NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1497 **NQF Project:** Cardiovascular Endorsement Maintenance 2010

MEASURE DESCRIPTIVE INFORMATION

De.1 **Measure Title:** Cardiac Rehabilitation/Secondary Prevention (CR) Program Measurement Set to Assess Risk for Adverse Cardiovascular Events

De.2 **Brief description of measure**: Cardiac Rehabilitation/Secondary Prevention (CR) Program Measurement Set to assess the presence of 2 assessments of risk for adverse cardiovascular events

1.1-2 **Type of Measure:** Structure/management
De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
This is one of a group of paired measures to promote and measure quality in cardiac rehabilitation/secondary prevention programs (CR) and is associated with two NQF endorsed measures related to referral to CR. During development of the referral measures and during that endorsement process, reviewers emphasized that it is important to assure quality CR programming and to encourage care coordination with other health care providers. Moreover, this set of measures both quantifies the infrastructure from which CR is provided and specific aspects of care to incorporate all relevant dimensions. This measure and its paired measures are being submitted to fill that role.
1.) Cardiac Rehabilitation/Secondary Prevention (CR) Program Structure-Based Measurement Set to Set Safety Standards for CR Programming
2.) Cardiac Rehabilitation/Secondary Prevention (CR) Program Measurement Set to Assure Individualized Assessment and Evaluation of Modifiable Cardiovascular Risk Factors, Development of Individualized Interventions, and Communication with Other Health Care Providers
3.)Cardiac Rehabilitation/Secondary Prevention (CR) Program Measurement Set Related to Monitoring Response to Therapy and Documenting Program Effectiveness

De.4 **National Priority Partners Priority Area:** Care coordination
De.5 **IOM Quality Domain**: Effectiveness, Patient-centered
De.6 **Consumer Care Need:** Getting better, Staying healthy, Living with illness

CONDITIONS FOR CONSIDERATION BY NQF

Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** Y☐ N☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive, Accreditation	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Cardiac rehabilitation/secondary prevention (CR) services reduce morbidity and mortality in patients with cardiovascular disease, as well as significantly improve modifiable cardiovascular risk factors, adherence to preventive medications, quality of life and functional capacity (1,2,3) The National Quality Forum recently endorsed performance measures to assess referral to	**1a** C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
- a specific national health goal/priority identified by NQF's National Priorities Partners; OR
- a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

cardiac rehabilitation/secondary prevention programs (CR) from inpatient and outpatient settings (0642 and 0643) in order to decrease disparities related to CR participation. These patients are at relatively high risk for cardiovascular emergencies and recurrent cardiovascular events, which is why risk stratification at program entry and periodic reassessment during CR participation is important to assure safe and appropriate CR service delivery. A standardized assessment should be performed to identify patients with unstable symptoms and other factors that place the patient at increased risk for adverse cardiovascular events. (4) When high-risk findings are noted, a patient should be considered for prompt evaluation and treatment, and rehabilitation recommendations should be adjusted accordingly. Recurrent adverse cardiovascular events are relatively common in persons with cardiovascular disease (CVD). In one study from Olmsted County, Minnesota, nearly half of patients discharged from the hospital following a myocardial infarction (MI) had a recurrent adverse cardiovascular event in the 3 years following their MI. (5) Adverse events are relatively rare during CR early after a CVD event, occurring approximately once in every 100,000 patient-hours.(6) This safety record is likely due in part to standard procedures that exist in CR programs to frequently screen patients for signs and symptoms that increase their risk for adverse cardiovascular events. (4,6) If a CR participant develops abnormal cardiovascular signs (significant arrhythmias or blood pressure abnormalities, for example) or symptoms (exertional chest pain, for instance) they typically receive prompt evaluation and care. (7) In addition, CR programs are expected to meet safety standards such as emergency preparedness and appropriate physician direction. These standards are elaborated in a paired performance measure related to CR programs, Cardiac Rehabilitation/Secondary Prevention (CR) Program Structure-Based Measurement Set to Set Safety Standards for CR Programming. This performance measure also does not cover the assessment of modifiable risk factors, such as blood pressure, cholesterol, and diabetes. Assessment of modifiable risk factors related to CVD prgression and recurrent CVD events is covered in another measure within this paired set (Cardiac Rehabilitation/Secondary Prevention (CR) Program Measurement Set to Assure Individualized Assessment and Evaluation of Modifiable Cadiovascular Risk Factors, Development of Individualized Interventions, and Communication With Other Health Care Providers).

