NATIONAL QUALITY FORUM

National Voluntary Consensus Standards for Imaging Efficiency
Measure Summary

Measure Number: IEP-014-10

Measure Title: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Description: Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation

Numerator Statement: Number of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients as a part of the preoperative evaluation

Denominator statement: Number of stress SPECT MPI, stress echo, CCTA, and CMR performed

Level of Analysis: Facility/Agency

Data Source: Paper medical record/flowsheet, Survey: Provider

Measure developer: American College of Cardiology Foundation

Type of Endorsement (full or time-limited): Full Endorsement

Attachments: Imaging Efficiency Measures Micro-specifications 121809-633976957308578086 and Optimization of Patient Selection for Cardiac Stress Imaging-633976957133111582

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
January 2010

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 sub-criteria and most of the footnotes from the evaluation criteria are provided in Word comments and will appear if your cursor is over the highlighted area (or in the margin if your Word program is set to show revisions in balloons). 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 sub-criterion 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* sub-criteria *(yellow highlighted areas)*.

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the sub-criterion, 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 sub-criteria as indicated)

(for NQF staff use) **NQF Review** #: IEP-014-10 **NQF Project:** Efficiency: Imaging Efficiency
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
De.2 **Brief description of measure***:* Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation
1.1-2 **Type of Measure:** efficiency/cost De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Overuse De.5 **IOM Quality Domain**: efficiency De.6 **Consumer Care Need:** 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*)**:** proprietary measure A.3 **Measure Steward Agreement:** agreement signed and submitted A.4 **Measure Steward Agreement attached:** MSA_ACCF-633983115849965670.pdf	**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, quality improvement 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, a leading cause of morbidity/mortality, frequently performed procedure, high resource use 1a.2 1a.3 **Summary of Evidence of High Impact:** Cardiac imaging is a mainstay in medical decision-making for patients with known or suspected heart disease. However, expenditures related to imaging comprise a significant portion of the health care budget. Much scrutiny has been focused on cardiovascular imaging with regard to the potential for overuse, especially in view of substantial geographic variation in ordering patterns and the limited amount of evidence-based data supporting the use of imaging as it relates to patient outcomes. Given the significant contribution of heart disease to morbidity and mortality and the prevalence of cardiovascular disease, it is important to determine the appropriate use of diagnostic tests such as stress echocardiography, stress SPECT MPI, CCTA, and CMR. 1a.4 **Citations for Evidence of High Impact:** Patel MR, Spertus JA, Brindis RG., et al. "ACCF proposed method for evaluating the appropriateness of cardiovascular imaging." J Am Coll Cardiol. 2005 Oct 18;46(8):1606-13.	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Appropriate use criteria define "when to do" and "how often to do" a given procedure in the context of scientific evidence, the health care environment, the patient's profile and a physician's judgment. While practice guidelines	**1b** 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).

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).

provide a foundation for summarizing evidence-based cardiovascular care or for providing expert consensus opinions, in many areas, marked variability remains in the use of cardiovascular procedures, raising questions about over-use and under-use. Appropriate use criteria provide practical tools to measure this variability and to look at utilization patterns. The criteria are designed to examine the use of diagnostic and therapeutic procedures to support efficient use of medical resources, while also providing patients with quality, appropriate care.

A measure that reports rates of inappropriate imaging within practices would contain information regarding both cost and quality, because an inappropriate test results in both higher costs and poorer-quality care. Conversely, a reduction in this rate would simultaneously improve quality and decrease cost. Improvements in this metric should lead to consistent application of AUC and improve the efficiency of the system.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
A number of studies have indicated that cardiac stress imaging in for preoperative evaluation is a common inappropriate use; especially in hospital outpatient settings

1b.3 Citations for data on performance gap:
Krumholz HM, Keenan PS, Brush JE et al. Standards for measures used for public reporting of efficiency in health care. J Am Coll Cardiol. 2008 Oct 28;52(18):1518-26.

