*		☐	☒	☐
The condition is monitored in primary care*		☒	☐	☐
** by GPs or directly employed practice staff*				

1C Disease severity		
Score	Scoring criteria	
1	Minor quality-of-life impact, no disability, limited morbidity impact	☐
2	Definite quality-of-life impact, no disability, limited morbidity impact	☐
3	Definite quality-of-life impact, some disability and/or intermediate morbidity impact	☒
4	Definite quality-of-life impact, significant disability and/or significant morbidity impact	☐

Recommendation status

The individual recommendations are assessed on feasibility, strength of clinical and cost-effectiveness evidence and expected change in practice.

Feasibility of each recommendation	
Cardiac rehabilitation for people with heart failure	
Recommendation 1.3.1.1 (NICE clinical guideline 108)	Amber
Cardiac rehabilitation after MI	
Recommendation 1.2.1.1 (NICE clinical guideline 48)	Amber
Cardiac rehabilitation for people with unstable angina	
Recommendation 1.5.10 (NICE clinical guideline 94)	Amber
Cardiac rehabilitation for people with angina	
Recommendation 4.3 (SIGN guideline 57)	Amber

Scores for each recommendation			
	Evidence of clinical effectiveness	**Evidence of cost effectiveness**	**Expected change in practice**
Cardiac rehabilitation for people with heart failure			
Recommendation 1.3.1.1 (NICE clinical guideline 108)	High	Likely to be cost-effective	Major
Cardiac rehabilitation post MI			
Recommendation 1.2.1.1 (NICE clinical guideline 48)	High	Likely to be cost-effective	Moderate
Cardiac rehabilitation for people with unstable angina			
Recommendation 1.5.10 (NICE clinical guideline 94)	High	Likely to be cost-effective	Major
Cardiac rehabilitation for people with angina			
Recommendation 4.3 (SIGN guideline 57)	High	No data available	Major

Appendix D: Description of the four phases of cardiac rehabilitation programmes (taken from SIGN guideline 57)

It is useful to consider four phases of cardiac rehabilitation, as each represents a different component of the journey of care: inpatient care, the early post discharge period, exercise training, and finally long term follow up. Some countries recognise three phases only, by calling the early post discharge period Phase 2A and exercise training Phase 2B. Common to each phase, and irrespective of which model of cardiac rehabilitation is chosen, are the need to tailor interventions to the individual and the importance of good communication with specialist cardiac services, primary and community care. There is evidence that treatment plans are not carried out in the community because doctors and nurses wait for patients to consult. A proactive approach to patient participation and monitoring is therefore recommended.

Phase 1 occurs during the inpatient stage or after a step change in the patient's cardiac condition (defined as any myocardial infarction, onset of angina, any emergency hospital admission for coronary heart disease (CHD), cardiac surgery or angioplasty, or first diagnosis of heart failure). During this phase medical evaluation, reassurance and education, correction of cardiac misconceptions, risk factor assessment, mobilisation and discharge planning are the key elements. It is customary to involve family and partners from this early stage. A nurse counsellor can improve both the patients and the partner's knowledge of heart disease and reduce anxiety and depression compared with those receiving routine care.

Phase 2 is the early post discharge period, a time when many patients feel isolated and insecure. Support can be provided by home visiting, telephone contact, and by supervised use of the Heart Manual. This manual is a self-help programme for patients recovering from a heart attack that has been shown to reduce anxiety, depression and hospital readmission rate.

Phase 3 has historically taken the form of a structured exercise programme in a hospital setting with educational and psychological support and advice on risk factors. Increasingly it is recognized that both components can be undertaken safely and successfully in the community. A menu based approach recognises the need to tailor the delivery of services to the individual, and is likely to include specific

education to reduce cardiac misconceptions and encourage smoking cessation and weight management; vocational rehabilitation to assist return to work or retirement; and referral to a psychologist, cardiologist, or exercise physiologist.

Phase 4 involves the long term maintenance of physical activity and lifestyle change. Available evidence suggests that both must be sustained for cardiac benefits to continue. Membership of a local cardiac support group, which involves exercise in a community centre such as a gym or leisure centre, may help maintain physical activity and behavioural change.

Appendix E: Recommendations from SIGN guideline 57 (2002) relating to cardiac rehabilitation for people with heart failure, MI and angina

Exercise training should form a core element of cardiac rehabilitation programmes.

Patients with chronic heart failure should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.

Comprehensive cardiac rehabilitation is recommended following myocardial infarction.

Patients with stable angina should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.