1a.4 **Citations for Evidence of High Impact:** (1) Suaya JA, Statson WB, Ades PA et al. Cardiac rehabilitation and survival in older coronary patients. J Am Coll Cardiol 2009;54(10:25-33.
(2) Jolliffe JA, Rees K, Taylor RS et al. Exercise-based rehabilitation for coronary heart disease. Cochrane database of systematic reviews 2008 Issue 4.
(3) Giannuzzi P, Temporelli PL, Marchioli R et al. Global secondary prevention strategies to limit event recurrence after myocardial infarction: results of the GOSPEL study, a multicenter, randomized controlled trial from the Italian Cardiac Rehabilitation Network. Arch Intern Med. 2008. 168:2194-204.
(4) Leon AS, Franklin BA, Costa F, Balady GJ, Berra KA, Stewart KJ, Thompson PD, Williams MA, Lauer MS. Cardiac rehabilitation and secondary prevention of coronary heart disease: an American Heart Association scientific statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Cardiac Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity), in collaboration with the American association of Cardiovascular and Pulmonary Rehabilitation. Circulation. 2005;111:369-76
(5) Jokhadar M, Jacobsen SJ, Reeder GS, Weston SA, Roger VL. Sudden death and recurrent ischemic events after myocardial infarction in the community. Am J Epidemiol. 2004;159:1040-6.
(6) Van Camp SP, Peterson RA. Cardiovascular complications of outpatient cardiac rehabilitation programs. JAMA. 1986;256:1160-3.
(7) AACVPR. Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs. Human Kinetics. 2004.

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** This measure will assure that cardiac rehabilitation/secondary prevention programs have processes in place to identify high risk patients, monitor and treat them appropriately, and communicate with physicians and other health care providers to improve clinical outcomes. It is part of a set of measures related to CR, and those measures are designed to assure high quality coordinated secondary prevention programs for patients with cardiovascular disease

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
The American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) sponsors a Certification and Recertification process to help Cardiac Rehabilitation/Secondary Prevention Programs (CR) engage in

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Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

quality improvement. (1) This process is linked to the American Heart Association/AACVPR Core Components of CR scientific statement (2), as well as to AACVPR CR Program Guidelines (3).
Requirements for program certification currently include providing a narrative describing the method of risk stratification used and how it influences development and implementation of the plan of care, submitting a completed risk stratification form, submitting a log of events that required staff or physician intervention or cessation of an exercise session, and submitting evidence of communication with physicians. These elements reflect a program's compliance with the risk assessment and communication standards required in this performance measure.
However, less than 40% of CR programs operating in the United States are currently AACVPR certified, demonstrating significant opportunity for improvement with implementation of this measure. (4)
Recent data from the AACVPR Certification/Recertification process also confirms variability in performance across providers, even among those CR professionals who are motivated to apply for voluntary certification for performance improvement reasons. From a total of 607 applications received between 2007 and 2009, 467 required remediation efforts and resubmission prior to approval, 39 were not approved and were placed into a provisional category, and 12 were denied certification or recertification. In 2010, out of 105 applications for certification, four were denied, and from 247 applications for re-certification, 2 were denied. (4).

1b.3 Citations for data on performance gap:
(1) http://www.aacvpr.org/Portals/0/CardioCert_ScreenShots.pdf
(2) Balady GJ, Ades PA, Comoss P, Limacher M, Pina IL, Southard D, Williams MA, Bazzarre T. Core components of cardiac rehabilitation/secondary prevention programs: 2007 Update. A statement for healthcare professionals from the American Heart Association and the American Association of Cardiovascular and Pulmonary Rehabilitation Writing Group. Circulation. 2007;115:2675-82.
(3) AACVPR. Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs. Human Kinetics. 2004.
(4) Personal communication from Abagail Lynn, AACVPR staff

1b.4 Summary of Data on disparities by population group:
There is no data demonstrating that there are disparities in care of patients enrolled in CR programs that are related to this measure among populations. In fact, during a recent national AACVPR survey of CR Program Directors (n=173), who treat patients in a variety of settings ranging from rural to suburban to urban, 96.0% included patient assessment of risk for CV events in their operations policies and procedures.

1b.5 Citations for data on Disparities:
Http://www.surveymonkey.com/sr.aspx?sm=S51wfjUseS_2f8aUeiTSmypJGplpYqAKypO9ARlij_2bWXQ_3d

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** While not an outcome, this measure is designed to help health care groups identify potentially correctable and actionable "upstream" sources of suboptimal care. This measure quantifies specific aspects of care and is designed to capture all relevant dimensions of CR care. Cardiac rehabilitation/secondary prevention (CR) services reduce morbidity and mortality in patients with cardiovascular disease.These patients are at relatively high risk for cardiovascular emergencies and recurrent cardiovascular events, which is why risk stratification at program entry and periodic assessment for changes in clinical status affecting cardiovascular risk during CR are very important for CR service delivery.

1c.2-3. Type of Evidence: Other AHA and AACVPR Scientific Statements

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
The position papers and guidelines from the AACVPR and the American Heart Association listed below were written to help CR professionals provide high quality CR programs, and these documents clearly support this performance measure. The provisions of this measure support safe, effective CR programming. There is a consistent body of strong evidence to show that CR decreases mortality and improves modifiable cardiovascular risk factors, adherence to preventive medications, quality of life and functional status. This measure was developed to assure appropriate assessment of risk for adverse cardiovascular risk at entry and

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Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

during participation in CR.

