COMMISSIONING SPECIFICATION

Service	Lincolnshire Cardiac Rehabilitation Services
Commissioner Lead	Andrew Rix
Provider Lead	LCHS/ ULHT
Period	2013/14

1. KEY SERVICE OUTCOMES

This commissioning specification is designed to ensure that Lincolnshire provides high quality, evidence based Cardiac Rehabilitation services that will deliver the standards and outcomes set out within:

- The Department of Health Commissioning Pack for Cardiac Rehabilitation (2010)
- BACPR Standards and Core Components for Cardiovascular Disease Prevention and Rehabilitation 2012 (2nd Edition).
- Cardiac Rehabilitation Services (NICE Guidelines 2011)
- The National Service Framework for Coronary Heart Disease (DOH 2000)
- MI Secondary Prevention (NICE Guidelines 2007)

The key outcomes of the commissioning specification will be to:

- Provide a patient centred service which optimises health and wellbeing, returning people to their former place in society and reducing risk or recurrent events.
- Increase the number of patients who are offered and who complete a cardiac rehabilitation programme based on their individual needs.
- Enhance referral, equity of access and communication between stages and providers.
- Reduce the number of acute re-admissions due to secondary cardiac events and unplanned procedures.
- Contribute to a reduction in premature morbidity and mortality from heart disease.
- Increase patient satisfaction and experience.

2. PURPOSE OF THE SERVICE

Cardiac patients experience a life-threatening event that can disable them physically, emotionally, socially and vocationally. There is overwhelming evidence that cardiac rehabilitation reduces cardiac-related morbidity, which in turn reduces re-admissions and the need for cardiac follow-up consultation. Cardiac rehabilitation also supports patients' return to work, improves their functional capacity, physical activity status and perceived quality of life, and supports the development of self-management skills reducing anxiety and depression. The benefits of a menu-driven approach,

with a choice of setting and individually identified patient goals, are increasingly recognised.

Cardiac rehabilitation is defined by the World Health Organization 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 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".

In practical terms, cardiac rehabilitation is a professionally supervised programme consisting of:

1. A medical assessment to determine risk factors, patient needs and limitations
2. A menu-based programme covering the following components:
   - Health behaviour change and education
   - Lifestyle risk factor management
     -Physical activity and exercise
     -Diet
     -Smoking cessation
   - Psychosocial health
   - Medical risk factor management
   - Cardio protective therapies
   - Long-term management
   - Audit and evaluation

National and local context

Cardiovascular disease (CVD) was responsible for nearly 30% of all deaths in 2011 and is the largest cause of disability in England. It is associated with substantial morbidity including: chest pain, lethargy, dyspnoea, adverse economic effects such as unemployment, and anxiety and depression.

Lincolnshire covers 2,350 square miles and has a total population of 718,800. 20% of Lincolnshire's Population is 65+, since 1981 this age group in Lincolnshire has grown by 69% and is projected to be to be 31% by 2033, this ageing population will correlate to increased rates of coronary heart disease.

Lincolnshire has 33,824 registered CHD patients, 4.5% of the population. Early mortality rates from cardiovascular disease (66.1 per 100,000) (<75 years) are similar to the National rate (64.7 per 100,000). In 2010/11 the emergency admission rate for CHD, all persons, in Lincolnshire was 244.6 per 100,000 (2813 admissions), significantly higher than England (225.9 per 100,000).

CHD Prevalence

CCG	List Size	Disease Register	Prevalence
Lincolnshire East	12709	241613	5.3%
Lincolnshire West	9149	226047	4%
South Lincolnshire	6419	156440	4.1%
South West Lincolnshire	5547	129209	4.3%
NHS Lincolnshire	**33824**	**753309**	**4.5%**

CHD Emergecy Admissions

CCG	No. admissions 2012/2013	Indicative Cost 2012/13
Lincolnshire East	979	£2,297,203
Lincolnshire West	527	£1,444,172
South Lincolnshire	499	£1,200,425
South West Lincolnshire	419	£1,033920
NHS Lincolnshire	**2424**	**£5,975,720**

In 2008, Lincolnshire commissioned a Cardiac Rehabilitation Programme (Phases 1, 2 and 3) extending and improving the previous services by:

1. Improving Care Closer to Home
   - New investment in rehabilitation services and a new model of care making services more accessible to patients in the community, where clinically appropriate.
   - Investing in increased community based Cardiac Specialist Rehabilitation Nurses and Physiotherapists/suitably qualified BACR exercise instructors to support patients and their families post cardiac event.

2. Improving Access to Local Services.
   - New investment to develop four new Phase 3 cardiac rehabilitation services in community hospitals (Spalding, Skegness, Stamford and John Coupland. Gainsborough).

3. Improving Health & Well Being for the Local Population
   - New investments in educational programmes for patients with long term conditions.
   - New investment in services that target groups with specific health needs or where health inequalities have been identified.

Case for Change

Cardiac rehabilitation is widely considered the 'unfinished business' of the National Service Framework for Coronary Heart Disease (CHD NSF, 2000). Despite the NSF goal of 85% of patients who have been discharged from hospital after a heart attack or revascularisation procedure being offered cardiac rehabilitation, current figures identify that this is far from the case. The National Audit of Cardiac Rehabilitation reported that in 2012, 44% participated in a cardiac rehabilitation exercise programme.

The Cardiovascular Disease Outcomes Strategy published by the Department of Health (2013) examined aspects of CVD where there is most opportunity to improve outcomes - increasing the provision of cardiac rehabilitation is one of the key priorities for action.

Whilst a comprehensive Cardiac Rehabilitation service exists across Lincolnshire, new guidance and standards have been produced changing the pathway of cardiac rehabilitation from the 4 phases of provision to 7 stages (0-6). As well as specifying how services should be delivered aligned to the new pathway, the application of these standards will enable Lincolnshire to review the current service delivery against the Lincolnshire Commissioning Specification 2008 and determine what is required to meet any gaps in provision, this may include:

- Ensuring specification addressed any disparities in the provision of services across providers and locations.
- Ensuring provision at required capacity and capability levels to respond to increasing populations of eligible patients and extension of eligible groups.
- To ensure systems in place to continuously improve uptake and access for patients – for example in parts of Lincolnshire, 43% of patients referred into cardiac rehab process chose to commence the exercise and education programme and of those patients, 95% completed the programme.
- Ensure consistent and smooth transition between the stages and providers - providing continuity and co-ordination of care across the pathway
- Ensure most efficient and economic utilisation of skills and knowledge providing more pragmatic /effective clinical management.
- Development of services/professionals in partner agencies to support patients in long term maintenance, and secondary prevention including lifestyle advice on an on-going basis

3. SCOPE

The Cardiac Rehabilitation Service shall accept all eligible patients registered with a GP within the Lincolnshire boundary, this will include referrals from Stage 0 Providers who are outside Lincolnshire boundaries (Papworth Hospital, Glenfield Hospital, Nottingham City Hospital, Hull Royal Infirmary, Scunthorpe General Hospital, Diana Princess Of Wales Hospital, Peterborough City Hospital).

