

National Audit of Cardiac Rehabilitation USER GUIDE – Data Entry

Registering and Logging In

To register for access to the audit, you need to have completed the 'User Registration Form' and this needs to be authorised by your Caldicott Guardian. The form can be found here:

<http://www.cardiacrehabilitation.org.uk/downloads.htm>

or you can email the team asking for a copy. The CG needs to email the form directly to enquiries@nhsdigital.nhs.uk who will confirm registration by email.

All new users need this form completed and authorised. It is possible to have a login to more than one programme if you work across more than one – please speak to the team for further information.

You also need to go to the web page <https://clinicalaudit.hscic.gov.uk/> and create an SSO (Single Sign On) account, using the same email address registered on the form.



[Clinical Audit Home](#) |

Clinical Audit Home

Welcome to Clinical Audit.

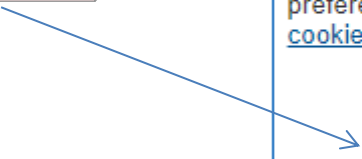
All the audits that are available to you are accessible here, in one place.

To access a clinical audit please **Sign In** using the link at the top of the page.



Click on 'Sign In'

Register your SSO account here using the same email address that was authorised on the User Registration form.



Sign in

Username

Password

[Sign in](#)

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[Register](#)

Having trouble? Contact us on 0300 303 5678 or enquiries@nhsdigital.nhs.uk

Using the email you've registered on the SSO as your Username, and the password you registered, sign in to the database.

NB: If you need to put data on for more than one programme/site, with different programme codes, you will need a unique login for each, using different emails.

Clinical Audit Home

Welcome to Clinical Audit.

All the audits that are available to you are accessible here, in one place. If you don't see an audit which you think you should be able to access please contact us.

National Audit of Cardiac Rehabilitation

Select the audit

The top menu – available at any time:

[Clinical Audit Home](#) | [NACR Home](#) | [Add/Search for Patient Record](#) | [Reporting](#) | [File Submission Dashboard](#)

Clinical Audit Home: will take you to the list of available audits (usually just NACR)

NACR Home: will take you to the list of actions available for NACR

Add/Search for Patient Record: Add a new patient or find an existing one

Reporting: List of available reports that can be run for your NACR data

File Submission Dashboard: For programmes that import their data from another system.

The NACR Home page:

(including contact details for queries)



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You are signed in as NACR - Nerina

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National Audit of Cardiac Rehabilitation

[Add / Search for Patient Record](#)

[File Submission Dashboard](#)

[Reporting](#)

Need help?

For clinical or data entry queries about the audit, please contact the NACR team on:

01904 321326

nerina.onion@york.ac.uk

For technical problems and login queries, please contact NHS Digital on:

0300 303 5678

enquiries@nhsdigital.nhs.uk

Add / Search for Patient Record

NHS Number:

Date of Birth:

Submit

To add or search for a patient you must put in the patient's NHS number and DOB. **You cannot enter a patient on the NACR database without a valid NHS number.** When you have done this, click on Submit.

Adding a new Patient:

Patient Information

Patient Details

NHS Number: ⓘ **required*

Date of birth: ⓘ **required*

Forename: ⓘ

Surname: ⓘ

Hospital number: ⓘ

Date of death: ⓘ

Gender: -- Please Select -- ⓘ

Marital status: -- Please Select -- ⓘ

Ethnic group: -- Please Select -- ⓘ

Address line1: ⓘ

Address line2: ⓘ

Address line3: ⓘ

Postcode: ⓘ

Telephone number:

GP practice code: ⓘ

Did you measure patient satisfaction?: -- Please Select -- ⓘ

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If the patient is already on the database you will be taken to the 'Record Tree' showing their existing NACR records.

If they are a new patient, you will be taken to the Patient Details screen. The first 2 fields are mandatory (**required*)

The ⓘ icons are online help and information – hover your mouse cursor over each one to read the content.

Once completed, click on Submit. This will create a new patient record.

NB: we don't receive any personal identifiable information at NACR.