Hendel, RC; Cerqueira, M; Douglas, PS et al. "A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria". J Am Coll Cardiol. Published online December 10, 2009.

Mehta R, Agarwal S, Chandra S, Ward RP, Williams KA: Evaluation of the American College of Cardiology Foundation/American Society of Nuclear Cardiology appropriateness criteria for SPECT myocardial perfusion imaging. J Nucl Cardiol. 2008;5:337–44.

Ward RP, Al-Mallah MH, Grossman GB, Hansen CL, Hendel RC, Kerwin TC, McCallister BD Jr., Mehta R, Dm Polk, Tilkemeier PL,Vashist A, Williams KA, Wolinsky DG, Ficaro EP: American Society of Nuclear Cardiology: American Society of Nuclear Cardiology review of the ACCF/ASNC appropriateness criteria for single-photon emission computed tomography myocardial perfusion imaging SPECT MPI). J Nucl Cardiol. 2007;14:e26–38.

Gibbons RJ, Miller TD, Hodge D, Urban L, Araoz PA, Pellikka P, McCully RB: Application of appropriateness criteria to stress single photon emission computed tomography sestamibi studies and stress echocardiograms in an academic medical center. J Am Coll Cardiol. 2008;51:1283–9.

McCully RB, Pellikka PA, Hodge DO, et al: Applicability of Appropriateness Criteria for Stress Imaging. Circ Cardiovasc Imaging. 2009;2:213–8.

1b.4 Summary of Data on disparities by population group:
None

1b.5 Citations for data on Disparities:
None

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*)**:** Diagnostic testing, such as stress SPECT MPI, stress echocardiography, CCTA, and CMR is used to detect disease and provide risk assessment used to modify treatment strategies and approaches. Information provided by such testing can initiate, modify and stop further treatments for coronary heart disease (medications and revascularization) which have an impact on patient outcomes. In addition, false positives and false negatives can adversely impact the patient and their treatment outcomes. Lastly, radiation from stress SPECT MPI and CCTA poses a minimal but still important consideration for patient safety. Ensuring proper patient selection can avoid using resources in patients not expected to benefit from the testings and for which the associated risks

1c
C☐
P☐
M☐
N☐

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.

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.

would be unnecessary.

1c.2-3. Type of Evidence: evidence based guideline, expert opinion

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Appropriate use criteria define "when to do" and "how often to do" a given procedure in the context of scientific evidence, the health care environment, the patient's profile and a physician's judgment. While practice guidelines provide a foundation for summarizing evidence-based cardiovascular care or for providing expert consensus opinions, in many areas, marked variability remains in the use of cardiovascular procedures, raising questions about over-use and under-use. Appropriate use criteria provide practical tools to measure this variability and to look at utilization patterns. The criteria are designed to examine the use of diagnostic and therapeutic procedures to support efficient use of medical resources, while also providing patients with quality, appropriate care.

Because of its patient-centered approach, it is hoped that appropriate use criteria can lead to patient education regarding expected benefits and risks associated with diagnostic and therapeutic procedures. In addition, physicians, payers and medical facilities can use the criteria prospectively or retrospectively to assess practice patterns, design ordering protocols and/or provide the basis for quality improvement activities focused on ensuring the most appropriate care for patients.