The service will be available to patients with the following conditions/procedures which have been shown to benefit most from 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 patients that have been stable for a minimum of six weeks and have a reduction in functional ability due to heart failure symptoms. Programme to be delivered in

conjunction with Heart Failure Complex Case Managers.

- Implantable cardiac defibrillators (ICD)
- Heart transplant patients (awaiting transplant and post surgery) and those patients with ventricular assist devices (VADs)
- Patients that have undergone surgery for ICD therapy or CRT for reasons other than ACS or heart failure
- All heart valve replacement patients
- Stable angina patients who have had two condition related emergency admissions to hospital, within a six month period.

Cardiac rehabilitation teams should offer their services to any eligible patient irrespective of age, sex, ethnic group and condition.

For a List of Codes, please see **Appendix A**

Exclusion criteria

Absolute contraindications:

The following exclusion criteria apply to the **exercise component** of cardiac rehabilitation. Patients should be encouraged to take part in the behaviour change, lifestyle and medical risk factor management and psychosocial health elements of the programme.

- Unstable Angina
- Decompensated Heart Failure
- Uncontrolled/symptomatic arrhythmias
- Severe and symptomatic Aortic Stenosis
- Compromised Complete Heart Block
- Acute systemic illness or fever
- Acute pericarditis or myocarditis
- Other metabolic conditions, such as acute thyroiditis, hypokalaemia or hyperkalaemia, hypovolaemia etc.
- Severe rejection (cardiac transplantation recipients)
- Resting systolic blood pressure of >200mmhg or diastolic BP >110mmhg (should be assessed case by case)
- orthostatic blood pressure (BP) drop of >20 mmHg with symptoms
- Resting ST segment displacement (>2 mm) other than from defined cause i.e. LVH by voltage
- Severe orthopaedic conditions that would prohibit exercise due to physical limitation
- Endocarditis (prior to disease stability)
- Symptomatic Thromboembolic disease
- Unstable sternum

Relative exclusion criteria for patients who have not completed ETT

Relative contraindications – patients with the following conditions should be assessed for their

suitability to take part in the exercise component of cardiac rehabilitation programmes:

- Physical limitations
- Uncontrolled diabetes (should be assessed in accordance with local protocol and on a case-by-case basis)
- History of Ventricular Arrhythmias
- **AAA** – seek consultant consent

Absolute Exclusion criteria following ETT

- Unable to complete 3 minutes or more of the Bruce protocol due to ischaemia
- Developed greater than 2mm of ST depression
- Developed complex ventricular arrhythmias during part of the investigation
- Experienced severe chest pain or shortness of breath
- Experienced a significant drop in systolic blood pressure (>15mmHg) during the Exercise Tolerance Test
- History of unresolved unstable angina since revascularisation

Relative Exclusion criteria

- Wounds not healed
- History of new or recurrent symptoms of breathlessness, palpitations, dizziness or lethargy

Those patients who are excluded will be encouraged to continue with their individual home exercise programmes.

Referral sources

The Provider shall accept all referrals from the following providers:

- acute care
- tertiary centres
- specialist heart centres
- rapid access chest pain clinics
- GP practices
- Heart failure services.
- Community services i.e. LCHS

Interdependencies with other services

In three of the quadrants of Lincolnshire services are provided across community and secondary care cardiac teams, close working relationships and excellent communication need to exist between providers to ensure seamless patient care, these relationships also need to extend to other providers of care that the patient will access before, after and during rehabilitation, i.e. cardiac wards/general hospital wards, GPs, community services, independent sector, social care, mental health services etc.

Patients that have more than one long term condition (cardiac/pulmonary) will receive integrated

care to ensure a single rehabilitation pathway suitable to their overall personal health needs. Patients will be able to access a menu based service comprising physical activity, general health improvement and risk factor management, as well disease specific management.

The cardiac rehabilitation team should work closely with providers of pulmonary rehabilitation services to ensure a joined up rehabilitation programme for a patient that avoids duplication (e.g. lifestyle improvement) and provides the correct exercise programme for patients (e.g. low level exercise for heart failure patients.

Location/Access of service

Care across this seven stage pathway will involve different healthcare settings and organisations to meet the needs of the patient. The following options will be provided for patients:

1. Hospital based services
2. Community-based services (i.e. local clinics, GP practices, village halls)
3. Home-based provision of service (i.e. assessments, web based provision)

There will be a requirement for providers to review location and access issues that prevent or deter patients being able to attend cardiac rehabilitation programmes and work towards ensuring local clinics are provided.

Current Provision –

	Phase 1	**Phase 2**	**Phase 3**
North West	ULHT CRS Lincoln Hospital	LCHS CCRS patient home/local clinic	ULHT CRS Lincoln Hospital LCHS CCRS John Coupland Gainsborough
North East	LCHS CCRS Louth Hospital	LCHS CCRS patient home/local clinic	LCHS CCRS Burgh Le Marsh & Louth Hospital
South East	ULHT CRS Pilgrim Hospital Boston/ Peterborough City Hospital	LCHS CCRS patient home/local clinic	ULHT CRS Pilgrim Hospital Boston LCHS CCRS Welland Hospital, Spalding
South West	ULHT CRS Grantham Hospital/Peterborough City Hospital	LCHS CCRS patient home/local clinic	ULHT CRS Grantham Hospital LCHS CCRS Stamford Hospital

The Tertiary Centres Papworth Hospital, Glenfield Hospital, Nottingham City Hospital, Hull Royal Infirmary, Scunthorpe General Hospital, Diana Princess Of Wales Hospital, Peterborough City

Hospital will referrer directly to Phase 2.