- Gender, Marital Status and Ethnic Group, plus Postcode information (we don't receive the full postcode) and GP Code are all used as part of the audit reporting (other fields may be used for audit related research).

NHS Number: 883 647 3067 Date Of Birth: 19/05/1956 Name: John Smith

Record Tree

Patient: 883 647 3067 [Edit Record](#) [Delete Record](#) [Add Initiating Event](#)

You will then be taken to the 'Record Tree'. All of a patient's records can be viewed/edited here. To continue adding the patient details, click 'Add Initiating Event'

Initiating Event

Initiating Event Details

Initiating event: -- Please Select -- **required*

Ankle Brachial Indice Ratio:

Initiating event date: **required*

Treatment associated with IE(before rehab): --Please Select--

Treatment Date:

Discharge date:

Invited to join date:

Source of referral: -- Please Select --

Referring Trust (Initiating Event): -- Please Select --

Referred by: -- Please Select --

Assessment 2 due (follow up):

Assessment 3 due (follow up):

Risk assesment (BACPR): -- Please Select --

Acute events during rehab: --Please Select--

Previous events: --Please Select--

Comorbidity: --Please Select--

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The Initiating Event and the Initiating Event Date are mandatory fields. Once the record is completed, click on Submit.

If a patient has **no** diagnosed Previous Events or Comorbidities please select No/None from the dropdown list.

Initiating event: the reason the patient was referred to rehab

Ankle Brachial Indice Ratio: only used when patient has Peripheral Arterial Disease as an initiating event

Initiating event date: date of event that resulted in referral to rehab

Treatment associated with IE (before rehab): treatment had as a result of the IE. You can select more than one.

Treatment Date: if more than one, date of last treatment

Discharge date: date of last discharge from hospital

Invited to join date: date that the patient is given a formal start date for their structured rehab programme (Core/Phase 3) – e.g. Date of the letter / email / phone call giving them this start date

Source of referral: type of referral

Referring Trust (Initiating Event): which trust were they referred from if not your own

Referred by: staff member

[Assessment 2 due (follow up): auto populates (from Ass 1 date)]

[Assessment 3 due (follow up): auto populates (from Ass 1 date)]

Risk assessment (BACPR): As assessed using BACPR guidelines

Acute events during rehab: if patient has an event, but continues with their rehab (if the event is severe and they start the whole rehab process again, then this would be a new Initiating Event).

Previous events: Previous cardiac event(s) prior to this event. If none diagnosed, please select No/None.

Comorbidity: Other illnesses. If none diagnosed, please select No/None.

- IE / IE Date (both mandatory fields), Treatment, Previous Events and Comorbidity are primarily used in the annual report (other fields may be used for audit related research)

The screenshot shows a web interface for an NHS system. At the top, a yellow banner states: "You have successfully created an Initiating Event record". Below this, a header bar displays patient information: "NHS Number: 883 647 3067", "Date Of Birth: 19/05/1956", and "Name: John Smith". The main content area is titled "Record Tree" and contains a hierarchical list of records:

- Patient: 883 647 3067** with links: Edit Record, Delete Record, Add Initiating Event
- Initiating Event: 01/04/2013** with links: Edit Record, Delete Record
- Rehabilitation** with links: Add Phase, Add Commissioning pack
- Assessment** with link: Add record

A blue arrow points from the "Add Commissioning pack" link to a text box on the right.

After clicking submit, you will go back to the Record Tree – and you now have a choice to add Rehabilitation records, and Assessment records.

Rehabilitation Records

The Rehabilitation Record has 2 choices – either to 'Add Phase' or 'Add Commissioning Pack' depending on which fits better with how your programme runs. Many programmes now find the Commissioning Pack (Early/Core) is a better representation of their programme – if in doubt, please contact the NACR team for advice. The record content is virtually identical, whether you use Phases or Commissioning pack – they are different ways of measuring the same activity.

A patient can have multiple phases, or a combination of phases/commissioning pack records depending on where different parts of rehab have happened.