Unlike many performance measures which have primarily focused on underuse of evidence based therapies, this measure set focuses on overuse of diagnostic technology for which there are a limited number of prospective, randomized trials. As such, typical guideline based approaches to selecting the measures such as focusing on Class I, Level of Evidence A recommendations is not feasible. However, appropriate use criteria were designed to highlight patient scenarios for which observational data and expert opinion would indicate the incremental benefit gained by use of a diagnostic test is not justified. The data supporting these common inappropriate indications is based on well known risk algorithms (with more than 30 years of use) and observational data describing retrospectively and prospectively how the criteria have performed in determining test yield characteristics. In both cases, the evidence indicates that the expected information gained from a diagnostic test would be minimal compared to other patient populations. As such, the expected mortality benefit and treatment impact that such diagnostic testing would have based on current treatment guidelines would be minimal, as well. Table 1 highlights the yield of testing in a recent prospective study applying the SPECT MPI Appropriate Use Criteria. While the overall test yield was low in this study, a test with no or small amounts of ischemia in certain populations can be very meaningful and impact on the decision of whether to avoid more aggressive medical or interventional therapies. However, in the patient populations highlighted by this measure set, it would be difficult to justify the value of a negative test as these patients already would be unlikely to be candidates for therapy. Furthermore, a positive test, as can be seen below, is very unlikely and is an even more infrequent occurrence than in other patient scenarios.

Table 1. Test Results (All Sites, All Dates); N= 6333
Stratified by Appropriate Use Classification (ACC Internal Data Analysis of pilot data from: Hendel RC, Cerqueira M, Douglas PS, et al. A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria. JACC. December 10, 2009.)

Top Inappropriate
(low risk – Asx; routine post PCI; periop eval for low risk surgery)

Moderate Ischemia
0.6% of all patients in pilot N=38

Severe Ischemia
0.1% of all patients in pilot N=7

Moderate or Severe Ischemia
0.7% of all patients in pilot N=45

All other patients in pilot
Moderate Ischemia
6.1% of all patients in pilot N=384

Severe Ischemia
1.0% of all patients in pilot N=62

Moderate or Severe Ischemia
7.1% of all patients in pilot N=446

Note: No perioperative low risk surgery patients had moderate to severe ischemia

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Observational Studies and Expert Opinion - ACCF AUC Criteria Task Force

1c.6 Method for rating evidence: Specific evidence grades are not assigned by Appropriate Use Criteria (AUC), but generally diagnostic imaging evidence is based on observational studies, including well known risk models such as Framingham and Diamond and Forrester. In addition, a RAND modified Delphi process is used to determine the AUC rating that combines expert opinion with available evidence and specific patient information. Few studies are conducted to demostrate a lack of benefit and thus, clinical risk and expert opinion is required to develop the AUC.

1c.7 Summary of Controversy/Contradictory Evidence: None.

1c.8 Citations for Evidence (*other than guidelines***):** None - see guidelines for individual supporting articles

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
2007 Perioperative Guidelines
"…resting 12-lead ECG did not identify increased perioperative risk in patients undergoing low-risk surgery (175). In a study of 18,189 patients at 9 centers undergoing elective cataract surgery, half of the patients underwent basic testing that included a 12-lead ECG, complete blood count, and electrolyte measurement. There was no difference in outcome between the group that had routine testing versus the group that did not. The no-testing group was eligible to undergo a test in response to a specific complaint or physical finding."

AUC Indications
2008 Appropriateness Criteria for Stress Echoardiography
Indication 28: Low risk surgery AND perioperative evaluation for noncardiac surgery risk assessment AND minor or intermediate clinical risk predictors – Inappropriate (1)

2009 Appropriate Use Criteria for Cardiac Radionuclide Imaging
Indication 40: Risk Assessment: Preoperative Evaluation for Noncardiac Surgery Without Active Cardiac Conditions: Low-Risk Surgery: Preoperative evaluation for noncardiac surgery risk assessment - Inappropriate (1)

2006 Appropriateness Criteria for CCT and CMR
Indication 21 - Risk Assessment: Preoperative Evaluation for Non-Cardiac Surgery: Low-Risk Surgery (Use of CT Angiogram): Intermediate perioperative risk - Inappropriate (1)

Indication 14 - Risk Assessment: Preoperative Evaluation for Non-Cardiac Surgery: Low-Risk Surgery (Use of Vasodilator Perfusion CMR or Dobutamine Stress Function CMR): Intermediate perioperative risk predictor - Inappropriate (2)

2007 ACC/AHA Perioperative Guideline
Class III

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.

