**NHS Digital**

**Indicator Supporting Documentation**

**IAP00430 Completion of cardiac rehabilitation following an admission for coronary heart disease**

Application Form

Indicator and Methodology Assurance Service

**Set or domain:** **Clinical Commissioning Group Outcome Indicator Set (CCG OIS)**

**Title:**

**IAS Reference Code:** **IAP00430**

**Version History**

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| --- | --- | --- | --- |
| Version | Date | Changed By | Change |
| V0.1 | 15/06/2017 | Andrew Besch | Commenced uplift from previous version of form |
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# Application Form

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|  | **Introduction / Overview** |  |
|  | **Title** |  |
|  | **Set or domain** | Clinical Commissioning Group Outcome Indicator Set (CCG OIS)Domain 1: Preventing people from dying prematurely |
|  | **Topic area** | Cardiac rehabilitation |
|  | **Definition** | This indicator measures the proportion of referrals to cardiac rehabilitation with a primary diagnosis of acute myocardial infarction (MI) or heart failure, or a main operative procedure of percutaneous coronary intervention (PCI) or coronary artery bypass graft (CABG) who go on to complete a core delivery of cardiac rehabilitation within 365 days of admission to hospital. This indicator excludes people who died or were too ill to complete rehabilitation from both the numerator and denominator. Data from Hospital Episode Statistics (HES) Admitted Patient Care (APC) is linked to data from the National Audit of Cardiac Rehabilitation (NACR) to produce this indicator. Diagnosis and procedure codes for this indictor are taken from the Payment by Results (PbR)[[1]](#footnote-1) post discharge tariff as these are related to payment for cardiac rehabilitation. The indicator is reported at CCG level by financial year. This indicator is presented alongside another CCG OIS indicator that reports the proportion of admissions that are referred to cardiac rehabilitation within 5 days of a hospital admission with a primary diagnosis of MI or heart failure, or a main operative procedure of PCI or CABG. Referrals are counted as long as they occur following a hospital admission that has been recorded in HES. Completions are counted if they are both referred and complete within 365 days of the hospital admission. This indicator was previously submitted to MRG for consideration on 22/08/2013, and builds on recommendations set in this meeting. This indicator is sufficient to obtain an overview of those completing cardiac rehabilitation, however it can be used in conjunction with the corresponding referrals to cardiac rehabilitation to gain a more complete overview of the referral pathway. |
|  | **Indicator owner & contact details** |  |
|  | **Publication status** | Currently in publication |
|  | **Rationale** |  |
|  | **Purpose** | Cardiac rehabilitation supports long-term quality of life and survival for people with coronary heart disease. CCGs can influence outcomes on this measure by ensuring that cardiac rehabilitation services are available locally to an appropriate capacity and by setting out the role of such services within the overall cardiac pathway which has been commissioned. Where the numbers of patients completing cardiac rehabilitation is low compared to the number of patients being referred, they could also take action to identify and address the causes of this.Patients who have been referred to cardiac rehabilitation should go on to complete it; therefore this indicator is a useful measure of whether CCGs are offering this service to patients and encouraging them to complete the course. This indicator avoids penalising referrals that took place outside of the 5 day limit used in the referral indicator by allowing 365 days for the referral and completion to take place.This indicator uses the codes included in the PbR Post Discharge Tariff payment in order to determine those who are eligible for cardiac rehabilitation.CCGs may use this indicator to determine how they fit with the national figure. They may choose to take action to adjust their figure if they determine it to be necessary.The indicator will be presented alongside an indicator for referrals to cardiac rehabilitation, which reports the number of referrals to cardiac rehabilitation within 5 days of a finished admission episode (FAE) with a primary diagnosis of MI or heart failure or a main operative procedure of PCI or CABG.The two indicators in conjunction aim to provide a view of the cardiac rehabilitation pathway. The referral indicator gives insight to the percentage of cases that could benefit from cardiac rehabilitation that are referred, whilst the completion indicator demonstrates the percentage of referrals that go on to complete cardiac rehabilitation. |
|  | **Sponsor** |  |
|  | **Endorsement** | NICE Indicator Advisory Committee. The indicator was originally constructed following consultation with the following clinical and Cardiac Rehab data experts: • Professor Patrick Doherty, Project Lead, NACR. • Corinna Petre, NACR Project Manager, NACR• Nerina Onion, Training and Information Officer, NACR |
|  | **Evidence and Policy base**Including related national incentives, critical business question, NICE quality standard and set or domain rationale, if appropriate | This indicator aims to reflect the provision of high quality care as set out in the NICE Quality Standard for Chronic Heart Failure[[2]](#footnote-2), which includes a statement about the provision of cardiac rehabilitation. In April 2013 the Cardiovascular Disease Outcomes Strategy (CVD OS)[[3]](#footnote-3) introduced an ambition of 65% uptake of cardiac rehabilitation following a MI, PCI, or CABG, and an ambition of 33% uptake following heart failure. Programmes should be aiming for as many of these patients to complete as possible, as non-completion indicates a waste of time and resources, whilst failing to meet the needs of the patient.These ambitions replaced the goal set in the National Service Framework for Coronary Heart Disease (NSF CHD)[[4]](#footnote-4) for 85% of people discharged with a MI or after coronary revascularisation are to be offered cardiac rehabilitation.Cardiac rehabilitation forms an intrinsic part of the cardiac pathway set out in NSF CHD. Evidence has demonstrated that cardiac rehabilitation improves the outcomes for people with heart disease. The CVD OS quotes a reduction in all-cause mortality of 18% over 6-12 months, 13% over 12 months, and a 31% reduction in readmissions over 6-12 months as a result of cardiac rehabilitation.Research has suggested that cardiac rehabilitation is second only to aspirin and beta blockers in the cost effectiveness of treating the disease. The programmes are a cost effective method to help people live heathier, longer lives.However, despite these benefits the number of people accessing these services is low. Common issues include the services being insufficiently flexible and responsive to ensure that all people eligible take up the offer of cardiac rehabilitation. Services are said to be difficult to commission for by non-specialists due to the range of services, settings, people, and organisations involved. Increasing the awareness of these courses through these indicators may encourage more referrals and subsequent completion of cardiac rehabilitation[[5]](#footnote-5).There is no timeframe dictated in which a referral must complete. This indicator uses the period of 365 days between admission and completion. Analysis of the linked HES-NACR data has shown that approx. 90 per cent of records which completed within a year, completed within 6 months. This timeframe allows for delays in referral and completion and has been agreed as appropriate with NACR. The CCG OIS is an integral part of NHS England’s systematic approach to quality improvement. It is intended to provide clear, comparative information for CCGs, patients, and the public about the quality of health services commissioned by CCGs and the associated health outcomes. All of the CCG outcome indicators have been chosen on the basis that they contribute to the overarching aims of the five domains in the NHS Outcomes Framework (NOF) and it is intended as a tool for CCGs to drive local improvement and set priorities <http://www.england.nhs.uk/ccg-ois/>.This indicator fits within Domain 1: Preventing people from dying prematurely. |