Only add a record for the part of rehab that your programme offers.

e.g. If another programme has already put a Phase 1 record on, but you've also provided Phase 1, create another Phase 1 record for your activity, don't amend the existing record (as this will affect your phase 'count')

NB: We'd like rehab records for all patients referred to your service – including those who don't start (they would have a rehab record with a 'reason for not taking part') and those who start but don't complete (they would have a 'reason for not completing')

Rehabilitation

Rehabilitation Details

Phase: -- Please Select -- *required*

Referred Date:

Phase start date:

Phase completed date:

Reason for not taking part: -- Please Select --

Reason for not completing: -- Please Select --

Rehabilitation delivery: --Please Select--

Number of sessions:

Onward referral: --Please Select--

Discharge to Trust: -- Please Select --

How likely are you to Recommend the service?: -- Please Select --

[< Back](#) [Submit >](#)

Phase: Phase (1-4) or Early/Core if using commissioning pack.

Phase 1 – in hospital

Phase 2 – immediately post discharge

Phase 3 – Structured programme of rehab that starts with comprehensive assessment, and is assessed again on completion

Phase 4 – long term rehab (usually in the community)

Early rehab – in hospital and immediately post discharge (anything prior to the start of the structured programme)

Core rehab - Structured programme of rehab that starts with comprehensive assessment, and is assessed again on completion

Referred Date: Phase 1 and Early – date in-hospital team becomes aware of the patient;

Phase 2/3 and Core – referral date after the patient has left hospital. If referral is from another trust, the date the referral is received; if patient remains within the same trust/team then date of discharge from hospital (as the date the patient comes into the outpatient team's care).

Phase start date - for Phase 1 or Early the date the patient is first seen on the ward; for Phase 2, first contact after discharge; for Phase 3 or Core, the start of the

structured rehab programme. We have a 'Start Definition' for Phase 3/Core, which can be found here: <http://www.cardiacrehabilitation.org.uk/start-of-core.htm>

Phase completed date - date the relevant phase is completed (if patient completes)

Reason for not taking part - if a patient does not start a phase, don't put a start date, put a reason for not taking part instead

Reason for not completing - if a patient starts but does not complete, don't put a completed date, use a reason for not completing instead

Rehabilitation delivery - what sort of programme the patient has had – this new list is primarily focussed on Core/Phase 3 delivery mode, not types of patient contact

Number of sessions - for the particular part of rehab being recorded. We have a sessions statement which can be found

here: <http://www.cardiacrehabilitation.org.uk/statement.htm>

Onward Referral - where the patient is referred after that phase

Discharge to trust - if they are discharged/referred to another trust

How likely... - if you collect this

- We use all the rehab record fields in the audit, apart from the last two.

NHS Number: 883 647 3067 Date Of Birth: 19/05/1956 Name: John Smith

Record Tree

- 📁 Patient: 883 647 3067 Edit Record Delete Record Add Initiating Event
 - 📁 Initiating Event: 01/04/2013 Edit Record Delete Record
 - 📁 Rehabilitation Add Phase
 - 📄 Rehabilitation: Phase [3] [19/04/2013] Edit Record Delete Record
 - 📁 Assessment Add record

After you've saved the Rehab Record, you'll go back to the Record Tree, with your Rehabilitation record shown (phase or commissioning pack).

Click on 'Add Record' next to Assessment.

Assessment



Each Assessment Record has 4 tabs – Examination and Tests / Quality / Drugs / Core Components.

We use Assessment 1 (before rehab); Assessment 2 (after rehab) and, if possible, Assessment 3 (at 12 months) for the audit. These are to be completed by the rehab team offering the Core/Phase 3 rehab programme. (There is an additional Assessment 1a for any extra assessment information, should you need it **but this data is not used in the audit**). The Assessments are a combination of the patient Questionnaires and clinical measurements – so even if a patient doesn't complete their questionnaire, they can still have measurements recorded in the Assessment Record.


Assessments should include, wherever possible, measures of psychosocial wellbeing (e.g. HADS / QOL); lifestyle risk factors (e.g. smoking, physical activity); body measurements (e.g. height, weight, BMI, blood pressure) with additional functional capacity measurement, as outlined in the BACPR Standards (2017). Whatever is recorded at Ass 1 should then be followed up at Ass 2 so that outcomes are available for the patient.