Relevant statements from AHA and AACVPR Scientific Statements and Guidelines:
AACVPR Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs (1)
All cardiac patients entering exercise rehabilitation should be stratified according to the risk for the occurrence of cardiac events during exercise.
Exercise Standards for Testing and Training: A Statement for Health Care Professionals From the American Heart Association (2)
Screening procedures can be used that identify an individual who is at risk for an exercise-related cardiac event, which may be helpful in reducing these occurrences. After the medical evaluation is complete, subjects can be classified by risk on the basis of their characteristics. This classification is used to determine the need for subsequent supervision and the level of monitoring required.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
N/A

1c.6 Method for rating evidence: Scientific Statements

1c.7 Summary of Controversy/Contradictory Evidence: Published reports suggest limited accuracy of the risk stratification methods from the AACVPR, ACC/AHA, and the American College of Physicians in identifying patients at risk for adverse events during CR sessions. (1) However, one study found that a combination of the AACVPR criteria with a comorbidity index helped improve the accuracy of risk stratification, particularly among female patients.(2) A significant limitation to these studies is the fact that patients identified at high risk undergo additional evaluation and treatment to lower their risk, thereby dampening the ability of such screening measures to accurately identify individuals at increased risk of adverse cardiovascular events.

(1) Paul-Labrador M, Vongvanich P, Merz CN. Risk stratification for exercise training in cardiac patients: do the proposed guidelines work? J Cardiopulm Rehabil. 1999;19:118-25.
(2) Zoghbi GJ, Sanderson B, Breland J, Adams C, Schumann C, Bittner V. Optimizing risk stratification in cardiac rehabilitation with inclusion of a comorbidity index. J Cardiopulm Rehabil. 2004;24:8-13; quiz 14-5.

1c.8 Citations for Evidence (*other than guidelines***):** (1) AACVPR. Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs. Human Kinetics. 2004.
(2) Fletcher GF, Balady GJ, Amsterdam EA, et al. Exercise standards for testing and training: a statement for healthcare professionals from the American Heart Association. Circulation 2001;104:1694-740.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
see above

1c.10 Clinical Practice Guideline Citation: (1) AACVPR. Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs. Human Kinetics. 2004.
(2) Fletcher GF, Balady GJ, Amsterdam EA, et al. Exercise standards for testing and training: a statement for healthcare professionals from the American Heart Association. Circulation 2001;104:1694-740.
1c.11 National Guideline Clearinghouse or other URL: N/A

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
N/A

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
N/A

1c.14 Rationale for using this guideline over others:
This guideline was the major source document for development of this performance measure because it

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

provides guidance about target goals for the majority of the modifiable cardiovascular risk factors. The core components of cardiac rehabilitation are based on this guideline.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, **met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** The cardiac rehabilitation/secondary prevention (CR) program performs an assessment of risk for 2 adverse cardiovascular events: 1. Documentation, at program entry, that each patient undergoes an assessment of clinical status (e.g., symptoms, medical history) in order to identify high-risk conditions for adverse cardiovascular events. 2. A policy to provide recurrent assessments for each patient during the time of participation in the CR program in order to identify any changes in clinical status that increase the patient's risk of adverse cardiovascular events. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** per reporting year **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** If there are clinical status changes, the CR staff contacts the program's physician director and/or the patient's primary health care provider according to thresholds for communication included in the policies developed for Proposed AACVPR/ACCF/AHA Performance Measure: Individualized Assessment and Evaluation of Modifiable Cardiovascular Risk Factors, Development of Individualized Interventions, and Communication With Other Health Care Providers. (J-Communication With Health Care Providers)	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** All CR Programs **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** 18 years or older **2a.7 Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** per reporting year **2a.8 Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):** None	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None	

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
None

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
No

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Categorical
2a.20 Interpretation of Score: Passing score defines better quality
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
N/A

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Not based on a sample

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Organizational policies and procedures

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Program policies and procedures and documentation of compliance using departmental records. This can be submitted electronically.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL refer to Tab 12 in the Certification application and Tab6 in the Recertification application for definitions and explanations related to documentation currently required. These requirements may be modified after additional testing of this measure. Cardiac Certification application: http://www.aacvpr.org/Portals/0/CardioCert_ScreenShots.pdf and Cardiac Recertification application: http://www.aacvpr.org/Portals/0/CardioRecert_ScreenShots.pdf

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Group, Facility/Agency, Integrated delivery system

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic, Ambulatory Care: Hospital Outpatient, Rehabilitation Facility, Other Community Healthcare

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Dietician/Nutritional professional, Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Clinicians: Psychologist/LCSW, Clinicians: PT/OT/Speech, Other exercise specialists