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|  | **Data** |  |
|  | **Data source** | Linked HES APC – NACR data<http://content.digital.nhs.uk/hes><http://www.cardiacrehabilitation.org.uk/nacr/><http://content.digital.nhs.uk/rehab> |
|  | **Justification of source and others considered** | HES contains details of all admissions to NHS hospitals in England, including private patients treated in NHS hospitals, patients who are resident outside of England, and care delivered by treatment centres (including those in the independent sector) funded by the NHS. HES is the data source for a wide variety of healthcare analysis for the NHS, Government, and many other organisations and individuals. It is likely that most patients who have a MI or heart failure, or a PCI or CABG will be admitted to hospital and therefore recorded in HES. The NACR is funded by the British Heart Foundation and is the official audit for NHS cardiac rehabilitation programmes. The data set includes fields that are collected via a set of questionnaires completed by patients before, immediately after, and 12 months after a course. The data is entered into the national database by the rehabilitation programmes. No other data sources were considered for the indicator.  |
|  | **Data availability** |  The underlying record level data from either source is not publically available. Aggregated reports of HES data are released on provisional monthly data approximately 4 months after the end of the reference month. The annual report based on final data is made available approximately 8 months after the end of the reference year and is accessible at the following link:[http://content.digital.nhs.uk/searchcatalogue?q=title% 3A%22Hospital+Episode+Statistics%2C+Admitted+patient+care+-+England%22&area=&size=10&sort=Relevance](http://content.digital.nhs.uk/searchcatalogue?q=title%25%203A%22Hospital+Episode+Statistics%2C+Admitted+patient+care+-+England%22&area=&size=10&sort=Relevance)Extracts and tabulations of data from HES are available to order for a charge. This is managed by the NHS Digital Data Access Request Service (DARS) <http://content.digital.nhs.uk/dars>Aggregated reports of NACR data are released approximately 20 months after the end of the financial year at the following link: <http://www.cardiacrehabilitation.org.uk/reports.htm>. Organisations are able to view an extract of their own data held by the audit.The NACR is a data set that can be continuously updated and as such has no defined timeframes in which data becomes available. |

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| **Data quality** |
|  **i) What data quality checks are relevant to this indicator?****Coverage** [ ]  **Completeness** [ ]  **Validity** [ ]  **Default** [ ]  **Integrity** [ ]  **Timeliness** [ ]  **Other** [ ]  |
| **If you included ‘Other’ as a data quality check, please describe the check, how it will be measured, and its reason for use below:**  |
| **ii) What are the current values for the data quality checks selected?** The period of data the current values are calculated from should be stated. Current values should be recorded as a percentage and calculated as described below. **Period of data:** **Coverage:** **Calculation:** **Completeness:** **Calculation:** **Validity:** **Calculation:** **Default:** **Calculation:** **Integrity:** **Calculation:** **Timeliness:** **Calculation:** **Other:** **Calculation:** |
| **iii) What are the thresholds for the data quality checks selected?** **Coverage:** **Completeness:** **Validity:** **Default:** **Integrity:** **Timeliness:** **Other:**  |
| **iv) What is the rationale for the selection of the data quality checks and thresholds selected above?**   |
| **v) Describe how you would plan to improve data quality should it not meet, or subsequently fall below, the thresholds required for this indicator.**  |
| **vi) Who will own the data quality risks and issues for this indicator?** **Name:** **Job Title:** **Role:** **Email:** **Telephone:**  |
| **vii) Describe how the data quality risks and issues will be managed for this indicator, including the escalation process.**  |
| **viii) Describe any assumptions you have made about data quality for this indicator.**  |
| **ix) Describe any data quality constraints you are aware of for this indicator.**  |
| **x) Additional data quality information:**  |
| **Quality assurance** |
| There is no other national data set to compare HES against to obtain an overall quantitative assessment of accuracy. The data are completed from administrative records recorded by each Trust on their Patient Administration Systems (PAS) with the clinical information added by clinical coders based on doctors’ notes. The trusts are required to complete this information to inform how much they are paid under PbR and the Audit Commission run a rolling programme of audits of organisations’ coding to check for accuracy.The HES Processing Cycle and Data Quality report includes and explains the data cleaning process, the provider organisation code mapping and the derivation rules which include examples of correction and validation rules and derivation is available at the following link: <http://content.digital.nhs.uk/article/1825/The-processing-cycle-and-HES-data-quality>NACR data is subject to a number of validation rules on entry, any data that is in the incorrect format can lead to a rejection of the record, or a blanking or truncation of the data item. Quality assurance is performed by the NACR when extreme values are found in the system, common issues that arise in the data are investigated and fed back to the teams involved and data validation rules are introduced to prevent issues reoccurring. |
| **Data linkage** |
| Records in the NACR have been linked to the HES APC data by the NHS Digital DARS team. This linkage has been performed through use of NHS Number, Postcode, Sex, and Date of Birth. Whilst the HES APC data set is recorded as a single table with a single differentiated record per episode identifier (EPIKEY), the NACR data meanwhile is a relational data set, where each contact with cardiac rehabilitation services is recorded alongside a person level identifier (StudyID). Data from a single financial year of HES data is linked to a single financial year of NACR data. The NHS Digital DARS extract contains a list of StudyIDs linked to EPKIEYs. These keys are then linked back to their source data sets by the NHS Digital Clinical Indicators team. This introduces a number of issues with the linkage of the datasets and subsequent analysis, for example, duplication of a StudyID means that each permutation of data will be linked to a single EPIKEY, artificially inflating figures. In order to eliminate duplicate data, the NHS Digital Clinical Indicators team has attempted to select the relevant StudyIDs prior to linking the data. These relevant distinct StudyIDs are then linked to the HES data. There are a small number of cases where the same EPIKEY has been linked to multiple StudyIDs, these have been removed from the analysis. In the 2011-12 data, 61 EPIKEYs were removed, leaving 329,977 remaining for analysis.The linkage has been performed in order to obtain the number of eligible cases for cardiac rehabilitation, it also allows for the NACR data to benefit from the more complete data and robust data quality assurance that has been applied to HES whilst making use of specific fields in the NACR that allow these indicators to be constructed. Filters that are applied to the HES data set will allow for records to be excluded from the NACR data and aggregations can be performed through CCG of Responsibility from HES data rather than attempting to construct a similar field using geographical data contained in the NACR. For the period 1st April 2011 to 31st March 2012, there are 148,157 eligible FAEs in the HES data set. In the two year period 1st April 2011 to 31st March 2013, there are 150,840 distinct StudyIDs. Following linkage of the two data sets, 81,714 (54.2%) distinct StudyIDs with a referred date between 0 and 364 days from admission are retained. The number is reduced further when limited to those that are relevant to the indicator and are linked to a HES APC admission in the 2011/12 data year to 37,937. NACR records are linked to the closest HES episode within the time period. There is not enough information contained on the NACR record to ensure that it is linked with the correct source HES episode, the linkage performed here allows for an approximation of activity. Source of Referral is an available field in the NACR data set, however its completion is poor. This information is missing on over 85% of records. Of the records where this information is completed, NHS Trust is the most common response, with the other sources of referral making up only a small proportion of records. |
| **Quality of data linkage** |
| NHS Number is recorded on 99.3% of HES APC records in 2011-12 and on 100% of NACR records for the same period. It is expected that completion of NHS Number will be higher on the relevant HES APC records. The table below reveals the match ranks for the data linkage performed by the NHS Digital DARS team for 2011-12:  |