Assessment

Examinations and Tests	Quality	Drugs	Core Components
Assessment date:	<input type="text"/>	? <i>required</i>	
Assessment Number:	-- Please Select --	? <i>required</i>	
Reason for not sending questionnaire:	-- Please Select --	?	
Weight unit:	<input checked="" type="radio"/> Metric <input type="radio"/> Imperial ?		
kg:	<input type="text"/>		
Stone:	<input type="text"/>		
Pound:	<input type="text"/>		
Height unit:	<input checked="" type="radio"/> Metric <input type="radio"/> Imperial ?		
cm:	<input type="text"/>		
Feet:	<input type="text"/>		
Inch:	<input type="text"/>		
BMI (kg/m2):	<input type="text"/>	?	
Waist unit:	<input checked="" type="radio"/> Metric <input type="radio"/> Imperial ?		
cm:	<input type="text"/>		
Inch:	<input type="text"/>		
Blood pressure systolic:	<input type="text"/>		
Blood pressure diastolic:	<input type="text"/>		
Smoked:	-- Please Select --		
Cholesterol total:	<input type="text"/>		
Cholesterol HDL:	<input type="text"/>		
Cholesterol LDL:	<input type="text"/>		
Cholesterol ratio:	<input type="text"/>		
Triglycerides:	<input type="text"/>		
HbA1c unit:	-- Please Select --	?	
HbA1c:	<input type="text"/>	?	
Units of alcohol/wk:	<input type="text"/>	?	
Canadian Angina Scale:	-- Please Select --	?	
TAM2 (MET-minutes):	<input type="text"/>		
Fitness level (METS):	<input type="text"/>	?	
30 mins 5 times a week?:	-- Please Select --	?	
75 mins of vigorous exercise a week?:	-- Please Select --	?	
Heart Failure (NYHA):	-- Please Select --	?	
Mediterranean diet:	<input type="text"/>		
Six Minute Walk			
Metres:	<input type="text"/>		
Minutes:	<input type="text"/>		
Shuttle Walk			
Level:	<input type="text"/>		
Sub Level:	<input type="text"/>		
Total Metres:	<input type="text"/>		

Examinations and Tests Tab:

Weight, height and waist measurements can be entered in metric or imperial (metric is saved on the database) BMI calculates automatically (once you submit the record). The TAM2 MET minutes automatically calculates using a pop-up box. Record either Shuttle Walk Test or 6 Minute Walk Test, or use the 'Fitness Level (METS)' box if you do another MET related exercise test instead (e.g. Treadmill / exercise bike / Chester Step Test).

Examinations and Tests	Quality	Drugs	Core Components
<div>Quality of life</div> <div>Dartmouth co-op</div> <div> Physical fitness: -- Please Select -- Feelings: -- Please Select -- Daily activities: -- Please Select -- Social activities: -- Please Select -- Pain: -- Please Select -- Change in health: -- Please Select -- Overall health: -- Please Select -- Social support: -- Please Select -- Quality of life: -- Please Select -- </div> <div> HAD anxiety score: <input type="text"/> HAD depression score: <input type="text"/> Current employment status: -- Please Select --  GAD7: <input type="text"/> PHQ9: <input type="text"/> Minnesota: <input type="text"/> </div> <div> Back Submit </div>			

Quality Tab:
The Dartmouth Co-op and HADS are the measurements used in the NACR Annual Report, with the information coming from the Assessment Questionnaires. GAD7 / PHQ9 are additional measurements of anxiety and depression, recommended for referral of patients to IAPT. This is for programmes that already use this measure, and isn't included in the questionnaires. Minnesota is QOL specifically for heart failure patients.