TESTING/ANALYSIS	
2b. Reliability testing	**2b**

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

2b.1 Data/sample *(description of data/sample and size)*: Because the AACVPR cardiac rehabilitation program certification and recertification process requires documentation that programs are compliant with this measure, inter-rater reliability testing was performed for a subset of records submitted for program certification in 2010. AACVPR certification is a process that helps programs improve care and meet essential standards via application of performance measures and guidelines. Currently, there are 1,147 AACVPR certified programs in the United States. In 2009, specific steps were taken to improve Inter-Rater Reliability related to the certification and recertification process. These steps were as follows: : 1) Pre-examination training for all examiners completed by interactive webinar, 2) Limit response of examiners to pre-approved text unless approved by committee chair, 3) Applications not meeting full certification requirements must be presented to and approved by the Chair prior to determination being finalized, 4) Examiners will use the period between first and second review of applications (April to July) to remediate with applicants who have outstanding issues, 5) Chairs will be issued fewer applications for review to enable them to support the examiners in their remediation efforts, 6) the Appeals Task Force will be required to complete the interactive webinar-based examiner training prior to reviewing and scoring appeals, 7) Chairs will meet after the examination process to abstract and review a limited sampling from each examiner to ensure consistency in scoring and standards interpretation, 8)identified inter-examiner variances will be addressed on an individual basis by the respective chair (Certification or Recertification) who will provide direct one on one or group (if indicated) training regarding the observed variances, and said variance will be highlighted in the next annual training program, and 9) considerable time and expense have and will continue to be applied to the annual review of application questions to refine the validity and clarity of each component of the application. Subsequently, during 2010, a subset of 30 program applications was tested for inter-rater reliability.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
Inter-Rater Reliability: Inter-rater reliability testing was performed by 6 experienced AACVPR certification reviewers on a total of 30 records submitted for program certification in 2010. Each reviewer re-reviewed each application to determine acceptance or denial of certification, blinded to the original decision and name of the facility. In addition, no reviewer was given a program he/she had initially reviewed. Certification is an all or none phenomenon - there must be evidence for compliance with all measures in order for a program to be certified. Therefore, agreement about whether to certify or deny also confirms agreement about compliance with this particular measure related to program safety. Cohen's Unweighted Kappa testing was used to determine degree of inter-rater agreement.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
INTER-RATER RELIABILITY: 24 of the applications that were initially approved for certification were also approved on second review (approved/approved). 4 of the applications that were initially denied certification were also denied on second review (denied/denied). 2 of the applications that were initially approved for certification were scored as denied second review (approved/denied). There were no applications that were initially denied that were then scored as approved on second review (denied/approved). Analysis for Cohen's Unweighted Kappa was performed and revealed a coefficient of 0.7619. According to the scale for agreement established by Landis and Koch in 1977 (0.41 – 0.60 "moderate agreement"; 0.61 – 0.80 "substantial agreement"; and 0.81 – 1.00 "almost perfect agreement") a kappa coefficient of 0.7619 places the inter-rater reliability of the measure set firmly in the high end of "substantial agreement".

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Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: CONTENT/CONTEXT VALIDITY: To determine the content/context validity of the measures, a Delphi like peer review process was utilized. An explicit part of all ACCF/AHA performance measures development is conducting a formal 30 day public comment period. Reviewers were asked to provide comments on the document on the basis of the rating form and guide shown on page 1432 at Http://content.onlinejacc.org/cgi/reprint/j.jacc.2007.04.033v1.pdf
Content/context validity of the measures were established by virtue of the specialized expertise of the Performance Measures Work Group members who were involved in identifying and drafting the performance measures (all leaders and experts in the field of cardiac rehabilitation as chosen by the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), the American College of Cardiology (ACC), and the American Heart Association (AHA), as well as the structured discussions that the work group