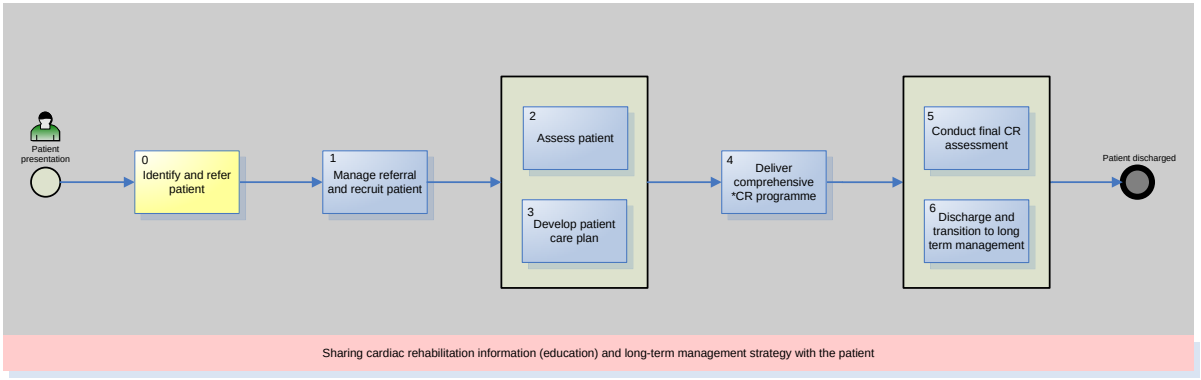
Days/hours of operation

Core working hours are Monday – Friday 9.00am – 5.00pm. There will be a requirement for providers to review the impact alternative working arrangements will have on patients being able to attend cardiac rehabilitation programmes and work towards the delivery of out of hours working within current establishment.

4. SERVICE DELIVERY

Cardiac rehabilitation pathway

The following diagram sets out the pathway for cardiac rehabilitation services. It shows seven stages in the pathway, Stages 0-6. Stages 1 to 6 reflect core stages in the cardiac rehabilitation pathway. Stage 0 is included in the service specification to confirm the obligations to be placed on the Stage 0 Provider by the commissioner.



*CR = cardiac rehabilitation

4.1. Stage 0– Identify and refer patient

4.1.1. The Stage 0 Provider shall commence an initial medical assessment to inform and/or confirm diagnosis and prognosis and identify eligible patients.

4.1.2. Stage 0 patients shall undergo the appropriate diagnostic test(s) to confirm diagnosis in accordance with clinical good practice (NICE CG48). The initial assessment investigations may include blood tests (e.g. troponin, BNP), ECGs, Echocardiograms, Coronary Angiography.

4.1.3. The Stage 0 Provider team shall actively recruit patients from all appropriate areas of the acute trust setting.

4.1.4. The Stage 0 Provider shall refer all eligible patients to the appropriate cardiac rehabilitation team within 24 hours of the appropriate diagnosis or discharge from in-patient care.

4.1.5. The Stage 0 Provider shall transmit all referrals to the cardiac rehabilitation service via

community based central booking point or via NHS net email, the latter being the preferred method.

4.1.6. Stage 0 Provider shall share information, educate and provide reassurance to patients**.** This will include:

- giving eligible patients reassurance/information regarding their medical evaluation, including advice on the core components of cardiac rehabilitation (BACR, 2007) in Stages 2 and 4
- listening to the patient's initial anxieties and address misconceptions about heart disease
- advising the patient that the community cardiac rehabilitation service will contact them regarding the next stages of their cardiac rehabilitation provision
- involving the patient's family and carer(s) through the sharing of information and via appropriate education regarding cardiac rehabilitation
- encouraging consultant cardiologists to provide information about cardiac rehabilitation as part of the shared decision making process.
- the prescription of effective medications and education about its use, benefits and harms
- a discharge plan

4.2. Stage 1 – Manage referral and recruit patient to cardiac rehabilitation programme

4.2.1. The cardiac rehabilitation team shall check the referral and accept all eligible patients registered with a GP within NHS Lincolnshire boundaries, regardless of location of referring Stage 0 Provider.

4.2.2. If the referral is rejected, the team shall record the reason and refer the patient on to GP supported management or an appropriate service. The Stage 0 Provider will be informed if they have referred an ineligible patient.

4.2.3. Patients shall be contacted within 3 operational days and offered a home visit or clinic appointment assessment for cardiac rehabilitation (initial offer) within 10 working days of discharge from receipt of referral.

4.2.4. PPCI patients should be treated as a priority. They will be contacted within 2 operational days and assessed within 5 operational days from the receipt of referral.

4.2.5. The Cardiac Rehabilitation team shall record the date of successful contact and the proposed assessment date should the patient accept.

4.2.6. The Cardiac Rehabilitation service shall re-offer (second offer) an assessment date to patients who are not ready and/or willing within a mutually agreed timeframe of the initial offer. If the patient is not willing to accept the third offer they shall be referred to GP-supported management, this will include a letter with a request for the patient to be added to the coronary

heart disease/heart failure register, as appropriate.

4.2.7. The cardiac rehabilitation team shall send patients who cannot successfully be contacted after 2 attempts, and within 8 operational days, an offer of an assessment in writing. If the offer is not accepted, or the patient does not respond, the patient shall be referred on to GP supported management.

4.3. Stage 2 – Assess patient for cardiac rehabilitation

4.3.1. Having recruited patients to cardiac rehabilitation, the cardiac rehabilitation team shall undertake an assessment of the patient. This assessment process should commence within 10 operational days from receipt of referral.

4.3.2. The assessment will be carried out in the patient's home, local clinic, by telephone or will be web based.

4.3.3. At the assessment appointment, the cardiac rehabilitation team shall assess the patient's needs against the following core components (BACR, 2007; NICE CG5), this will include identifying any issues that have the potential to impact on the patient's ability to make the desired lifestyle changes :

i) **Lifestyle assessment and review**:

a) Diversity of physical fitness levels and associated co-morbidities.

b) Physical activity status (e.g. questionnaires) and functional capacity (e.g. treadmill or cycle ergometry, walking tests [shuttle and/or timed] and step tests). Benchmark patient performance via their peak performance (MET) score.

c) BMI and waist circumference (see NICE CG48).

d) Smoking status and, if the patient is a smoker, their willingness to stop smoking.

e) Eating habits, including saturated fat (trans fat), Omega 3, salt and calorie intake and alcohol consumption (see NICE CG48).

f) Review involvement of cardiac support groups, all patients to be given information and signposting to other agencies e.g. social services.

ii) **Risk factor assessment and review** – this includes a) the assessment of medical drug management of key risk factors, namely blood pressure, lipid and glucose levels (for diabetic patients) and reviewing original plan from Stage 0 provider for meeting these. Cardiac rehabilitation staff should be involved with initiation and/or titration and optimisation of appropriate pharmacotherapy.

b) Utilising all relevant patient information, the cardiac rehabilitation team shall assess patient risk of a future cardiac event and classify the patient as being at low, medium or high risk using a locally agreed scoring method. This information shall be used to inform the staffing and resource requirements for safe and effective exercise interventions as part of the delivery of the patient's individualised care plan (see BACR and ACPICR guidance for impact of patient risk assessment on staffing and resources).

c) Resuscitation training is offered to all patients and family members as part of the cardiac rehabilitation education programme.

iii) **Psychosocial assessment and review:**

a) Psychological assessment, to include anxiety and depression using scores such as Hospital Anxiety and Depression Scale HADS (NICE CG90; NICE CG91).

b) Quality of life assessment using valid outcome tools such as the Dartmouth COOP Scales

iv) **Assessment and review of cardio-protective drug prescription and implantable devices**:

a) Assessment of the rehabilitation

b) Use of medication to manage cardiac conditions.

b) Confirm the patient's understanding of device settings and, where required, verification of these settings with the implanting service staff.