Examinations and Tests	Quality	Drugs	Core Components
ACE Inhibitors <input type="checkbox"/> 1: Captopril <input type="checkbox"/> 2: Enalapril <input type="checkbox"/> 3: Lisinopril <input type="checkbox"/> 4: Perindopril <input type="checkbox"/> 5: Ramipril <input type="checkbox"/> 6: Trandolapril <input type="checkbox"/> 7: Quinapril <input type="checkbox"/> 8: Other/Not Specified			
Angiotensin receptor blockers (ARB) <input type="checkbox"/> 9: Candesartan <input type="checkbox"/> 10: Losartan <input type="checkbox"/> 11: Valsartan <input type="checkbox"/> 12: Other/Not Specified			
Heart Rate Meds <input type="checkbox"/> 13: Bisoprolol <input type="checkbox"/> 14: Carvedilol <input type="checkbox"/> 15: Nebivolol <input type="checkbox"/> 16: Atenolol <input type="checkbox"/> 17: Propranolol <input type="checkbox"/> 18: Metoprolol <input type="checkbox"/> 19: Ivabradine <input type="checkbox"/> 20: Other/Not Specified			
Diuretic: loop <input type="checkbox"/> 21: Bumetanide <input type="checkbox"/> 22: Ethacrynic acid <input type="checkbox"/> 23: Frusemide <input type="checkbox"/> 24: Torasemide <input type="checkbox"/> 25: Other/Not Specified			
Diuretic: Thiazide <input type="checkbox"/> 26: Bendroflumethiazide <input type="checkbox"/> 27: Metolazone <input type="checkbox"/> 28: Other/Not Specified			
Selective aldosterone receptor antagonist (SARA) Diuretic/antihypertensive <input type="checkbox"/> 29: Eplerenone <input type="checkbox"/> 30: Spironolactone <input type="checkbox"/> 31: Other/Not Specified			
Anti-platelet <input type="checkbox"/> 32: Aspirin <input type="checkbox"/> 33: Clopidogrel <input type="checkbox"/> 34: Other/Not Specified			
Antiarrhythmics <input type="checkbox"/> 35: Digoxin <input type="checkbox"/> 36: Amiodarone <input type="checkbox"/> 37: Other/Not Specified			
Calcium channel blockers (CCBs) <input type="checkbox"/> 38: Amlodipine <input type="checkbox"/> 39: Felodipine <input type="checkbox"/> 40: Diltiazem <input type="checkbox"/> 41: Verapamil <input type="checkbox"/> 42: Other/Not Specified			
Therapy for Lipids <input type="checkbox"/> 43: Atorvastatin <input type="checkbox"/> 44: Pravastatin <input type="checkbox"/> 45: Rosuvastatin <input type="checkbox"/> 46: Simvastatin <input type="checkbox"/> 47: Other/Not Specified			
Anticoagulant <input type="checkbox"/> 48: Warfarin <input type="checkbox"/> 49: Other/Not Specified			
Vasodilators <input type="checkbox"/> 50: Nitrates (incl. GTN spray) <input type="checkbox"/> 51: Other/Not Specified			
Current Diabetes Therapy <input type="checkbox"/> 52: Metformin <input type="checkbox"/> 53: Sulphonylurea <input type="checkbox"/> 54: Glitazone <input type="checkbox"/> 55: Insulin <input type="checkbox"/> 56: Other/Not Specified			

[< Back](#)
[Submit >](#)

Drugs Tab:
This records the drugs that the patient is taking at the point of assessment – we are not currently recording dosage or frequency.

Assessment


Examinations and Tests	Quality	Drugs	Core Components
Health behaviour change and education <input type="checkbox"/> 1: Individual assessment of health behaviour <input type="checkbox"/> 2: Agreed & written treatment plan <input type="checkbox"/> 3: Goal setting for health behaviour change for core components <input type="checkbox"/> 4: Regular review of progress with goals			
Lifestyle risk factor management <input type="checkbox"/> 5: Education about smoking <input type="checkbox"/> 6: Individual counselling / motivational interviewing for smoking cessation <input type="checkbox"/> 7: Individual assessment of diet needs <input type="checkbox"/> 8: Education about healthy diet <input type="checkbox"/> 9: Individual dietary interventions by CR programme <input type="checkbox"/> 10: Referral to dietetics / weight management programme. <input type="checkbox"/> 11: Baseline assessment of activity level <input type="checkbox"/> 12: Education about physical activity <input type="checkbox"/> 13: Group based exercise programme <input type="checkbox"/> 14: Individual exercise			
Psychosocial health <input type="checkbox"/> 15: Assessment of illness beliefs / misconceptions <input type="checkbox"/> 16: Relaxation and stress management training <input type="checkbox"/> 17: Referral to psychological care <input type="checkbox"/> 18: Vocational advice <input type="checkbox"/> 19: Financial Social Security / Benefits advice <input type="checkbox"/> 20: ADL, aids or home adaption assessment			
Medical risk factor management <input type="checkbox"/> 21: Regular monitoring and education of risk factors			
Cardioprotective therapies <input type="checkbox"/> 22: Regular monitoring and education of cardioprotective therapies			
Long-term management <input type="checkbox"/> 23: Long-term maintenance plan for goals			
Audit and evaluation <input type="checkbox"/> 24: Final review of goals and progress <input type="checkbox"/> 99: Other			