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| **Step** | **Records**  | **%** | **NHS** | **DoB** | **Sex** | **Postcode** |  |
| **1** | 279,222 | 84.6% | Exact | Exact | Exact | Exact |  |
| **2** | 39,068 | 11.8% | Exact | Exact | Exact |   |  |
| **3** | 2,587 | 0.8% | Exact | Partial | Exact | Exact |  |
| **4** | 398 | 0.1% | Exact | Partial | Exact |   |  |
| **5** | 3,238 | 1.0% | Exact |   |   | Exact |  |
| **6** | 137 | 0.0% |   | Exact | Exact | Exact | where NHSNO does not contradict the match and DOB is not 1 January and the POSTCODE is not in the 'ignore' list |
| **7** | 0 | 0.0% |   | Exact | Exact | Exact | where NHSNO does not contradict the match and DOB is not 1 January |
| **8** | 5,312 | 1.6% | Exact |  |  |  |  |
| **0** | 137 | 0.0% |  |  |  |  | Cases were HESID has changed over time |

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| **Data fields** |  HES APC:ADMISORC – Source or admissionCCG\_RESPONSIBILITY – CCG derived from the patient’s GP practice, or if this is not recorded, from their residence, or if this is not recorded, from the location of the hospital provider supplying careCLASSPAT – Patient Classification DISMETH – Discharge methodDIAG\_4\_01 – Primary Diagnosis, 4 characterEPIORDER – Episode number within a spellEPISTAT – Status of EpisodeEPITYPE – Type of EpisodeOPERTN\_4\_01 – Main Operative Procedure, 4 characterSEX – SexSTARTAGE\_CALC – Age at the start of the episodeNACR:ReferredDate – The date a person was referred to core cardiac rehabilitation. (From April 2015, this has been moved from initiating event to rehabilitation records)PhaseNumber – The phase number that the record relates toPhaseCompletedDate – Date the phase of rehabilitation was completedPhaseStartDate – Date the phase of rehabilitation startedAssessmentNumber – The assessment number that the record relates to.AssessmentDate – Date that the assessment took placePostRehabAssessmentDate – Date that the post-rehabilitation assessment took place. PreRehabAssessment – Date that the pre-rehabilitation assessment took place.ReasonForNotCompleting – Reason for not completing the phase of cardiac rehabilitation |
| **Data filters** | The OPERTN\_4\_01 and DIAG\_4\_01 codes used in this indicator have been taken from the PbR post discharge tariff; these differ from the NHS Classification Service codes which contain a greater number of codes. The decision to use PbR codes was made in order to have a consistent set of diagnosis and procedures that CCGs were paid to provide the treatment for. The NHS Classification Service includes codes for Heart Failure which have not been used in this analysis, whilst the PbR codes include a number of coronary artery related procedures which are not included in the NHS Classification Service advice. In 2011,12, the PbR codes included approximately 10,000 more FAEs than the NHS Classification Service codes,ADMISORC – Not in (51, 52, 53)CCG\_RESPONSIBILITY – Code is validCLASSPAT – In (1, 2)DIAG\_4\_01 – In (I210, I211, I212, I213, I214, I219, I220, I221, I228, I229, I500, I501, I509)OrOPERTN\_4\_01 – In (K401, K402, K403, K404, K405, K408, K409, K411, K412, K413, K414, K418, K419, K421, K422, K423, K424, K428, K429, K431, K432, K433, K434, K438, K439, K441, K442, K448, K449, K451, K452, K453, K454, K455, K456, K458, K459, K461, K462, K463, K464, K465, K468, K469, K491, K492, K493, K494, K498, K499, K501, K502, K503, K504, K508, K509, K751, K752, K753, K754, K758, K759)DISMETH – Not 4 or 5EPIORDER – = 1EPISTAT – = 3EPITYPE – = 1SEX – In (1, 2)STARTAGE\_CALC – Between 0 and 120NACR:ReferredDate – Is greater than or equal to ADMIDATE(ReferredDate between 1st April YYYY and 31st March YYYY+2, Datdif(Day,ADMIDATE,ReferredDate) between 0 and 364)1. Selects referrals that had completed core delivery of cardiac rehabilitation within 365 days of admission

 ((PhaseNumber – = 3ANDPhaseCompletedDate – within 365 days of ADMIDATE)OR1. Selects referrals to cardiac rehabilitation that had a post rehabilitation assessment following core delivery of rehabilitation, this is a method of identifying completions where a completion date has not been entered into the data set.

(PostRehabAssessmentDate – within 365 days of ADMIDATEANDPhaseNumber - = 6)OR1. Selects referrals that started cardiac rehabilitation and completed an assessment that should take place between 12 and 20 weeks following the start of core delivery of cardiac rehabilitation, this is a method of identifying completions where a completion date has not been entered into the data set.