4.3.4. The results of the assessment shall be retained by the cardiac rehabilitation team and shall be used to benchmark the patient's clinical improvement at a later date.

4.3.5. The cardiac rehabilitation team shall ensure that patients with disabilities or limited mobility are not excluded from assessment and are guided to options that best meet their particular needs.

4.4. Stage 3 – Develop patient care plan

4.4.1. The cardiac rehabilitation team shall share information with the patient about the evidence-based options available within each of the relevant core components, taking into account the patient's individual needs from the assessment carried out as part of Stage 2:

4.4.2. The cardiac rehabilitation team shall offer choice and inform the patient of the types of cardiac rehabilitation intervention and locations of those interventions offered by the service.

4.4.3. Having identified patient needs, preferences and evidence-based options, the cardiac rehabilitation team shall identify the most appropriate options and agree with the patient clinical and patient-set goals. Where relevant, a patient-set goal shall be set for each core component. Each of the goals shall be specific, measurable, achievable, realistic and set against a timetable (SMART).

4.4.4. The cardiac rehabilitation team shall encourage carers, partners and family members to contribute to the long-term management goals of individual patients.

4.4.5. The cardiac rehabilitation team shall:

i. discuss and agree a Personalised Health Plan with the patient.
ii. give a copy of the health plan to the patient.
iii. make a copy of the health plan available to every provider of the relevant programme core

components.

iv. record onward referrals to any third party providers of the programme or providers of complementary/specialist services, e.g. LPfT, smoking cessation services.

4.4.6. Having agreed the care plan and approach with the patient, the cardiac rehabilitation teams shall identify the cardiac rehabilitation programme which best meets the patient's needs and preferences as set out in the care plan, they will discuss the available programmes with the patient, make appropriate bookings via a community based central booking point/SPA and confirm the start date of the cardiac rehabilitation programme, this will include:

- centre based exercise and education
- home programme (heart manual)
- web based programmes
- Home based walking programme
- Green Cardiac Rehabilitation Scheme

4.4.7. Where the patient is willing but is not ready to commence the programme (e.g. unstable heart failure patients), the cardiac rehabilitation team shall record that fact and ensure that a subsequent offer of cardiac rehabilitation is made to the patient.

4.5. Stage 4 – Deliver comprehensive cardiac rehabilitation programme

4.5.1. The Cardiac Rehabilitation Service shall offer a menu-based approach for each of the core components so that services are tailored to the individual needs and preferences of the patient.

4.5.2. Commencement of cardiac rehabilitation programmes should not exceed 10 operational days from assessment.

4.5.3. The programme shall include the following core components (BACR, 2007; NICE CG5), the precise level and extent of the components will vary according to the individual patient's needs:

i. **Lifestyle -** *Physical activity and exercise, diet and smoking cessation*

a) All patients to have echo/risk stratification prior to entering exercise and education programme.

b) All patients to be offered structured exercise sessions (minimum once weekly for 4 weeks/maximum 12 weeks) to meet their individual assessed needs as determined in their assessment, ensure that the exercise training component has an emphasis on cardiovascular and resistance training

c) The cardiac rehabilitation team shall review prescriptions with the patient and monitor appropriate exercise intervention to ensure safe and effective exercise:

- Haemodynamics (e.g. blood pressure, heart rate and rate-pressure product) shall be used to monitor the physiological load and intensity.
- A rating of perceived exertion shall be determined to enable patients to rate the

intensity of their exercise.

- the exercise training shall be based on up-to-date clinical practice guidelines on exercise (NICE CG48; ACPICR, 2009)

d) In addition to formal exercise interventions, the cardiac team shall promote regular physical activity (30 minutes' exercise five times per week)

e) The cardiac rehabilitation team shall ensure that special considerations and adaptations are made for specific patient groups:

- heart failure
- ICD
- cardiac transplantation and VADs

f) The cardiac rehabilitation team shall conduct on-going assessment of physical activity status (frequency and intensity) and functional capacity (peak fitness) as required, utilising the same assessment tools as in the assessment for cardiac rehabilitation stage (Stage 2) and the final assessment stage (Stage 5).

g) The cardiac rehabilitation team shall continue to assess, provide advice and determine appropriate intervention with regards to managing the following areas:

- BMI and waist circumference
- dietary habits and alcohol consumption
- weight management
- Psychological wellbeing
- Smoking

ii. **Education**

The cardiac rehabilitation team shall deliver educational interventions to advise and support patients with the most up-to-date evidence-based information, including:

- pathophysiology and symptoms
- physical activity, exercise, smoking and diet
- other risk factors such as blood pressure, lipids and glucose
- psychological issues such as anxiety and depression
- occupational factors and return to work
- sexual activity and sexual dysfunction
- pharmaceutical interventions
- surgical interventions and implantable devices
- cardiopulmonary resuscitation.

The cardiac rehabilitation team's educational interventions shall include individual and group support sessions, behavioural techniques, self-monitoring diaries and booklets.

iii. **Risk factor management**

The cardiac rehabilitation team shall continue to review the control of risk factors, adhering to individual guidance on how to reach overall agreed targets and maintaining guideline levels, (NICE CG48; NICE CG34; NICE CG66; NICE CG87; NICE CG15; NICE CG67, JBS2 Guidelines).

iv. **Psychosocial status and quality of life**

The cardiac rehabilitation team shall deliver and promote appropriate psychological interventions and self-management strategies during patient contact or via web based programmes.

The Provider shall ensure that the delivery of psychological interventions continues throughout the duration of the cardiac rehabilitation programme.

v. **Cardio-protective drug therapy and implantable devices**

The cardiac rehabilitation team shall review individual patient concordance with the applicable drug therapies and up titrate where appropriate (NICE CG48; BACR, 2007):

- thrombotic risk management
- rate and rhythm management
- fluid status and postural blood pressure.

Where necessary device settings may be verified with the appropriate implanting service staff.

The Provider shall ensure the review of the associated heart rate and rhythm control medication for patients with implanted devices in order to manage and control patients' physical activity and exercise ability and to improve quality of life.

vi. **Prescribing** - The cardiac rehabilitation team shall be involved with either direct initiation or up-titration of medication in liaison with the appropriate health professionals (e.g. the patient's GP and/or cardiologist). The Provider shall record all prescription or medication modification in the patient care plan and notify the GP and/or cardiologist.