2c
C☐ P☐ M☐ N☐

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

conducted, in addition to rigorous peer review and public comment.
FACE VALIDITY: In addition to determination by the sample experts listed for content and context validity, face validity was also determined through rigorous peer review. A panel of 15 experts in the field of cardiac rehabilitation was contacted through an online survey tool and asked to rate each measure according to the following statement: "In my expert opinion, the details of the measure xx describe high quality safety standards for a cardiac rehabilitation program." Reviewers were aware that they were rating the performance measure set, but were blinded to information that these results were to be made available to NQF as part of the performance measure submission process. A four-point forced choice Likert scale was utilized to eliminate the possibility of a reviewer scoring "not applicable" as it was believed that experts at this level should have an opinion as to the standards applicable to each measure (4 strongly agree; 3 agree; 2 disagree; 1 strongly disagree).
Face validity testing was done in 2010, using a standardized survey available at http://www.surveymonkey.com/sr.aspx?sm=pi5SWz5AviYwauEfNS_2fIBUoS7c5T_2fdgL79YwqnS7NIE_3d.
PREDICTIVE VALIDITY: The Wisconsin Cardiac Rehabilitation Outcomes Registry (WiCORE) is an online database designed to collect individual patient-level data collected at cardiac rehabilitation admission and discharge from diverse programs from around the country (not limited to the state of Wisconsin). It is the most extensive, non-commercial, patient-level database of cardiac rehabilitation outcomes available in the United States. WiCORE is the product of collaboration between WISCPHR (The Wisconsin Society for Cardiovascular and Pulmonary Health and Rehabilitation), HDSP (The State of Wisconsin Heart Disease and Stroke Prevention Program), and DoIT (The University of Wisconsin Department of Information Technology, Office of Collaborative Applications). WiCORE currently has data on over 17,000 patients, with discharge data available for over 12,000 of these records.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
CONTENT/CONTEXT VALIDITY: Determined by structured work group discussions, in addition to rigorous peer review and public comment. The steps in the analytic method were: 1. Formation of the Development Committee: This measure was developed by the AACVPR/ACC/AHA Cardiac Rehabilitation/Secondary Prevention Performance Measures Writing Committee, which was initially convened in 2005. The Writing Committee was composed of appointed representatives from the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), the American College of Cardiology (ACC), and the American Heart Association (AHA), including past and current representatives of the ACC Task Force on Performance Measures, past and current presidents of AACVPR, and clinicians with expertise in general clinical cardiology, heart failure, cardiovascular disease, and cardiac rehabilitation. 2. Identification of Potential Factors for Inclusion: The Writing Committee initially identified 39 factors from various practice guidelines and other reports that were considered potential performance measures for the Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets based on level of evidence and strength of recommendation from the peer reviewed literature. These 39 measures were then evaluated for inclusion in the initial draft of the measures according to guidelines established by the ACC/AHA Task Force on Performance Measures.Those measures that were deemed to be most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible were included in the final performance measurement sets. Once these measures were identified, the Writing Committee then discussed and refined, over a series of months, the definition, content, and other details of each of the selected measures. 3. Scoring of the Factors/Expert Opinion: Utilizing the ACC/AHA system for classification of recommendations and level of evidence for guidelines and clinical recommendations system those measures that were deemed to be most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible were included in the final performance measurement sets. 4. Number of Factors Kept: 20 factors were included in the final draft of the performance measures. 5. Refinement of the PM by the Development Committee: After the measures were identified, the Writing Committee discussed and refined these measures, developing the definition, content, and other details during 2006. 6. Public Comment Period/Peer Review: The measurement set underwent a public comment period from December 11, 2006 until January 11, 2007. Peer reviewers were asked to provide comments on the document on the basis of a Likert like rating form assessing the evidence-base for each measure, the interpretability for practitioners of each measure, if the measure were actionable for practitioners, and design elements of each measure including the denominator and numerator. 7. Further Refinement: After the public comment period the measures were identified, the Writing Committee discussed and refined these measures, developing the definition, content, and other details during 2007. The final measure set was approved by the American Association of Cardiovascular and Pulmonary Rehabilitation Board of Directors in May, 2007, the American College of Cardiology Foundation Board of Trustees in April 2007, and by the American Heart

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Association Science Advisory and Coordinating Committee in April 2007. The performance measure set was also reviewed via AHA and ACC processes as well as by the AACVPR Document Oversight Committee. 8. Peer Review Publication/Endorsement: The final document was submitted to the Journal of the American College of Cardiology (the official journal of the American College of Cardiology), the Journal of Cardiopulmonary Rehabilitation and Prevention (the official journal of the American Association of Cardiovascular and Pulmonary Rehabilitation) and Circulation (the official journal of the American Heart Association) for peer review and publication.

FACE VALIDITY: The face validity of the measure set was determined via a four step process. 1. Standards of Care: Determined through the process listed for content and context validity. It was determined by this process that this measure has a high face validity, because the standards in this measure are well established as standards of care, including individualized patient assessment for cardiovascular risk and communication with other health care providers about adverse events. 2. Public Comment Period: Face validity assessment is available for this measure, based on data from the public comment period of the AACVPR/ACCF/AHA performance measures that were published in 2007. 3. Testing Via Certification/ Re-certification Process: Currently, compliance with this measure is determined through the AACVPR Program Certification/ Re-certification. AACVPR has developed a national Outcomes Data Registry which allows correlation of compliance with this measure to meaningful clinical outcomes. 4. Peer Review: Face validity was also determined through rigorous peer review. A panel of 15 experts in the field of cardiac rehabilitation were contacted through an online survey tool and were asked to rate each measure according to the following statement: "In my expert opinion, the details of the measure xx describe high quality safety standards for a cardiac rehabilitation program." Reviewers were aware that they were rating the performance measure set, but were blinded to information that these results were to be made available to NQF as part of the performance measure submission process. A four-point forced choice Likert scale was utilized to eliminate the possibility of a reviewer scoring "not applicable" as it was believed that experts at this level should have an opinion as to the standards applicable to each measure (4 strongly agree; 3 agree; 2 disagree; 1strongly disagree).
PREDICTIVE VALIDITY: An analysis has been conducted to examine programmatic structures, utilization and outcomes of the WiCORE dataset. To test the predictive ability of the measure set, outcomes for patients enrolled in cardiac rehabilitation programs that were AACVPR-certified (approximately 40% of the programs currently enrolled in WiCORE) have been compared to outcomes for patient enrolled in programs that were not AACVPR certified in the WiCORE dataset. The analysis tests the hypothesis that AACVPR-certified programs had superior outcomes compared to those that were not certified. Outcomes included in the analysis will be: changes in lifestyle habits (exercise, nutrition, smoking); treatment with and adherence to preventive medications; functional capacity; quality of life; psychological health; re-hospitalization rates; recurrent CVD events and mortality. All data would be adjusted for potential confounders (age, gender, co-morbid conditions and program characteristics.).