(AssessmentNumber – = 2ANDAssessmentDate – within 365 days of ADMIDATE(PhaseNumber - = 3ANDPhaseStartDate is not missingORPhase number - = 6ANDPreRehabAssessmentDate is not missing)) ReasonForNotCompleting – Not in (6,7)Process:Relevant HES records are selectedDuplicate EPIKEYs are removed from the NHS Digital DARS extract, remaining EPIKEYs are joined to the HES records to obtain the relevant StudyIDs.The HES+StudyID data is linked to NACR data, records are joined if the ReferredDate is greater than or equal to the ADMIDATE. NACR data is filtered to exclude those who were died or were too ill to complete a core delivery phase of cardiac rehabilitation; these cases are removed from the HES+StudyID data.The NACR data is filtered to obtain a distinct list of StudyIDs and ReferredDates where the completion criteria mentioned above has been met. The date of the earliest completion is also recorded  |
| **Justifications of inclusions and exclusions** and how these adhere to standard definitions | ADMISORC – Excludes transfers from NHS hospital providers. This is a standard HES definition in the indicator set.CCG\_RESPONSIBILITY – Selects valid CCGs, this is a standard HES definition in the indicator set.CLASSPAT – Selects both ordinary admissions and day cases. This is a standard definition in the indicator set when identifying non-emergencies. DIAG\_4\_01 – These ICD-10 codes align with codes align with the PbR post discharge tariff:I21 Acute myocardial infarctionI22 Subsequent myocardial infarctionI50 Heart failureOPERTN\_4\_01 – These OPCS 4 codes align with the PbR post discharge tariff:K40 Saphenous vein graft replacement of coronary arteryK41 Other autograft replacement of coronary arteryK42 Allograft replacement of coronary arteryK43 Prosthetic replacement of coronary arteryK44 Other replacement of coronary arteryK45 Connection of thoracic artery to coronary arteryK46 Other bypass of coronary arteryK49 Transluminal balloon angioplasty of coronary arteryK50 Other therapeutic transluminal operations on coronary arteryK75 Percutaneous transluminal balloon angioplasty and insertion of stent into coronary arteryDISMETH – Excludes those that were discharged as dead or as stillbirth from the indicator. Standard readmissions definition EPIORDER – Standard HES definition, selects the first admission in a spell, known as the admission episode.EPISTAT – Standard HES definition, selects only episodes that have finished. EPITYPE – Standard HES definition, selects general episodes only.SEX – Selects valid genders onlySTARTAGE\_CALC – Selects valid ages onlyNACR:ReferredDate – Selects cases that were referredPhaseNumber – Selects the delivery phase of cardiac rehabilitation. Phases of cardiac rehabilitation are as follows:Before discharge from hospital (Phase 1)• assessment of physical, psychological and social needs for cardiac rehabilitation• negotiation of a written individual plan for meeting these identified needs (copies should be given to the patient and the general practitioner)• initial advice on lifestyle e.g. smoking cessation, physical activity (including sexual activity), diet, alcohol consumption and employment• prescription of effective medication (see chapters 2-6) and education about its use, benefits and harms• involvement of relevant informal carer(s) • provision of information about cardiac support groups• provision of locally relevant written information about cardiac rehabilitationEarly post discharge period (Phase 2)• comprehensive assessment of cardiac risk, including physical, psychological and social needs for cardiac rehabilitation; and a review of the initial plan for meeting these needs• provision of lifestyle advice and psychological interventions according to the agreed plan from relevant trained therapists who have access to support from a cardiologist• maintain involvement of relevant informal carer(s)• review involvement with cardiac support groups• offer resuscitation training for family membersFour weeks after an acute cardiac event (Phase 3): as early post discharge period plus:• structured exercise sessions to meet the assessed needs of individual patients• maintain access to relevant advice and support from people trained to offer advice aboutexercise, relaxation, psychological interventions, health promotion and vocational adviceLong term maintenance of changed behaviour (Phase 4)• long term follow-up in primary care (see chapter 2)• offer involvement with local cardiac support groups• referral to specialist cardiac, behavioural (e.g. exercise, smoking cessation) or psychological services as clinically indicated.Early commissioning pack (Phase 5)• NACR data set identifier of early cardiac rehabilitationCore commissioning pack (Phase 6)• NACR data set identifier of core cardiac rehabilitation. This is the equivalent of Phase 3, and is used in conjunction with other fields to identify completions of cardiac rehabilitation where the completion date has not been entered into the data set. PhaseCompletedDate – Presence of this date indicates that rehabilitation was completedPhaseStartDate – Presence of this date indicates that rehabilitation startedAssessmentDate – Presence of this date indicates that the assessment was performedAssessmentNumber – Selects the assessment following rehabilitationASSESSMENT 1 - before the rehabilitation programme – it is acknowledged that this term is vague but for practical reasons this is unavoidable due to the variance in which cardiac rehabilitation is provided across the UK. Assessment 1 could be implemented on a ward prior to discharge, or at an outpatient clinic in phase 2 or when they first attend a phase 3 programme. As long as the initiating event date is filled in the NACR project team can control for difference in start date statistically.ASSESSMENT 2 - after the rehabilitation programme or as close to 12 weeks after the ‘programme’ started as possible. For a programme that is delivered within phase 3 this is usually a reasonably good fit, however for menu based programmes that encompass a number of options (i.e. heart manual plus an outpatient education and exercise programme) or for programmes that have very long waits it will be less good. There is a time limit to implementing Assessment 2 and this is 20 weeks after Assessment 1 – any Assessment 2s that are implemented post this time frame will be discounted from the NACR.ASSESSMENT 3 - at 12 months from Assessment 1.PostRehabAssessmentDate – Presence of this date indicates that assessment was performedPreRehabAssessment – Presence of this date indicates that assessment was performedReasonForNotCompleting – Excludes those that were too ill or died |
| **Data processing** | An extract of NACR data will be taken by the NHS Digital Clinical Audit team and linked to HES APC data by the NACR DARS team. The percentage referred calculation will be performed by the NHS Digital Clinical Indicators team. |