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[Submit >](#)

Core Components Tab:
Using the BACPR Core Components, in this section







Once you have completed the assessment data, click on Submit.

- We use as much as possible from the assessments - what is completed will depend on what is measured at the rehab assessment. Aim to measure the same at Ass 1 and Ass 2 to give outcomes measures. We currently report on Smoking / Physical Activity (150 mins week) / BMI / HADS / Cholesterol / Blood Pressure / Waist / Alcohol / Functional Capacity (i.e. ISWT, 6 min walk or other MET measure) but other measures may be used for audit related research. Please remember the assessment record is a combination of data collected at the clinical assessment with a member of the CR team, plus the NACR questionnaire. A patient can have an assessment record without completing the questionnaire.

 You have successfully created an Assessment record

NHS Number: 883 647 3067 Date Of Birth: 19/05/1956 Name: John Smith

Record Tree

-  Patient: 883 647 3067 [Edit Record](#) [Delete Record](#) [Add Initiating Event](#)
-  Initiating Event: 01/04/2013 [Edit Record](#) [Delete Record](#)
-  Rehabilitation [Add Phase](#)
 -  Rehabilitation: Phase [3] [19/04/2013] [Edit Record](#) [Delete Record](#)
-  Assessment [Add record](#)
 -  Assessment: [Assessment 1] [21/04/2013] [Edit Record](#) [Delete Record](#)

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You will again go back to the Record Tree, and all your new records will be shown under the Patient Record. You can collapse or expand these by using the boxes to the left of each folder icon.

Each record has an **Edit Record** and **Delete Record** option next to it. You can edit any record on the database (although you shouldn't edit other programmes' Rehab or Assessment records). You can only delete records that have been created by your programme.

***TIMING OUT:** For security, the database will lock you out after 10 minutes of inactivity, and you will need to log in again. If you were in the middle of an entry that you hadn't saved, any data entered will be lost.*

*If you answer the phone, or go to make a cup of tea (for example), **SAVE YOUR RECORD BEFOREHAND.** This way you won't lose your work.*

Other Useful Information:

Assessment

***Errors**

Examinations and Tests **Quality** **Drugs** **Core Components**

The Assessment date field is required.
The Assessment Number field is required.

Exam

Assessment date: Apr 2013 **required*

Assessment Number: **required*

Reason for not sending questionnaire:

Weight unit: kg:

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Error Messages:
If you miss something out that's required, or put in dates out of logical order, you'll get a red error message, and you will not be able to save/submit the record until you correct the information.

This header menu is available at all times when you're logged into the database.

Clinical Audit Home | NACR Home | Add/Search for Patient Record | **File Submission Dashboard** | Reporting

Back Home > Add / Search for Patient Record > Record Tree

NB: The File Submission Dashboard is for Importers (electronically uploading data from another system). See the 'Importing User Guide' for further information

If you have any queries please contact us:

Tel: 01904 321326

Email: nerina.onion@york.ac.uk

Website: www.cardiacrehabilitation.org.uk/nacr

Appendix 1
STRATIFICATION OF RISK FOR DISEASE PROGRESSION
(ACPICR 2015)