2. Noninvasive testing is not useful for patients undergoing low-risk noncardiac surgery. (Level of Evidence: C) **1c.10 Clinical Practice Guideline Citation:** Douglas PS, Khandheria B, Stainback RF, ACCF/ASE/ACEP/AHA/ASNC/SCAI/SCCT/SCMR2008 appropriateness criteria for stress echocardiography. J Am Coll Cardiol. 2008;51:1127–47. Hendel RC, Patel MR, Kramer CM, Poon M. ACCF/ACR/SCCT/SCMR/ASNC/NASCI/SCAI/SIR 2006 appropriateness criteria for cardiac computed tomography and cardiac magnetic resonance imaging. J Am Coll Cardiol 2006;48:1475–97. Hendel RH, Berman DS, Di Carli MF, et al. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 Appropriate Use Criteria for Cardiac Radionuclide Imaging. J Am Coll Cardiol. 2009;53:2201–29. Fleisher LA, Beckman JA, Brown KA, et al. ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery J Am Coll Cardiol 2007;50:e159-e241 **1c.11 National Guideline Clearinghouse or other URL:** http://www.acc.org/qualityandscience/clinical/statements.htm **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** Class III - Conditions for which there is evidence and/or general agreement that the procedure/treatment is not useful/effective and in some cases may be harmful. AND Inappropriate - test is not generally acceptable and is not a reasonable approach for the indication **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** Guidelines - consensus development Appropriate Use Criteria - modified RAND Delphi Method **1c.14 Rationale for using this guideline over others:** Appropriate Use Criteria developed by ACC in partnership with other societies provide more specific patient scenarios and directly address inappropriate use while other guidelines and appropriateness criteria documents do not offer this specificity nor do they generally address overuse/waste.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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-specs** **C☐** **P☐** **M☐** **N☐**
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***):** Number of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients as a part of the preoperative evaluation	

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.

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) .

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
Sample of all SPECT MPI, stress echo, CCTA, or CMR test orders during a calendar year using a single, consecutive 60 day time period

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Patients qualify this measure if:

-an upcoming surgery is the recorded reason for the imaging test AND
-no other reason is recorded for the imaging

AND

Surgery risk is low

The following will be used to determine whether the risk of the surgery recorded is low:

Surgical Risk Categories
• Low-Risk Surgery– cardiac death or MI less than 1% including endoscopic procedures, superficial procedures, cataract surgery, breast surgery.

Surgeries meeting this definition to be included in the measure are listed by
CPT 4 Codes below. While additional surgeries may fit the low risk definition, only those surgeries listed below will be considered in determining inclusion in the numerator for this measure.

Surgery/Integumentary System: Breast
19100 Biopsy of breast
19101 Biopsy of breast
19102 Bx breast percut w/image
19103 Bx breast percut w/device
Surgery/Respiratory System: Accessory Sinuses
31231 Nasal endoscopy, dx
31233 Nasal/sinus endoscopy, dx
31235 Nasal/sinus endoscopy, dx
31237 Nasal/sinus endoscopy, surg
31238 Nasal/sinus endoscopy, surg
31239 Nasal/sinus endoscopy, surg
31240 Nasal/sinus endoscopy, surg
31267 Endoscopy, maxillary sinus
31276 Sinus surgical endoscopy
31299 Sinus surgery procedure
Surgery/Respiratory System: Larynx
31505 Diagnostic laryngoscopy
31510 Laryngoscopy with biopsy
31511 Remove foreign body, larynx
31513 Injection into vocal cord
31515 Laryngoscopy for aspiration
31520 Diagnostic laryngoscopy
31525 Diagnostic laryngoscopy
31526 Diagnostic laryngoscopy
31527 Laryngoscopy for treatment
31528 Laryngoscopy and dilatation
31529 Laryngoscopy and dilatation
31530 Operative laryngoscopy
31531 Operative laryngoscopy
31535 Operative laryngoscopy
31536 Operative laryngoscopy