The patient shall be advised by the relevant health professionals regarding the appropriate cardio-protective drug therapies. The relevant health professionals shall comply with NICE CG48 and local guidance.

vii. **Long-term management -** *Enhancement of the individual's own responsibility to pursue a healthy lifestyle:*

The cardiac rehabilitation team shall identify voluntary and commercial lifestyle and exercise opportunities and shall encourage the patient to take these up according to their own long-term needs and circumstances.

4.5.4. The cardiac rehabilitation team, with the patient's consent, shall encourage carers, partners and family members to contribute to the long-term management goals of individual patients.

4.5.5. The cardiac rehabilitation team shall include flexibility for patients to continue with the cardiac rehabilitation programme for a short time, either for reassurance, to regain confidence after an intervention or because, upon evaluation, the patient is not considered ready to self-manage and requires extra time.

4.5.6. In delivering the programme of cardiac rehabilitation described above the cardiac rehabilitation team shall:

- evaluate and monitor the patient's progress against the health plan and the patient's individual and clinical goals
- discuss and agree with the patient any necessary adjustments to the programme, the care plan and/or the patient's goals.
- shall record the outcome of the patient's progress against the goals and the date on which this progress was evaluated.
- complete any required onward referrals.

4.5.7. After attendance at minimum number of sessions for the delivery of core components (Stage 4) and once the patient has achieved the clinical and patient-set goals as set out in the care plan or demonstrated readiness to transfer to long-term management, the patient shall be booked in for a final assessment.

4.5.8. The cardiac rehabilitation team shall produce a long-term management plan as part of the discharge process for patients from the cardiac rehabilitation programme through to long-term management providers (e.g. GP and heart failure team, if applicable) in accordance with BACR (2007) guidance

4.6. Stage 5 – Conduct final assessment

4.6.1. The final assessment shall be at the point at which the patient is discharged from the cardiac rehabilitation programme and commences their transition into long-term management.

4.6.2. Final assessment information is important for evaluating (i) patient progress against defined goals; (ii) the clinical effectiveness of cardiac rehabilitation; (iii) the quality of the service provided; and (iv) achievement of outcomes. This shall be recorded in the patient care plan.

4.6.3. The cardiac rehabilitation team shall conduct the patient assessment utilising the same assessment tools as the baseline assessment (Stage 2) for cardiac rehabilitation. This shall be in a setting appropriate to the assessment including the patient's home or community setting.

4.7. Stage 6 – Discharge and transition to long term management

4.7.1. The cardiac rehabilitation team shall complete a written long-term management plan, as discussed and agreed with the patient and in accordance both with the long-term management

component defined in Stage 4 and with BACR (2007) guidance, this will be centred around:

- enhancement of the individual's own responsibility to pursue a healthy lifestyle
- continuity of care with primary care services and GPs.

4.7.2. The cardiac rehabilitation team shall send the long-term management plan and discharge letter to long-term management providers. This may include, where appropriate, a recommendation that the patient is entered onto an appropriate GP register (e.g. coronary heart disease register or heart failure register). GP supported management should include the monitoring and management of the relevant core components.

4.7.3. The cardiac rehabilitation team shall record all expressions of interest and onward referrals to long-term management providers, patient groups and support networks.

4.7.4. There shall be suitable risk stratification and documentation guidelines to assist appropriate referrals between the provider and long term management community programmes (for example, BACR Phase IV referral guidelines).

4.8. Staffing Competences

4.8.1. Standard 2, The BACPR Standards and Core Components for Cardiovascular Disease Prevention and Rehabilitation 2012 states that an integrated multidisciplinary team consisting of qualified and competent practitioners, led by a clinical coordinator is required to deliver effective cardiac rehabilitation.

4.8.2. The clinical coordinator/senior clinician will have responsibility for coordinating, managing and evaluating the service. The clinical leader should be suitably experienced to identify/update training needs, assess competency and provide clinical supervision for all Physiotherapists and Cardiac Rehabilitation Support Workers involved in the delivery of services. They will also have a key role in ensuring the smooth and consistent delivery of services between different providers and stages. Ideally they should possess a Specialist Qualification, Managerial and Leadership competencies, and be able to demonstrate Masters level thinking/learning, or equivalent. The role can be delivered as one role or split.

4.8.3. The delivery of the core components requires expertise from a range of different professionals, as listed below, working within their scope of practice. The composition of each team may differ but collectively the team must have the necessary knowledge, skills and competences to meet the standards and deliver all the components. The team may include the following:

-Cardiologist/community cardiologist/physician or general practitioner with special interest
-Nurse specialist
-Physiotherapist
-Dietician

-Psychologist
-Exercise specialist
-Occupational therapist
-Clerical administrator

4.8.4. Cardiac Rehabilitation Specialist Nurses should have the following as a minimum:

- RGN-NMC Registration
- Relevant Cardiac Post Basic Training
- Degree level qualification (or working towards) or equivalent experience
- Teaching and Assessing Qualification
- Non-Medical Prescribing Qualification
- Minimum of five years post registration, with three years in relevant speciality.

4.8.5. The cardiac rehabilitation team shall comply with relevant standards (BACR and ACIPCR), including staffing levels and staff skills based on patient risk assessment, location and equipment, including indication for level of resuscitation training.

5. Key Performance Indicators

In addition to completing the annual National Audit for Cardiac Rehabilitation (NACR) in order to inform service performance and develop service improvement initiatives, the provider will provide quarterly reports against the following KPI's:

KPI	Measure	Current Baseline	Estimated Target
Increase in the number of patients offered cardiac rehabilitation	The percentage of patients offered to take part in cardiac rehabilitation from a total of all eligible patients		Yr 1 85%
Increase in the number of patients accepting a place on the programme	The percentage of patients offered and who choose to take part in cardiac rehabilitation from a total of all eligible patients		Yr 1 85%
Increase in the number of patients completing cardiac rehabilitation programme (all stages of menu based approach)	The percentage of patients completing cardiac rehabilitation from the total who were willing at Stage 1 to commence programme		Yr 1 75%
Patients will be identified, referred and	The percentage of patients who can be reported to		Yr 1 90%

have access to cardiac rehabilitation service within specified time periods	receive the following aspects of care: -Eligible patients at Stage 0 have been identified and referred with 24 hours. -Patient's acceptance onto service and first contact occurs within 3 operational days from receipt of referral. -Patient's initial assessment to occur within 10 working days. -Patient commences programme no later than 10 operational days from initial assessment.			
Specific cohorts of patients be identified, referred and have access to cardiac rehabilitation programmes within shorter periods to support improved outcomes for patient.	PPCI patients will be contacted within 2 operational days and offered initial assessment within 5 working days.		Yr 1 80%	
Reduction in patient re-admissions for another cardiac event in the 12 months after completing cardiac rehabilitation	Number of hospital re-admissions for another cardiac event over one financial year as a percentage of re-admissions in baseline year.		Yr 1 15%	
Increase in the number of patients with multiple co-morbidities offered an integrated rehabilitation programme.	The numbers of patients offered an integrated rehabilitation as a percentage of all eligible patients.		Yr 1 5%	
Patients who have completed the programme will have an improvement in comparative outcomes: -Function -Quality of Life -Anxiety and Depression -BMI	Report percentage of patients demonstrated evidence based outcome in one or more of the following: -Function test -Quality of life survey (Dartmouth COOP Scales) -Anxiety and Depression (HADS)		Yr 1 85%	