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|  | **Construction** |  |
|  | **Numerator** | Of the denominator, the number that complete a core delivery of cardiac rehabilitation within 365 days of admission to hospital.Neither the HES APC or the NACR data sets have information on the time that an admission or activity occurred, only the date, as a result some referrals may have a slightly longer timeframe in which this completion can take place. |
|  | **Denominator** | The number of referrals to cardiac rehabilitation that were referred following a hospital admission with a primary diagnosis of MI or heart failure, or a main operative procedure of PCI or CABG, excluding those who died or were too ill to complete rehabilitation. Neither the HES APC or the NACR data sets have information on the time that an admission or activity occurred, only the date, as a result it cannot be said for certain that a referral occurs following an admission if they both occur on the same day. |
|  | **Computation** | The percentage *p* is given by: where:*O* is the numerator; the number in the denominator that complete a core delivery of cardiac rehabilitation within 365 days of referral;*n* is the denominator; the number of referrals to cardiac rehabilitation following a hospital admission with a primary diagnosis of MI or heart failure, or a main operative procedure of PCI or CABG |
|  | **Risk adjustment or standardisation type and methodology** | **None***Variables and methodology:* |
|  | **Justification of risk adjustment type and variables**or why risk adjustment is not used | Cardiac rehabilitation should be offered to all eligible cases. The codes used to identify relevant diagnoses and procedures have been taken from the PbR cardiac rehabilitation post discharge tariff, suggesting that all these cases should be referred to cardiac rehabilitation.A person’s age or gender does not render them ineligible for cardiac rehabilitation, therefore to standardise for these variables may introduce a bias into the indicator. |
|  | **Confidence interval / control limit use and methodology** | Confidence Intervals*Methodology:*Using the Wilson Score method[[6]](#footnote-6),[[7]](#footnote-7), the 100(1– *α*)% confidence limits are given by:where: *q* is 1–*p*;*z* is the 100(1– *α* /2)th percentile value from the Standard Normal distribution. For example, for a 95% confidence interval, *α* = 0.05 and *z* = 1.96 (i.e. the 97.5th percentile value from the Standard Normal distribution)[[8]](#footnote-8).  |
|  | **Justification of confidence intervals / control limits used** | Confidence intervals are used, recognising the existence of natural variation between the CCG populations.The preferred PHE confidence interval method for proportions is the Wilson Score method[[9]](#footnote-9) which has been evaluated and recommended by Newcombe and Altman[[10]](#footnote-10);[[11]](#footnote-11). It can be used with any data values and, unlike some methods, it does not fail to give an interval when the numerator count, and therefore the proportion, is zero[[12]](#footnote-12). |

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| Presentation of indicator | The indicator is to be presented on the NHS Digital Indicator Portal in a consistent format with other CCG OIS indicators. It is accompanied by a Specification and Quality Statement. The data is presented with a detailed header including information on the statistic presented, the reporting period, level of coverage, publication date, data sources, and any further notes to be aware of. Drop-down filtering is also available. The data will be reported annually. The specific fields to be presented in data are as follows: |

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| **Column Name** | **Output** |
| Reporting period | Period of coverage (years/rolling quarter) |
| Breakdown | National (all registered patients in England), CCG |
| ONS code | ONS geography code |
| Level | CCG code |
| Level description | CCG name |
| Percentage | Percentage of referrals to cardiac rehabilitation following a hospital admission with a primary diagnosis of MI or heart failure, or a main operative procedure of PCI or CABG who completed core delivery of cardiac rehabilitation within 365 days of referral |
| CI lower (%) | Lower 95% confidence interval |
| CI upper (%) | Upper 95% confidence interval |
| Denominator | The number of referrals to cardiac rehabilitation following a hospital admission with a primary diagnosis of MI or heart failure, or a main operative procedure of PCI or CABG, excluding those who died or were too ill to complete rehabilitation. |
| Numerator | Of the denominator, the number that complete a core delivery of cardiac rehabilitation within 365 days of referral |