31540 Operative laryngoscopy	
31541 Operative laryngoscopy	
31560 Operative laryngoscopy	
31561 Operative laryngoscopy	
31570 Laryngoscopy with injection	
31571 Laryngoscopy with injection	
31575 Diagnostic laryngoscopy	
31576 Laryngoscopy with biopsy	
31577 Remove foreign body, larynx	
31578 Removal of larynx lesion	
31579 Diagnostic laryngoscopy	
Surgery/Respiratory System: Trachea and Bronchi	
31615 Visualization of windpipe	
31620 Endobronchial us add-on	
31622 Diagnostic bronchoscopy	
31623 Dx bronchoscope/brush	
31624 Dx bronchoscope/lavage	
31625 Bronchoscopy with biopsy	
31628 Bronchoscopy with biopsy	
31629 Bronchoscopy with biopsy	
31632 Bronchoscopy/lung bx, add'l	
31633 Bronchoscopy/needle bx add'l	
31645 Bronchoscopy, clear airways	
31646 Bronchoscopy,reclear airways	
Surgery/Respiratory System: Lungs and Pleura	
33508 Endoscopic vein harvest	
37500 Endoscopy ligate perf veins	
37501 Vascular endoscopy procedure	
39400 Visualization of chest	
Surgery/Digestive System: Esophagus	
43200 Esophagus endoscopy	
43201 Esoph scope w/submucous inj	
43202 Esophagus endoscopy, biopsy	
43204 Esophagus endoscopy & inject	
43205 Esophagus endoscopy/ligation	
43215 Esophagus endoscopy	
43216 Esophagus endoscopy/lesion	
43217 Esophagus endoscopy	
43219 Esophagus endoscopy	
43220 Esophagus endoscopy,dilation	
43226 Esophagus endoscopy,dilation	
43227 Esophagus endoscopy, repair	
43228 Esophagus endoscopy,ablation	
43231 Esoph endoscopy w/us exam	
43232 Esoph endoscopy w/us fn bx	
43234 Upper GI endoscopy, exam	
43235 Upper GI endoscopy,diagnosis	
43236 Upper GI scope w/submuc inj	
43237 Endoscopic us exam, esoph	
43238 Upper GI endoscopy w/us fn bx	
43239 Upper GI endoscopy, biopsy	
43241 Upper GI endoscopy with tube	
43242 Upper GI endoscopy w/us fn bx	
43243 Upper GI endoscopy & inject.	
43244 Upper GI endoscopy/ligation	
43246 Place gastrostomy tube	
43247 Operative upper GI endoscopy	
43248 Upper GI endoscopy/guidewire	