-Waist measurement -Smoking Status -Total Activity Measure 2 (TAM2)	-BMI -Waist measurement -Smoking Status -Total Activity Measure 2 (TAM2)		
More patients will be satisfied with the service they receive for rehabilitation	Percentage of patients surveyed satisfied with rehabilitation services (based on >50% of patients who have completed cardiac rehabilitation returning survey)		Yr 3 85%
In order to ensure effective and holistic management of patients the cardiac team will consist of qualified and competent practitioners in specific areas of expertise.	Number of specialist professionals who are: -RGN-NMC Registration -Relevant Cardiac Post Basic Training -Degree level qualification (or working towards) or equivalent experience -Teaching and Assessing Qualification -Minimum of five years post registration, with three years in relevant speciality. -Non-Medical Prescribing Qualification		Yr 3 100% Yr 3 100%

Views will be sought from relevant stakeholders regarding the quality and effectiveness of the service and its future development this may include patients and carers, GP, etc..

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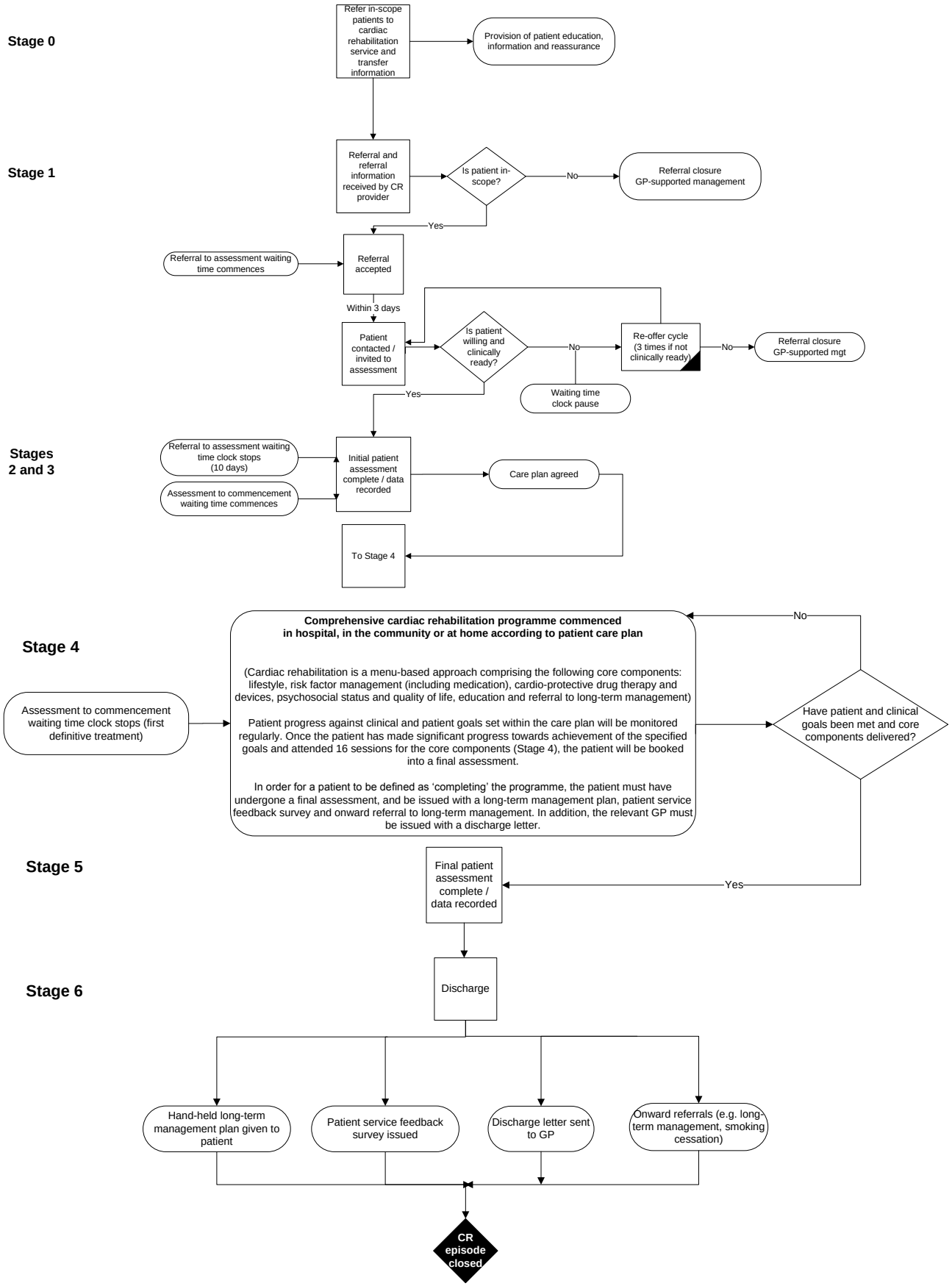
Cardiac Rehabilitation Services Pathway



Appendix A - List of Codes for In-Scope Patients

Patients who are diagnosed and undergo the procedures listed (ICD10 and OPCS4 codes) below are deemed to be in-scope for and would benefit from taking part in the cardiac rehabilitation programme.