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**
CONTENT/CONTEXT VALIDITY: In May 2007 the final peer reviewed publication of the performance measures document was approved by the American Association of Cardiovascular and Pulmonary Rehabilitation Board of Directors, the American College of Cardiology Foundation Board of Trustees and by the American Heart Association Science Advisory and Coordinating Committee. Additionally, the publication was endorsed by the American College of Chest Physicians, American College of Sports Medicine, American Physical Therapy Association, Canadian Association of Cardiac Rehabilitation, European Association for Cardiovascular Prevention and Rehabilitation, Inter-American Heart Foundation, National Association of Clinical Nurse Specialists, Preventive Cardiovascular Nurses Association, and the Society of Thoracic Surgeons. The final document was published the Journal of the American College of Cardiology (the official journal of the American College of Cardiology), the Journal of Cardiopulmonary Rehabilitation and Prevention (the official journal of the American Association of Cardiovascular and Pulmonary Rehabilitation) and Circulation (the official journal of the American Heart Association) in September 2007. The document can be found at http://content.onlinejacc.org/cgi/reprint/j.jacc.2007.04.033v1.pdf.

FACE VALIDITY: A panel of 15 experts in the field of cardiac rehabilitation was contacted through an online survey tool and asked to rate each measure according to the following statement: "In my expert opinion, the details of the measure xx describe high quality safety standards for a cardiac rehabilitation program." Reviewers were aware that they were rating the performance measure set, but were blinded to information

that these results were to be made available to NQF as part of the performance measure submission process. A four-point forced choice Likert scale was utilized to eliminate the possibility of a reviewer scoring "not applicable" as it was believed that experts at this level should have an opinion as to the standards applicable to each measure (4 strongly agree; 3 agree; 2 disagree; 1 strongly disagree).
Mean values for each four point forced choice question for this measure were: Risk Assessment at entry (3.86); Recurrent risk assessment (3.64). N for total responders was 14 (93.3% response rate).

Additional testing will be made available by the time the NQF Cardiovascular Steering Committee convenes in February 2011.

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**
There are no measure exclusions.

2d.2 **Citations for Evidence:**
N/A

2d.3 **Data/sample** *(description of data/sample and size)*: N/A

2d.4 **Analytic Method** *(type analysis & rationale)*:
N/A

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:
N/A

2d
C☐
P☐
M☐
N☐
NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: No risk adjustment needed

2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*:

2e.3 **Testing Results** *(risk model performance metrics)*:

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** The assessment and communication standards in this measure apply to all CR programs, regardless of size, location, or patient population served.

2e
C☐
P☐
M☐
N☐
NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: Cardiac Certification application: http://www.aacvpr.org/Portals/0/CardioCert_ScreenShots.pdf and Cardiac Recertification application: http://www.aacvpr.org/Portals/0/CardioRecert_ScreenShots.pdf
In the year 2007 247 cardiac rehabilitation programs applied for AACVPR certification or re-certification. In 2009 106 programs applied for certification. These 353 programs form the data set for the analysis.

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
Please refer to section 2b for details about training and inter-rater reliability testing of AACVPR program certification reviewers. Elements of this performance measure are currently used as required standards for program certification. Reviewers determine compliance with this measure by evaluating materials submitted for the questions on pages 2,5, 15 of the Certification application. Programs must submit evidence for compliance with all application questions in order to be recommended for certification or recertification. The final decision for certification, recertification or denial is made by the AACVPR Board of Directors and specific information about the reason for denial is provided to the Board by the review committee. The reasons for denial during 2007 and 2009 are included in 2f.3.

2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by*

2f
C☐
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M☐
N☐

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category ... [1]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for a ... [2]

quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance):
In 2007, 62 programs cardiac rehabilitation programs applied for AACVPR certification and in 2009 168 applied. Of these, 163 were approved (97%) and 5 were denied (3%). Programs that apply for certification represent a skewed sample of all cardiac rehabilitation programs in the country as they clearly have determined, through rigorous self study based on application guidelines and instructions, that they meet the quality guidelines set forth by the AACVPR certification process and thus, most likely meet the guidelines for these performance measures. The high acceptance rate demonstrates this aspect of the data analysis.

In 2009, the program that was denied certification in 2007 was accepted. This demonstrates that the self-study initiated by the certification review process can be successful in remediation of programs to follow the performance measures proposed.