43249 Esophagus endoscopy,dilation	
43260 Endoscopy, bile duct/pancreas	
43261 Endoscopy, bile duct/pancreas	
43262 Endoscopy, bile duct/pancreas	
43263 Endoscopy, bile duct/pancreas	
43264 Endoscopy, bile duct/pancreas	
43265 Endoscopy, bile duct/pancreas	
43267 Endoscopy, bile duct/pancreas	
43268 Endoscopy, bile duct/pancreas	
43269 Endoscopy, bile duct/pancreas	
43271 Endoscopy, bile duct/pancreas	
43272 Endoscopy, bile duct/pancreas	
Surgery/Digestive System: Intestines (Except Rectum)	
44360 Small bowel endoscopy	
44361 Small bowel endoscopy, biopsy	
44363 Small bowel endoscopy	
44383 Ileoscopy w/stent	
44385 Endoscopy of bowel pouch	
44386 Endoscopy, bowel pouch, biopsy	
44388 Colon endoscopy	
44389 Colonoscopy with biopsy	
44390 Colonoscopy for foreign body	
44391 Colonoscopy for bleeding	
44392 Colonoscopy & polypectomy	
44393 Colonoscopy, lesion removal	
44397 Colonoscopy w stent	
Surgery/Digestive System: Rectum	
45300 Proctosigmoidoscopy	
45303 Proctosigmoidoscopy	
45305 Proctosigmoidoscopy; biopsy	
45307 Proctosigmoidoscopy	
45308 Proctosigmoidoscopy	
45309 Proctosigmoidoscopy	
45315 Proctosigmoidoscopy	
45317 Proctosigmoidoscopy	
45320 Proctosigmoidoscopy	
45321 Proctosigmoidoscopy	
45327 Proctosigmoidoscopy w/stent	
45330 Sigmoidoscopy, diagnostic	
45331 Sigmoidoscopy and biopsy	
45332 Sigmoidoscopy	
45333 Sigmoidoscopy & polypectomy	
45334 Sigmoidoscopy for bleeding	
45335 Sigmoidoscope w/submuc inj	
45337 Sigmoidoscopy, decompression	
45338 Sigmoidoscopy	
45339 Sigmoidoscopy	
45340 Sig w/balloon dilation	
45341 Sigmoidoscopy w/ultrasound	
45342 Sigmoidoscopy w/us guide bx	
45345 Sigmoidoscopy w/stent	
45378 Diagnostic colonoscopy	
45379 Colonoscopy	
45380 Colonoscopy and biopsy	
45381 Colonoscope, submucous inj	
45382 Colonoscopy,control bleeding	
45383 Colonoscopy, lesion removal	
45384 Colonoscopy	

45385 Colonoscopy, lesion removal	
45387 Colonoscopy w/stent	
45391 Colonoscopy w/endoscope us	
45392 Colonoscopy w/endoscopic fnb	
Surgery/Digestive System: Anus	
46600 Diagnostic anoscopy	
46604 Anoscopy and dilation	
46606 Anoscopy and biopsy	
46608 Anoscopy; remove foreign body	
46610 Anoscopy; remove lesion	
46612 Anoscopy; remove lesions	
46614 Anoscopy; control bleeding	
Surgery/Digestive System: Biliary Tract	
47561 Laparo w/cholangio/biopsy	
Surgery/Digestive System: Abdomen, Peritoneum and Omentum	
49322 Laparoscopy, aspiration	
Surgery/Urinary System: Kidney	
50551 Kidney endoscopy	
50553 Kidney endoscopy	
50555 Kidney endoscopy & biopsy	
50557 Kidney endoscopy & treatment	
50559 Renal endoscopy; radiotracer	
50561 Kidney endoscopy & treatment	
Surgery/Urinary System: Ureter	
50951 Endoscopy of ureter	
50953 Endoscopy of ureter	
50955 Ureter endoscopy & biopsy	
50970 Ureter endoscopy	
50972 Ureter endoscopy & catheter	
50974 Ureter endoscopy & biopsy	
50976 Ureter endoscopy & treatment	
50978 Ureter endoscopy & tracer	
50980 Ureter endoscopy & treatment	
Surgery/Urinary System: Bladder	
51715 Endoscopic injection/implant	
52000 Cystoscopy	
52001 Cystoscopy, removal of clots	
52005 Cystoscopy & ureter catheter	
52007 Cystoscopy and biopsy	
52010 Cystoscopy & duct catheter	
52204 Cystoscopy	
52282 Cystoscopy, implant stent	
52327 Cystoscopy, inject material	
52330 Cystoscopy and treatment	
52351 Cystouretro & or pyeloscope	
52352 Cystouretro w/stone remove	
52353 Cystouretero w/lithotripsy	
52354 Cystouretero w/biopsy	
52355 Cystouretero w/excise tumor	
52402 Cystourethro cut ejacul duct	
Surgery/Female Genital System: Cervix Uteri	
57452 Examination of vagina	
57454 Vagina examination & biopsy	
57455 Biopsy of cervix w/scope	
57456 Endocerv curettage w/scope	
57460 Cervix excision	
57461 Conz of cervix w/scope, leep	
Surgery/Female Genital System: Corpus Uteri	