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
Acute myocardial infarction (AMI)	**I21**	Acute myocardial infarction	N/A	N/A
	I210	Acute transmural myocardial infarction of anterior wall		
	I211	Acute transmural myocardial infarction of inferior wall		
	I212	Acute transmural myocardial infarction of other sites		
	I213	Acute transmural myocardial infarction of unspecified site		
	I214	Acute subendocardial myocardial infarction		
	I219	Acute myocardial infarction, unspecified		
	I22	Subsequent myocardial infarction		
	I220	Subsequent myocardial infarction of anterior wall		
	I221	Subsequent myocardial infarction of inferior wall		
	I228	Subsequent myocardial infarction of other sites		
	I229	Subsequent myocardial infarction of unspecified site		
Percutaneous coronary intervention (PCI)	N/A	N/A	**K49**	Transluminal balloon angioplasty of coronary artery
			K491	Transluminal balloon angioplasty of coronary artery, percutaneous transluminal balloon angioplasty of one coronary artery
			K492	Transluminal balloon angioplasty of coronary artery, percutaneous transluminal balloon angioplasty of multiple coronary arteries
			K493	Transluminal balloon angioplasty of coronary artery, percutaneous transluminal balloon

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
				angioplasty of bypass graft of coronary artery
			K494	Percutaneous transluminal cutting balloon angioplasty of coronary artery
			K491	Percutaneous transluminal balloon angioplasty of one coronary artery
			K492	Percutaneous transluminal balloon angioplasty of multiple coronary arteries
			K493	Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery
			K498	Other specified transluminal balloon angioplasty of coronary artery
			K499	Unspecified transluminal balloon angioplasty of coronary artery
			K50	Other therapeutic transluminal operations on coronary artery (K50)
			K501	Percutaneous transluminal laser coronary angioplasty
			K502	Percutaneous transluminal coronary thrombolysis using streptokinase
			K503	Percutaneous transluminal injection of therapeutic substance into coronary artery NEC
			K504	Percutaneous transluminal atherectomy of coronary artery
			K508	Other specified other therapeutic transluminal operations on coronary artery
			K509	Unspecified other therapeutic transluminal operations on coronary artery
			K75	Percutaneous transluminal balloon angioplasty and stenting of coronary artery (K75)
			K751	Percutaneous transluminal balloon angioplasty and insertion of one or two drug-eluting stents into coronary artery
			K752	Percutaneous transluminal balloon angioplasty and insertion of three or more drug-eluting stents into coronary artery
			K753	Percutaneous transluminal balloon angioplasty and insertion of one or two stents into coronary artery
			K754	Percutaneous transluminal balloon angioplasty and insertion of three or more stents into coronary artery NEC
			K758	Other specified percutaneous transluminal balloon angioplasty and stenting of coronary

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
				artery
			K759	Unspecified percutaneous transluminal balloon angioplasty and stenting of coronary artery
Coronary artery bypass graft (CABG)	N/A	N/A	**K40**	Saphenous vein graft replacement of coronary artery (K40)
			K401	Saphenous vein graft replacement of one coronary artery
			K402	Saphenous vein graft replacement of two coronary arteries
			K403	Saphenous vein graft replacement of three coronary arteries
			K404	Saphenous vein graft replacement of four or more coronary arteries
			K408	Other specified saphenous vein graft replacement of coronary artery
			K409	Unspecified saphenous vein graft replacement of coronary artery
			K41	Other autograft replacement of coronary artery (K41)
			K411	Autograft replacement of one coronary artery NEC
			K412	Autograft replacement of two coronary arteries NEC
			K413	Autograft replacement of three coronary arteries NEC
			K414	Autograft replacement of four or more coronary arteries NEC
			K418	Other specified other autograft replacement of coronary artery
			K419	Unspecified other autograft replacement of coronary artery
			K42	Allograft replacement of coronary artery (K42)
			K421	Allograft replacement of one coronary artery
			K422	Allograft replacement of two coronary arteries
			K423	Allograft replacement of three coronary arteries
			K424	Allograft replacement of four or more coronary arteries
			K428	Other specified allograft replacement of coronary artery
			K429	Unspecified allograft replacement of coronary artery

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K43	Prosthetic replacement of coronary artery (K43)
			K431	Prosthetic replacement of one coronary artery
			K432	Prosthetic replacement of two coronary arteries
			K433	Prosthetic replacement of three coronary arteries
			K434	Prosthetic replacement of four or more coronary arteries
			K438	Other specified prosthetic replacement of coronary artery
			K439	Unspecified prosthetic replacement of coronary artery
			K44	Other replacement of coronary artery (K44)
			K441	Replacement of coronary arteries using multiple methods
			K442	Revision of replacement of coronary artery
			K448	Other specified other replacement of coronary artery
			K449	Unspecified other replacement of coronary artery
			K45	Connection of thoracic artery to coronary artery (K45)
			K451	Double anastomosis of mammary arteries to coronary arteries
			K452	Double anastomosis of thoracic arteries to coronary arteries NEC
			K453	Anastomosis of mammary artery to left anterior descending coronary artery
			K454	Anastomosis of mammary artery to coronary artery NEC
			K455	Anastomosis of thoracic artery to coronary artery NEC
			K456	Revision of connection of thoracic artery to coronary artery
			K458	Other specified connection of thoracic artery to coronary artery
			K459	Unspecified connection of thoracic artery to coronary artery
			K46	Other bypass of coronary artery (K46)
			K461	Double implantation of mammary arteries into heart
			K462	Double implantation of thoracic arteries into heart NEC

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K463	Implantation of mammary artery into heart NEC
			K464	Implantation of thoracic artery into heart NEC
			K465	Revision of implantation of thoracic artery into heart
			K468	Other specified other bypass of coronary artery
			K469	Unspecified other bypass of coronary artery
Newly diagnosed heart failure	I500	Congestive heart failure	N/A	N/A
	I501	Left ventricular failure		
	I509	Heart failure, unspecified		
	I110	Hypertensive heart disease with (congestive) heart failure		
	I130	Hypertensive heart and renal disease with (congestive) heart failure		
	I132	Hypertensive heart and renal disease with both (congestive) heart failure and renal failure		
	I420	Dilated cardiomyopathy		
	I255	Ischaemic cardiomyopathy		
	I429	Cardiomyopathy, unspecified		
	I515	Myocardial degeneration (includes, but is not limited to, degenerative heart failure)		
	I971	Other functional disturbances following cardiac surgery (includes, but is not limited to, heart failure following cardiac surgery)		
Valve surgery	N/A	N/A	**K25**	Plastic repair of mitral valve (K25)

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K251	Allograft replacement of mitral valve
			K252	Xenograft replacement of mitral valve
			K253	Prosthetic replacement of mitral valve
			K254	Replacement of mitral valve NEC
			K255	Mitral valve repair NEC
			K258	Other specified plastic repair of mitral valve
			K259	Unspecified plastic repair of mitral valve
			K26	Plastic repair of aortic valve (K26)
			K261	Allograft replacement of aortic valve
			K262	Xenograft replacement of aortic valve
			K263	Prosthetic replacement of aortic valve
			K264	Replacement of aortic valve NEC
			K265	Aortic valve repair NEC
			K268	Other specified plastic repair of aortic valve
			K269	Unspecified plastic repair of aortic valve
			K27	Plastic repair of tricuspid valve (K27)
			K271	Allograft replacement of tricuspid valve
			K272	Xenograft replacement of tricuspid valve
			K273	Prosthetic replacement of tricuspid valve
			K274	Replacement of tricuspid valve NEC
			K275	Repositioning of tricuspid valve
			K276	Tricuspid valve repair NEC
			K278	Other specified plastic repair of tricuspid valve
			K279	Unspecified plastic repair of tricuspid valve