Additionally, in 2007, 185 programs applied for re-certification and 184 were approved (99.5%) thus demonstrating the consistency of the measures. Finally, the one program denied re-certification in 2007, was approved in 2009 after remediation.

2g. Comparability of Multiple Data Sources/Methods

2g.1 **Data/sample** *(description of data/sample and size)*: We are not currently aware of any other data sources beyond what has been specified for the proposed 4 measures and the referral measures that have already been endorsed by NQF (0642 and 0643). See section 3b1 for details.

2g.2 **Analytic Method** *(type of analysis & rationale)*:
N/A

2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*:
N/A

2g
C☐
P☐
M☐
N☐
NA☐

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2h. Disparities in Care

2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: N/A

2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**
N/A

2h
C☐
P☐
M☐
N☐
NA☐

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*

2

Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?**
Rationale:

2
C☐
P☐
M☐
N☐

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:**

3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*):
This measure is incorporated into the AACVPR Certification and Recertification program and certified CR programs are identified in the AACVPR Program Directory, which is publicly available on several websites, including those listed below:
AACVPR Certified Program Directory – Searchable Program Directory for patients and healthcare practitioners

3a
C☐
P☐
M☐
N☐

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

http://www.aacvpr.org/Resources/SearchableCertifiedProgramDirectory/tabid/113/Default.aspx
AHA cardiac rehabilitation education site:
http://www.heart.org/HEARTORG/Conditions/More/CardiacRehab/What-is-Cardiac-Rehabilitation_UCM_307049_Article.jsp
Society for Cardiovascular Angiography and Intervention (SCAI) Seconds- Count cardiac rehabilitation education webpage:
http://www.scai.org/SecondsCount/Treatment/cardiacrehab.aspx

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
Although this measure is not currently publicly reported, its components are included in the AACVPR Certification and Recertification application. Currently, there are a total of 1,147 AACVPR certified cardiac rehabilitation/secondary prevention programs in the United States, which is less than 40% of eligible programs. A link to AACVPR Certified programs is found at
http://www.aacvpr.org/Resources/SearchableCertifiedProgramDirectory/tabid/113/Default.aspx
Attainment of AACVPR certification is a quality improvement initiative for an individual CR program. During the certification and recertification process, programs are required to provide evidence that they meet standards related to individual patient assessment for risk for adverse cardiovascular risk, as well as other quality measures related to safety of programming and use of outcomes data to do local quality improvement projects.
The paired measures related to CR programs are used for quality improvement initiatives. For example, the Montana Outcomes project has used information from CR reporting of modifiable risk factors such as functional capacity, dietary fat consumption, and BP pressure measurement to develop three multi-state outcomes projects. Data reported from CR programs showed variation in functional capacity outcomes. Research into why some programs were under-performers revealed conservative exercise prescription and failure to encourage exercise on days that patients were not attending CR sessions. After intervention, which consisted of a webinar about appropriate exercise prescription and home walking programs, aggregate data revealed an increase in functional capacity from 28% improvement after CR to 39% improvement, compared to baseline. The Montana Outcomes project also helped underperforming CR programs improve outcomes related to dietary fat intake. The intervention program consisted of a webinar by a registered dietician to CR staff, including access to patient education slides and handouts. After intervention, aggregate outcomes data related to reported dietary fat intake improved from 24% improvement in fat intake prior to intervention to 29% improvement. Finally, this registry was used to identify disparities related to blood pressure measurement in CR and to correct these disparities. Interventions included institution of JNC guidelines, patient education related to sodium, weight loss, medication compliance, physician communication, and encouraging exercise. Prior to the intervention (April to June, 2009), 81% met goal criteria for blood pressure control. Post intervention (July to September, 2009), 97% met goal criteria for BP control.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:** characteristics of the entities included)
No specific testing of this measure is needed because CR professionals understand and regularly use this measure. In fact, during a recent national AACVPR survey of CR Program Directors (n=173), 96.0% included patient assessment of risk for CV events in their operations policies and procedures, and elements of this measure are part of the AACVPR Program Certification/Recertification process.
The AHA and SCAI patient education Web pages include a link to the AACVPR Certified Program Directory, reflecting that other professional organizations recognize that compliance with this measure, as included in the AACVPR certification process, reflects quality programming.

3a.5 Methods *(e.g., focus group, survey, QI project)***:**
Http://www.surveymonkey.com/sr.aspx?sm=S51wfjUseS_2f8aUeiTSmypJGplpYqAKypO9ARlij_2bWXQ_3d
http://www.heart.org/HEARTORG/Conditions/More/CardiacRehab/What-is-Cardiac-Rehabilitation_UCM_307049_Article.jsp
http://www.scai.org/SecondsCount/Treatment/cardiacrehab.aspx

3a.6 Results *(qualitative and/or quantitative results and conclusions)***:**

See above	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** 0642: Cardiac Rehabilitation Referral from inpatient setting 0643: Cardiac Rehabilitation Referral from outpatient setting	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** Yes, fully harmonized. This measure is harmonized with the recently NQF endorsed referral to cardiac rehabilitation/secondary prevention programs from inpatient and outpatient setting measures.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** This measure, and other submitted paired measures, provide performance measures to encourage performance improvement within multidisciplinary, team based cardiac rehabilitation/secondary prevention programs. 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Other Data elements are generated by collecting and reviewing Program Policies	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.**
Because data collection involves review of program policies, there is the possibility that programs are not being conducted in a manner consistent with their policies.