58555 Hysteroscopy, dx, sep proc
58558 Hysteroscopy, biopsy
58559 Hysteroscopy, lysis
58560 Hysteroscopy, resect septum
58562 Hysteroscopy, remove fb
58565 Hysteroscopy, sterilization
Surgery/Female Genital System: Oviduct/Ovary
58670 Laparoscopy, tubal cautery
58671 Laparoscopy, tubal block
Surgery/Eye and Ocular Adnexa: Anterior Segment
66820 Incision, secondary cataract
66821 After cataract laser surgery
66830 Removal of lens lesion
66982 Cataract surgery, complex
66983 Remove cataract, insert lens

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Number of stress SPECT MPI, stress echo, CCTA, and CMR performed

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 18 years old and older - Appropriate Use Criteria only developed for adults

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
Sample of all stress SPECT MPI, stress echo, CCTA, and CMR test orders during a calendar year using a single, consecutive 60 day time period

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
All consecutive stress SPECT MPI, stress echocardiography, CCTA, and CMR orders

Measurement Entity: Imaging laboratory prospectively measured on test requisition forms and/or patient charts

Level of Measurement/Analysis: Imaging laboratory*

*Attribution for inappropriate use is shared between the ordering physician and imaging laboratory. In an ideal world, attribution to the ordering physician or institution, as well as the imaging laboratory, would be reflected in the reporting of these measures. However, there are numerous complexities that prevent assignment of these measures to individual ordering physicians. For example, ordering volumes from individual physicians and institutions are insufficient to make meaningful comparisons to allow such attribution. Thus, these measures will be reported at the level of the imaging laboratory. However, the extent to which the institution housing the imaging laboratory can impact these measures will be dependent upon cooperation of ordering physicians with the imaging laboratory.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):**

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
None

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

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.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
None

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

2a.18-19 Type of Score: rate/proportion
2a.20 Interpretation of Score: better quality = lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
Locate all stress SPECT MPI, stress echocardiography, CCTA, and CMR orders performed during the sampling period.

Record the total number of tests during the sampling period as the denominator.

From this sets of test orders, identify orders containing the criteria listed in the numerator

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
No laboratory is expected to achieve 0% inappropriate orders as there always will be extenuating circumstances not captured by the appropriate use criteria. However, it is expected that significance testing can be applied to differentiate performance between laboratories and for a given laboratory over time.

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)*:
Measures are to be developed based on a sample of a full calendar year based on the following sampling methodology:

Select a starting month:
- o January
- o March
- o May
- o July
- o September
- o November

Begin 60 day data collection period on the 1st on the month for the selected starting month

Determine whether at least 30 stress SPECT and stress echo orders have been placed during the selected time period. If not, select another time period with a minimum number of 30 cases. If no time period includes the minimum number of cases, then the imaging laboratory does not have sufficient volume to report this measure.

Sampling is required for this measure as full year data collection does not alter performance rates for this measure and would place an additional data collection burden on laboratories. It also allows laboratories to share performance with ordering physicians more quickly than would be possible under full year calendar reporting.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
paper medical record/flowsheet, Survey: Provider

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.***):**
Optimization of Patient Selection for Cardiac Imaging

2a.26-28 Data source/data collection instrument reference web page URL or attachment: Attachment
Optimization of Patient Selection for Cardiac Imaging.doc

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment Imaging Efficiency Measures Micro-specifications 121809-633976957308578086.doc

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Facility/Agency

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

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Imaging

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** No direct reliability testing of these measures has been undertaken. However, reliability testing has been performed on individual patient populations as a part of studies related to implementation of appropriate use criteria. In addition, a number of studies have demonstrated remarkable consistency in their findings related to the proportion of inappropriate studies and the relative frequency of common inappropriate indications.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Agreement between 2 nurse abstracters - kappa test

Assignment of patients to appropriate use criteria indication requires the same data elements used to calculate this measure set. In fact, complete assignment of all patients and not just inappropriate patients requires a greater number of data variables for agreement between abstracters. It is anticipated that the more limited data set required for this measure set would yield even higher kappa values.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
Gibbons RJ, Miller TD, Hodge D, Urban L, Araoz PA, Pellikka P, McCully RB: Application of appropriateness criteria to stress single photon emission computed tomography sestamibi studies and stress echocardiograms in an academic medical center. J Am Coll Cardiol. 2008;51:1283–9.