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|  | **Contextual information provided alongside indicator** |
|  | **Calculation and data source of contextual information** |
|  | **Use of bandings, benchmarks or targets**with justification |
|  | The indicator is to be presented without target or ranking. If a CCG believes their figure to be disproportionately low, for example when compared to the national figure, the factors contributing to this can be investigated and appropriate action can be taken. It is noted that the CVD OS introduced ambitions of 65% uptake of cardiac rehabilitation following a MI, PCI, or CABG, and 33% uptake following heart failure. However, these indicators do not measure uptake and as such it would be misguided to compare a CCGs referral score to these figures. |
|  | **Banding, benchmark or target methodology**if appropriate |
|  | **Interpretation** |
|  | **Interpretation guidelines** |
|  | The indicator will be presented alongside an indicator for referrals to cardiac rehabilitation, which reports the number of admissions to hospital with a primary diagnosis of MI or heart failure, or a main operative procedure of PCI or CABG that are referred to cardiac rehabilitation.The two indicators in conjunction aim to provide a view of the cardiac rehabilitation pathway. The referral indicator gives insight to the percentage of cases that could benefit from cardiac rehabilitation that are referred, whilst the completion indicator demonstrates the percentage of referrals that go on to complete cardiac rehabilitation. The completion indicator is not a subset of the referrals to cardiac rehabilitation indicator, as the time frame in which a referral can take place is not as restrictive as a referral and completion has 365 days to take place whereas the referrals indicator only includes those referred within 5 days of the hospital admission. A CCG may have a high referral rate, but due to the set-up of the programme, its location, or an inability to cater to a user’s needs the CCG may have a low completion rate. This indicator is intended to highlight cases where a completion does not occur so that the CCG can look into the possible causes and make changes. A link to the referrals to cardiac rehabilitation indicator will be provided in the indicator metadata, these indicators can be looked at together (along with other sources of information) in order to judge a CCGs performance.A high percentage of referrals that go on to complete cardiac rehabilitation is desirable. However, this indicator makes no judgement as to what an acceptable level of completions is.The indicator requires careful interpretation and should not be viewed in isolation but instead be considered alongside information from other indicators, such as the corresponding cardiac rehabilitation referrals indicator and various sources, such as the NACR reports: <http://www.cardiacrehabilitation.org.uk/>. However, a point to note is that these reports include estimated data and as such will not be directly comparable. The data reported in this indicator does not make use of estimated figures. |
|  | **Limitations and potential bias** |
|  | The NACR is not a mandatory collection and as such has an inherent issue with missing data. Data is currently provided by 70% of all cardiac rehabilitation programmes with varying degrees of data completeness. It is hypothesised that this data coverage issue will improve if the collection was mandated. There is some inconsistency in the level of reporting, it is difficult to determine whether a case is not present in the referral count due to the patient not being referred or the programme failing to submit data about the referral. This may manifest itself in the indicator as CCGs with low referral rates may actually be areas of poor coverage or data quality and will as such have consequences for the interpretation of the indicator. The NACR team, the BACPR, and the BHF regional teams are working to ensure that data entry is of the highest quality. The BACPR/NACR national accreditation scheme is helping to drive this initiative. The distribution of cardiac rehabilitation programmes is not even, some CCGs have multiple rehabilitation programmes, whilst others have few. As a result, when activity is disaggregated by CCG, the referral rate may be influenced by the proportion of cardiac rehabilitation programmes. This will be included in the indicator quality statement.For the period 1st April 2011 to 31st March 2012, there are 148,157 eligible FAEs in the HES data set. In the two year period 1st April 2011 to 31st March 2013, there are 150,840 distinct StudyIDs. Following linkage of the two data sets, 81,714 (54.2%) distinct StudyIDs with a referred date between 0 and 364 days from admission are retained. The number is further reduced when limited to those that are relevant to the indicator to 37,937. The NACR believe this data loss will be reduced with the new data system.NACR records are linked to the closest HES episode within the time period. There is not enough information contained on the NACR record to ensure that it is linked with the correct source HES episode, the linkage performed here allows for an approximation of activity. Heart failure and PCI are included as in-scope for this indicator, in 2011-12 however, patients with heart failure were deemed ineligible for 40 cardiac rehabilitation programmes, and patients who had a PCI were ineligible for 15 programmes. These exclusions may affect the referral rates for CCGs that have a larger proportion of these patients and programmes, the number of programmes that exclude these cases is reducing year on year.The ambition of 65% uptake following a MI, PCI or CABG, and 33% uptake following heart failure set out in the CVD OS may cause issues for the interpretation of this indicator. Whilst these are not targets, the ambitions reflect an improvement on current performance, which is currently much lower. CCGs with a larger proportion of heart failure patients who are fulfilling the 33% uptake ambition will have a lower rate overall than CCGs who have a lower proportion of heart failure patients who are fulfilling the 65% uptake ambition. Due to the complexities of linkage and data quality issues, CCGs may never reach these ambitions when measured by this indicator.A person can have multiple cardiac events, there appears to be an inconsistency in the way these cases are managed by rehabilitation programmes. Cases may return to Phase 1 of cardiac rehabilitation or be re-referred to the next stage of cardiac rehabilitation. If a person has a single admission to hospital and multiple referrals, the referral associated with the completion will be counted. If a single referral appears to have multiple completions, the completion will only be counted once. If a person has multiple admissions and a single referral associated with each admission, each referral will be counted.The codes used to identify the diagnoses and procedures have been taken from the PbR cardiac rehabilitation post discharge tariff. These codes are slightly different from the ones supplied by the NHS Classification Service. The decision to use the PbR codes has been made to ensure that CCGs are being measured on what they are paid to deliver.Neither the HES APC or the NACR data sets have information on the time that an admission or activity occurred, only the date, as a result some admissions may have a slightly longer timeframe in which this referral can take place. |
|  | **Improvement actions** |
|  | The indicator requires careful interpretation and should not be viewed in isolation, but instead be considered alongside information from other indicators and alternative sources, such as the corresponding cardiac rehabilitation completion indicator or the source NACR publication. CCGs can use this indicator in context to identify if any improvements may be needed to their delivery of service, further information will be required in order to determine what, where, and how these services should improve.If a CCG would like to increase the number of referrals to cardiac rehabilitation, it may consider commissioning additional services and reassessing its referral pathway. Improvements could be made by enhancing aspects of the services CCGs commission for patients. This could come in the form of raising awareness of cardiac rehabilitation and its benefits for people who have had a cardiac event |
|  | **Evidence of variability** |

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|  | At the national level in 2011-12, there were 37,973 referrals to cardiac rehabilitation programmes (excluding those that died or were too ill post-referral) within 365 days of admission. Of these, 12,361 completed a core delivery of cardiac rehabilitation within 365 days of admission (32.6%).Of the unsuppressed values, the number of referrals ranges from 7 to 908, and the number of completions ranges from 0 to 317. 13 CCGs have their number of referrals suppressed, 28 CCGs have their number of completions suppressed. The rate is suppressed for 40 CCGs.The following graphs will not be presented as part of the indicator.It would be expected that 95% of data points would be within 2 standard deviations of the England figure. Of the 168 unsuppressed CCGs, 112 (66.7%) are outside the 2 standard deviations limit.It is possible that the variation comes down to issues with data quality, unmatched records, and the uneven distribution of cardiac rehabilitation programmes. |

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| **CCG** | **Denominator** | **Numerator** | **%** | **CI Lower (%)** | **CI Upper (%)** |
| 00C | \* | 0 | \* | \* | \* |
| 00L | \* | 0 | \* | \* | \* |
| 00M | \* | 0 | \* | \* | \* |
| 00P | \* | 0 | \* | \* | \* |
| 02N | \* | 0 | \* | \* | \* |
| 02P | \* | 0 | \* | \* | \* |
| 05P | \* | 0 | \* | \* | \* |
| 06M | \* | 0 | \* | \* | \* |
| 06V | \* | 0 | \* | \* | \* |
| 06W | \* | 0 | \* | \* | \* |
|  |  |  |  |  |  |
| **CCG** | **Denominator** | **Numerator** | **%** | **CI Lower (%)** | **CI Upper (%)** |
| 06D | 139 | 79 | 56.8% | 48.5% | 64.8% |
| 01W | 442 | 262 | 59.3% | 54.6% | 63.8% |
| 07G | 214 | 128 | 59.8% | 53.1% | 66.2% |
| 10W | 53 | 32 | 60.4% | 46.9% | 72.4% |
| 10M | 45 | 28 | 62.2% | 47.6% | 74.9% |
| 09G | 504 | 317 | 62.9% | 58.6% | 67.0% |
| 99E | 282 | 185 | 65.6% | 59.9% | 70.9% |
| 01V | 105 | 70 | 66.7% | 57.2% | 74.9% |
| 10J | 81 | 57 | 70.4% | 59.7% | 79.2% |
| 07K | 66 | 52 | 78.8% | 67.5% | 86.9% |