4d
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M☐
N☐

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

4e. Data Collection Strategy/Implementation

4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:**
The AACVPR Program Certification process has been in place since 1999, and there are currently 1,147 certified cardiac rehabilitation programs in the United States. The certification process has evolved from a paper based system with subjective review by peers, including a level of state affiliate review, to an electronic based system with separate volunteer review, process/oversight, and contents groups. Over the past several years, process improvements have included using state volunteer groups as mentors to assure that data and elements are not missing, returning submitted material that does not meet HIPAA criteria, standardized reviewer tools, and training for volunteer reviewers. Observed variances in examiner scoring of similar content applicant responses have lead to changes in the scoring process to improve inter-rater reliability. In the future, site visits may be conducted to confirm compliance with policy, integrated into performance improvement for the AACVPR Certification/Recertification process.

4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:**
There is no significant cost to implementing this measure. In general, CR Program Directors already include these measures in their operational policies and procedures, and the additional cost would be to electronically submit the policies that support these measures for AACVPR certification, if that is the way that these measures are implemented. The cost of Certification in 2010 was $600 and Recertification was $500. The price will be raised to $650 and $550 respectively for 2011.

4e.3 **Evidence for costs:**
AACVPR is a not-for-profit organization and the cost of certification and recertification is used to support the electronic submission process, staff time, and volunteer travel expenses needed to support the Certification/Recertification program.

4e.4 **Business case documentation:** See above for details. This is a relatively low-cost process, linked to a large body of evidence that CR can significantly improve patient outcomes.

4e
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N☐

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?

4

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?**
Rationale:

4
C☐
P☐
M☐
N☐

RECOMMENDATION

(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**

Time-limited ☐

Steering Committee: Do you recommend for endorsement?
Comments:

Y☐
N☐
A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
American Association of Cardiovascular and Pulmonary Rehabilitation/American College of Cardiology Foundation/American Heart Association, 2400 N. Street NW., Washington DC, District Of Columbia, 20037

Co.2 **Point of Contact**
Jensen, Chiu, MHA, jensen.chiu@acc.org, 202-375-6285-

Measure Developer If different from Measure Steward
Co.3 **Organization**
American Association of Cardiovascular and Pulmonary Rehabilitation/American College of Cardiology Foundation/American Heart Association, 2400 N. Street NW., Washington DC, District Of Columbia, 20037

Co.4 **Point of Contact**
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Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
The workgroup selected all measures, developed the measure specifications and the text in the accompanying article.
Randal J. Thomas, MD, MS, FAHA, FACP, Chair (AACVPR), Marjorie King, MD, FACC, MAACVPR(AACVPR),Karen Lui, RN, C, MS, MAACVPR (AACVPR), Neil Oldridge, PhD, FAACVPR (AACVPR),Ileana L. Piña, MD, FACC (ACCF/AHA Task Force on Performance Measures), John Spertus, MD, MPH, FACC (ACCF/AHA Task Force on Performance Measures)

Ad.2 **If adapted, provide name of original measure:** Cardiac Rehabilitation/Secondary Prevention (CR) Program Measurement Set to Assess Risk for Adverse Cardiovascular Events.
Ad.3-5 **If adapted, provide original specifications URL or attachment** URL
http://content.onlinejacc.org/cgi/reprint/j.jacc.2007.04.033v1.pdf

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2007
Ad.7 **Month and Year of most recent revision:** 09, 2007
Ad.8 **What is your frequency for review/update of this measure?** Annual Review for relevance and update as needed based on new evidence/feedback from implementation
Ad.9 **When is the next scheduled review/update for this measure?** 09, 2011

Ad.10 **Copyright statement/disclaimers:** This document was approved by the American Association of Cardiovascular and Pulmonary Rehabilitation Board of Directors in May 2007, the American College of Cardiology Foundation Board of Trustees in April 2007, and by the American Heart Association Science Advisory and Coordinating Committee in April 2007. When citing this document, the American College of Cardiology Foundation would appreciate the following citation format: Thomas RJ, King M, Lui K, Oldridge N, Piña IL, Spertus J. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Am Coll Cardiol 2007;50:1400–33. This article has been copublished in the October 2, 2007, issue of Circulation and the September/October issue of the Journal of Cardiopulmonary Rehabilitation and Prevention.

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Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 01/04/2011

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2d. Clinically necessary measure exclusions are identified and must be:

- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND

- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND

- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

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14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.