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K28	Plastic repair of pulmonary valve (K28)
			K281	Allograft replacement of pulmonary valve
			K282	Xenograft replacement of pulmonary valve
			K283	Prosthetic replacement of pulmonary valve
			K284	Replacement of pulmonary valve NEC
			K285	Pulmonary valve repair NEC
			K288	Other specified plastic repair of pulmonary valve
			K289	Unspecified plastic repair of pulmonary valve
			K29	Plastic repair of unspecified valve of heart (K29)
			K291	Allograft replacement of valve of heart NEC
			K292	Xenograft replacement of valve of heart NEC
			K293	Prosthetic replacement of valve of heart NEC
			K294	Replacement of valve of heart NEC
			K295	Repair of valve of heart NEC
			K296	Truncal valve repair
			K297	Replacement of truncal valve
			K298	Other specified plastic repair of unspecified valve of heart
			K299	Unspecified plastic repair of unspecified valve of heart
			K30	Revision of plastic repair of valve of heart (K30)
			K301	Revision of plastic repair of mitral valve
			K302	Revision of plastic repair of aortic valve
			K303	Revision of plastic repair of tricuspid valve
			K304	Revision of plastic repair of pulmonary valve
			K305	Revision of plastic repair of truncal valve

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K308	Other specified revision of plastic repair of valve of heart
			K309	Unspecified revision of plastic repair of valve of heart
			K31	Open incision of valve of heart (K31)
			K311	Open mitral valvotomy
			K312	Open aortic valvotomy
			K313	Open tricuspid valvotomy
			K314	Open pulmonary valvotomy
			K315	Open truncal valvotomy
			K318	Other specified open incision of valve of heart
			K319	Unspecified open incision of valve of heart
			K32	Closed incision of valve of heart (K32)
			K321	Closed mitral valvotomy
			K322	Closed aortic valvotomy
			K323	Closed tricuspid valvotomy
			K324	Closed pulmonary valvotomy
			K328	Other specified closed incision of valve of heart
			K329	Unspecified closed incision of valve of heart
			K33	Operations on aortic root (K33)
			K331	Aortic root replacement using pulmonary valve autograft with right ventricle to pulmonary artery valved conduit
			K332	Aortic root replacement using pulmonary valve autograft with right ventricle to pulmonary artery valved conduit and aortoventriculoplasty
			K333	Aortic root replacement using homograft
			K334	Aortic root replacement using mechanical prosthesis

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K335	Aortic root replacement NEC
			K336	Aortoventriculoplasty with pulmonary valve autograft
			K338	Other specified operations on aortic root
			K339	Unspecified operations on aortic root
			K34	Other open operations on valve of heart (K34)
			K341	Annuloplasty of mitral valve
			K342	Annuloplasty of tricuspid valve
			K343	Annuloplasty of valve of heart NEC
			K344	Excision of vegetations of valve of heart
			K345	Closure of tricuspid valve
			K346	Closure of pulmonary valve
			K348	Other specified other open operations on valve of heart
			K349	Unspecified other open operations on valve of heart
			K35	Therapeutic transluminal operations on valve of heart (K35)
			K351	Percutaneous transluminal mitral valvotomy
			K352	Percutaneous transluminal aortic valvotomy
			K353	Percutaneous transluminal tricuspid valvotomy
			K354	Percutaneous transluminal pulmonary valvotomy
			K355	Percutaneous transluminal valvuloplasty
			K356	Percutaneous transluminal pulmonary valve perforation and dilation
			K357	Percutaneous transluminal pulmonary valve replacement
			K358	Other specified therapeutic transluminal operations on valve of heart
			K359	Unspecified therapeutic transluminal operations on valve of heart
Implantable cardioverter			K591	Implantation of cardioverter defibrillator using one electrode lead

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
defibrillator (ICD)				
			K592	Implantation of cardioverter defibrillator using two electrode leads
			K596	Implantation of cardioverter defibrillator using three electrode leads
			K598	Other specified cardioverter defibrillator introduced through the vein
			K599	Unspecified cardioverter defibrillator introduced through the vein
Cardiac resynchronisation therapy (CRT)			K601	Implantation of intravenous cardiac pacemaker system NEC
			K602	Re-siting of lead of intravenous cardiac pacemaker system
			K603	Renewal of intravenous cardiac pacemaker system
			K604	Removal of intravenous cardiac pacemaker system
			K605	Implantation of intravenous single chamber cardiac pacemaker system
			K606	Implantation of intravenous dual chamber cardiac pacemaker system
			K607	Implantation of intravenous biventricular cardiac pacemaker system
			K608	Other specified cardiac pacemaker system introduced through vein
			K609	Unspecified cardiac pacemaker system introduced through vein
			K611	Implantation of cardiac pacemaker system NEC
			K612	Re-siting of lead of cardiac pacemaker system NEC
			K613	Renewal of cardiac pacemaker system NEC
			K617	Implantation of biventricular cardiac pacemaker system
			K618	Other specified other cardiac pacemaker system
			K619	Unspecified other cardiac pacemaker system
Heart transplants	N/A	N/A	**K01**	Transplantation of heart and lung (K01)
			K011	Allotransplantation of heart and lung

	ICD10 diagnostic codes in primary diagnosis field		OPCS4 codes in primary procedure field	
Key event	ICD10 code	ICD10 name	OPCS4 code	OPCS4 name
			K012	Revision of transplantation of heart and lung
			K018	Other specified transplantation of heart and lung
			K019	Unspecified transplantation of heart and lung
			K02	Other transplantation of heart (K02)
			K021	Allotransplantation of heart NEC
			K023	Implantation of prosthetic heart
			K024	Piggy back transplantation of heart
			K025	Revision of implantation of prosthetic heart
			K026	Revision of transplantation of heart NEC
			K028	Other specified other transplantation of heart
			K029	Unspecified other transplantation of heart
Ventricular assist device (VAD)			**K541**	Open implantation of ventricular assist device
				PLUS
			Z943	Left-sided operation
				and EXCLUDING
			Y705	Temporary operations
Angina	I200	Unstable angina	**N/A**	N/A
ANGINA CODES LISTED BELOW ARE NOT INCLUDED IN THE ANALYSIS TO DATE AND ARE SUBJECT TO WIDER DISCUSSION/CONSULTATION				
	I201	Angina pectoris with documented spasm		
	I208	Other forms of angina pectoris		
	I209	Angina pectoris, unspecified		