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|  | **Risks** |  |
|  | **Similar existing indicators** | There are currently no other indicators in the CCG OIS, the wider NHS Digital Indicator Portal, or the Public Health Outcomes Framework that relate to cardiac rehabilitation. Data is available in the NACR annual reports, however these are not strictly comparable as these reports are at person level and include estimated figures. |
|  | **Coherence and comparability** | The ICD-10 and OPCS-4 codes that are used to identify the relevant diagnosis and procedure codes for this indicator have been taken from the PbR post discharge tariff for cardiac rehabilitation. As a result the indicators are measuring what the CCGs are being paid to offer.This indicator is not comparable with the NACR annual reports as these contain estimated data. Estimated data is not included in this indicator as it cannot be verified; this indicator may highlight awareness of the data set and improve its data quality, thus reducing the need to rely on estimated data in the annual report. |
|  | **Undesired behaviours and/or gaming** | In order to remove patients from the indicator, hospitals could record patients as having a diagnosis or procedure in a secondary position, rather than a primary one. This may have the effect of increasing the proportion of referred cases, but may also affect the payment a hospital receives. The financial incentives associated with the PbR are likely to be greater than any potential bias due to being part of the CCG OIS. |
|  | **Approach to indicator review** | As this indicator was previously given the assurance rating ‘Use With Caution – Data Quality Issues’, the previous review period was set to one year. Following this indicator review, the review period will be set by the Indicator Governance Board (IGB). Prior to the review period lapsing the Indicator and Methodology Assurance Service (IMAS) will liase with the Clinical Indicators (CI) team to initiate the review process.User feedback and comments on this indicator are welcomed via NHS Digital Enquiries enquiries@nhsdigital.nhs.uk or the Clinical Indicators mailbox clinical.indicators@nhs.net |
|  | **Disclosure control** | When publishing the data, if the indicator is calculated from a value of 1 to 5, the value and percentage is suppressed to ensure an individual’s identity is not at risk of being disclosed. If there is only one value suppressed in this way, the rate based upon the next lowest numerator is also suppressed; this reduces the risk of the first suppressed number being identifiable in isolation.Percentages are rounded to one decimal place before publication. |
|  | **Copyright** | Copyright © 2017, NHS Digital. All rights reserved.NACR? |

Indicator Governance Board

Indicator Assurance Report

**IAP00430**



**Final Assurance Rating from the Indicator Governance Board – 10/02/2016**

|  |  |
| --- | --- |
| **Reason for assessment** | Initial assurance |
| **Iteration** | 1st IGB meeting |

**Ratings Against Assessment Criteria**

Clarity **Fit for use**

Rationale **Fit for use**

Data **Use with caution – data quality issue**

Construction **Fit for use**

Presentation and Interpretation **Fit for use**

Risks and Usefulness **Fit for use**

**Overall Rating Use with caution – data quality issue**

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| **Outcome** | **This indicator has been approved for inclusion in the National Library of Quality Assured Indicators** |

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| **Key findings from Assurance** |
| * IGB agrees with the conclusions reached by MRG as set out in the appraisal log with no further comments raised by Board members. The indicator is assured for inclusion in the Library and is put forward for review in 1 year to assess if data coverage has improved as expected.
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| **Approval date** | 10/02/2016 |
| **Review date** | 10/02/2017 |

**Details of Methodology Appraisal - 04/02/2016**

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| **Methodology appraisal body** | HSCIC's Indicator & Methodology Assurance Service |
| **Reason for assessment** | Initial assurance |
| **Iteration** | Update from MRG Chair |

***Suggested Assurance Rating by Methodology Appraisal Body***

**Ratings Against Assessment Criteria**

Clarity **Fit for use**

Rationale **Fit for use**

Data **Use with caution – data quality issue**

Construction **Fit for use**

Presentation and Interpretation **Fit for use**

Risks and Usefulness **Fit for use**

**Overall Rating Use with caution – data quality issue**

**Updated information supplied to MRG Chair:**

Following recommendations set out in the second MRG meeting, the applicant provided additional information and amended the form. In light of these changes made by the applicant, the MRG Chair and Vice Chair have revised the ratings for ‘Presentation and Interpretation’ as fit for use.

**Summary Recommendation to IGB:**

MRG members are prepared to endorse the indicator for inclusion in the Library of Quality Assured Indicators. Noting that data quality is still improving MRG recommend the indicator is reviewed within 1 year to review data coverage with the expectation that the level of assurance will be improved.

**Please find a detailed description of recommendations and actions in the appraisal log at the end of the document.**

**Details of Methodology Appraisal – 14/01/2016**

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| **Methodology appraisal body** | HSCIC's Indicator & Methodology Assurance Service |
| **Reason for assessment** | Initial assurance |
| **Iteration** | 2nd MRG meeting |

***Suggested Assurance Rating by Methodology Appraisal Body***

**Ratings Against Assessment Criteria**

Clarity **Fit for use**

Rationale **Fit for use**

Data **Use with caution – data quality issue**

Construction **Fit for use**

Presentation and Interpretation **Fit for use**

Risks and Usefulness **Fit for use**

**Overall Rating Use with caution – data quality issue**

**Summary Recommendation to Applicant:**

MRG asked the applicant to clarify with the developer whether it is clinically appropriate for cardiac patients captured by this indicator that also have a pacemaker or a secondary diagnosis of angina to be referred to and to complete cardiac rehabilitation. A small number of changes have been advised by MRG, mainly around providing further clarity on data quality and data linkage and to supply a relevant endorsement for the indicator.

The Group advise that updates to the recommendations are dealt with by correspondence or by the Chair prior to the indicator being escalated to IGB. However, the Group endorse the indicator for inclusion in the Library of Quality Assured Indicators.

**Summary Recommendation to IGB:**

MRG members are prepared to endorse the indicator for inclusion in the Library of Quality Assured Indicators. A couple of points regarding clarification of data quality and data linkage have been raised, as well as a query regarding identifying an appropriate endorsement by a relevant body which would further assist in strengthening the application. A caveat around interpretation was identified which asked the developer to explain whether it is clinically appropriate for cardiac patients captured by this indicator that also have a pacemaker or a secondary diagnosis of angina to be referred to and to complete cardiac rehabilitation.

Noting that data quality is still improving MRG recommend the indicator is reviewed within 1 year to review data coverage with the expectation that the level of assurance will be improved.