LOW RISK

- Absence of complex ventricular dysrhythmias during exercise testing and recovery
- Absence of angina or other significant symptoms (for example unusual SOB, lightheadedness or dizziness, during exercise testing and recovery)
- Presence of normal haemodynamics during exercise testing and recovery (i.e. appropriate increases and decreases in HR and SBP with increasing workloads and recovery)
- Functional capacity ≥ 7 METS

Non-exercise Testing Findings:

- Resting EF $\geq 50\%$
- Uncomplicated MI or revascularisation procedure
- Absence of complicated ventricular dysrhythmias at rest
- Absence of CHF
- Absence of signs or symptoms of post-event/post-procedure ischaemia
- Absence of clinical depression

Lowest risk classification is assumed when each of the risk factors in the category is present

MODERATE RISK

- Presence of angina or other significant symptoms (for example unusual SOB, lightheadedness or dizziness, occurring only at high levels of exertion ≥ 7 METS)
- Mild to moderate level of silent ischaemia during exercise testing or recovery (ST-segment depression $< 2\text{mm}$ from baseline)
- Functional Capacity < 5 METS

Non-exercise Testing Findings:

- Resting EF 40 – 49%

Any one, or combination of these findings places a patient at moderate risk

HIGH RISK

- Presence of complex ventricular dysrhythmias during exercise testing or recovery
- Presence of angina or other significant symptoms (for example unusual SOB, lightheadedness or dizziness at low levels of exertion ($> 2\text{mm}$ from baseline) during exercise testing or recovery)
- High level of silent ischaemia (ST-segment depression $> 2\text{mm}$ from baseline) during exercise testing or recovery

- Presence of abnormal haemodynamics with exercise testing (i.e. chronotropic incompetence or flat or decreasing SBP with increasing workloads) or recovery (severe post exercise hypotension)

Non-exercise Testing Findings:

- Resting EF
- History of cardiac arrest or sudden death
- Complex dysrhythmias at rest
- Complicated MI or revascularisation procedure
- Presence of CHF
- Presence of signs and symptoms of post-event/postprocedure ischaemia
- Presence of clinical depression

Any one, or combination of these findings places a patient at high risk

Appendix 2

CALCULATION FOR MET-MINUTES PER WEEK (TAM2)

MET Level x minutes of activity per session x number of sessions per week

MET levels:

Mild activity = 3.5 METs

Moderate activity = 5.0 METs

Vigorous activity = 8.5 METs

Calculation:

Mild activity MET-minutes/week = 3.5 x minutes per session x number of sessions per week

Moderate MET-minutes/week = 5.0 x minutes per session x number of sessions per week

Vigorous MET-minutes/week = 8.5 x minutes per session x number of sessions per week

Total physical activity MET-minutes/week = sum of MET minutes/week for all three categories (Mild + Moderate + Vigorous)

Appendix 3

CERTIFICATION (NCP_CR) KPIs (Table from NACR 2018 Quality outcomes report)

NCP_CR KPIs	
Minimum standard 1: MDT	At least three health professions in the CR team who formally and regularly support the CR programme
Minimum standard 2: Patient group	Cardiovascular rehabilitation is offered to all these priority groups: MI, MI+PCI, PCI, CABG, HF
Minimum standard 3: Duration	Duration of core CR programme: \geq national median of 56 days
Standard 4: National average for assessment 1	Percentage of patients with recorded assessment 1: \geq England 80%; Northern Ireland 88%; Wales 68%
Standard 5: National average for CABG wait time	Time from post-discharge referral to start of core CR programme for CABG: \leq national median of England 46 days, Northern Ireland 52 days, Wales 42 days
Standard 6: National average for MI/PCI wait time	Time from post-discharge referral to start of core CR programme for MI/PCI: \leq national median of England 33 days, Northern Ireland 40 days, Wales 26 days
Standard 7: National average for assessment 2	Percentage of patients with recorded assessment 2 (end of CR): \geq England 57%, Northern Ireland 61%, Wales 43%

* Information on staffing profile and MDT, which forms one of the NCP_CR KPIs, is taken from the NACR annual paper survey. This information is not available from the electronic NACR database. In order for certification to be validated each CR team must return the NACR annual paper survey form with staffing detail section completed.