**Please find a detailed description of recommendations and actions in the appraisal log at the end of the document.**

**Details of Methodology Appraisal – 26/11/2015**

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| **Methodology appraisal body** | HSCIC's Indicator & Methodology Assurance Service |
| **Reason for assessment** | Initial assurance |
| **Iteration** | 1st MRG meeting |

***Suggested Assurance Rating by Methodology Appraisal Body***

**Ratings Against Assessment Criteria**

Clarity **-**

Rationale **-**

Data **-**

Construction **-**

Presentation and Interpretation **-**

Risks and Usefulness **-**

**Overall Rating Pending**

**Summary Recommendation to Applicant:**

As it currently stands, this indicator measures the proportion of cardiac patients that were referred to cardiac rehabilitation within 5 days of an admission who went on to complete rehabilitation within 365 days. MRG recommend that the applicant change the scope of the indicator to include cardiac patients that had been referred and had completed the programme within 365 days, rather than excluding the patient referrals that were made after 5 days of admission to hospital.

**Summary Recommendation to IGB:**

MRG members requested that the applicant change the scope of the indicator to include cardiac rehabilitation referrals and subsequent completions that were completed within 365 days; currently the indicator only captures CHD patients referred to cardiac rehabilitation within 5 days of hospital admission who then go on to complete the programme within a 365 day period.

A handful of small suggestions have been put to the developer that may further strengthen the application, including justification not to standardise in the construction.
Noting that data quality is still improving MRG recommend the indicator is reviewed within 1 year to review data coverage with the expectation that the level of assurance will be improved.

**Please find a detailed description of recommendations and actions in the appraisal log at the end of the document.**

**What do the Assurance Ratings mean?**

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| **Rating** | **Description** |
| **Fit for use** | This indicator can be used with confidence that it is constructed in a sound manner that is fit for purpose. |
| **Fit for use with caveats** | The indicator is fit for use, however users should be aware of caveats and/or recommendations for improvement that have been identified during the assurance process. |
| **Use with caution – data quality issue** | The indicator is based on a sound methodology for which the assurance process endorse the use, however issues have been identified with the national data source which have implications for its use as an indicator. |
| **Not fit for use** | Issues have been identified with the indicator which have resulted in the assurance process currently not endorsing its use as a quality indicator. |
| **Not enough information provided** | There has not been enough information supplied to the assurance process to be able to accurately give the indicator a level of assurance. |
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**Appraisal Log**

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| **Clarity** |
| ***Rec. no******Issue or recommendation******Raised by / Date******Response or Action taken by applicant******Response date******Resolved******Sign off by / Date*** |
| No issues or recommendations were highlighted during the assurance process for this criterion. |

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| **Rationale** |  |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 2a | MRG requested the endorsement section to be updated with the support of a relevant professional body which endorses this indicator’s use, rather than people involved in the development. | MRG – 14/01/16 | Added endorsement from the NICE Indicator Advisory Committee.  | 01/02/16 |[x]  MRG pre-meet04/02/16 |

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| **Data** |  |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 3a | It was reported to MRG that the data coverage for the time period presented in the application is approximately 70%, although it is suggested that data coverage is achieving 90% in more recent data sets. On this basis MRG recommend this aspect is reviewed when the new data becomes available to validate the improvement.  | MRG – 26/11/2015 | Noted that data quality is expected to improve. Documentation updated to reflect this.  | 24/12/15 |[ ]   |
| 3b | MRG suggest that more clarity regarding the distinction between data quality and data validity is given. | MRG – 14/01/16 | Documentation updated to identify how many primary diagnoses are valid and the process to check whether NHS number is valid so that it can be entered into the data set. | 01/02/16 |[x]  MRG pre-meet04/02/16 |
| 3c | It was advised to quantify how many providers are missing from the data set in 3.4. | MRG – 14/01/16 | 2011-12 participation rates have been included in the documentation, with the comment that these rates are expected to improve in the future.  | 01/02/16 |[x]  MRG pre-meet04/02/16 |
| 3d | A clearer and more user-friendly explanation around the process of retaining distinct Study IDs following data linkage was requested. | MRG – 14/01/16 | Clarified the documentation to clarify that the data is limited to 2011-12 which explains the reduction in activity.  | 01/02/16 |[ ]   |
| 3e | In 3.10, MRG recommend that the applicant make clear how ‘phases’ and ‘assessments’ are defined. | MRG – 14/01/16 | These have been added to the 3.11 justification section. | 01/02/16 |[x]  MRG pre-meet04/02/16 |

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| **Construction** |  |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 4a | Following the MRG appraisal for ‘Referrals to cardiac rehabilitation’, a recommendation was issued regarding further justification for not using standardisation methods as per the comments made by the sponsor in the MRG meeting – i.e. that all cases should be referred, that age is not a factor within (most) of the care pathways, and that standardising would build in bias. | MRG – 26/11/2015 | Documentation updated. | 24/12/15 |[x]   |

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|  | **Presentation and Interpretation** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 5a | MRG recommend omitting the suggestion of standardising to reduce variation in section 5.9. Not standardising for age and gender has been well-justified in 4.5.  | MRG – 14/01/2016  | This has been removed | 01/02/16 |[x]  MRG pre-meet04/02/16 |
| 5b | A question was raised around whether it is clinically appropriate for those patients with a pacemaker or angina, alongside one of the primary conditions captured by the indicator, to be referred to and to complete cardiac rehabilitation.  | MRG – 14/01/2016  | Following this request from MRG, NACR confirmed that those with angina or a pacemaker in addition to one of the aforementioned diagnoses/processes are expected to be referred and complete cardiac rehabilitation. | 01/02/16 |[x]  MRG pre-meet04/02/16 |

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| **Risks and Usefulness** |
| ***Rec. no******Issue or recommendation******Raised by / Date******Response or Action taken by applicant******Response date******Resolved******Sign off by / Date*** |
| No issues or recommendations were highlighted during the assurance process for this criterion. |

**Any complaints or appeals against the decisions made during the assurance process should be made to the Indicator & Methodology Assurance Service (IMAS) Team at HSCIC. Likewise, if you are unclear regarding any of the recommendations in this report, or have any queries about the assurance process in general, please contact the IMAS team.**

**Indicator and Methodology Assurance Service**

**Health and Social Care Information Centre**

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**LEEDS**

**LS1 6AE.**

**Email:** **indicator.assurance@hscic.gov.uk**

**Website:** [**http://www.hscic.gov.uk/article/1674/Indicator-Assurance-Service**](http://www.hscic.gov.uk/article/1674/Indicator-Assurance-Service)

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