Nurse abstracter agreement kappa = .60 for indications other than repeat testing

McCully RB, Pellikka PA, Hodge DO, Araoz PA, Miller TD, Gibbons RJ. Applicability of appropriateness criteria for stress imaging: similarities and differences between stress echocardiography and single-photon emission computed tomography myocardial perfusion imaging criteria. Circ Cardiovasc Imaging. 2009 May;2(3):213-8.
Nurse abstracter agreement kappa=0.72 for stress echocardiography

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** 6,333 patients who underwent stress SPECT MPI testing as a part of the ACCF/UHC pilot

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
Comparison of test yield as determined by extent of ischemia (moderate to severe ischemia - which would indicate a test finding that could potentially impact treatment) in the overall testing population:

Patients Classified in the Top Inappropriate Indications
Versus
Patients not Classified in the Top Inappropriate Indications (Other)

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**
Test Results (All Sites, All Dates); N= 6333

2c
C☐
P☐
M☐
N☐

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.

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.

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.

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.

Stratified by Appropriate Use Classification (ACC Internal Data Analysis of pilot data from: Hendel RC, Cerqueira M, Douglas PS, et al. A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria. JACC. December 10, 2009.)

Top Inappropriate
(low risk – Asx; routine post PCI; periop eval for low risk surgery)

Moderate Ischemia
0.6% of all patients in pilot N=38

Severe Ischemia
0.1% of all patients in pilot N=7

Moderate or Severe Ischemia
0.7% of all patients in pilot N=45

All other patients in pilot
Moderate Ischemia
6.1% of all patients in pilot N=384

Severe Ischemia
1.0% of all patients in pilot N=62

Moderate or Severe Ischemia
7.1% of all patients in pilot N=446

Note: No perioperative low risk surgery patients had moderate to severe ischemia

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
A lack of data on patient selection criteria makes it impossible to determine whether a patient should have been counted as a part of numerator and thus, these patients also are not counted as a part of the denominator to ensure that these test orders do not dilute the patient population measured.

2d.2 Citations for Evidence:
None

2d.3 Data/sample *(description of data/sample and size)*: None

2d.4 Analytic Method *(type analysis & rationale)*:
None

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
None

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

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
No risk adjustment

2e.3 Testing Results *(risk model performance metrics)*:
No risk adjustment

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: No risk adjustment

2e
C☐
P☐
M☐
N☐
NA☐

2f. Identification of Meaningful Differences in Performance

2f

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 computed separately, denominator exclusion category computed separately).

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.

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: 997 patients enrolled in ACC/UHC SPECT MPI AUC Pilot - 4 sites; patients enrolled in March and April (Internal ACC data analysis of Hendel, RC; Cerqueira, M; Douglas, PS et al. "A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria". J Am Coll Cardiol. Published online December 10, 2009.) **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Data from all sites showed that this indication was among their most frequent inappropriate indications. **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: Site 1 1.1% Site 2 1.2% Site 3 1.1% Site 4 0.0%	C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: None **2g.2 Analytic Method** *(type of analysis & rationale)*: None **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: It is anticipated that prospective data collection of some of these elements will be required using a physician/clinician survey as retrospective location of some data elements may be limited. However, paper records should have some information and may be used to support the survey.	**2g** C☐ P☐ M☐ N☐ NA☐
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☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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:** testing not yet completed **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*):	**3a** C☐ P☐ M☐ N☐

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 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.

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

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.

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.

Not currently reported publicly. However, appropriate use measures are being integrated into laboratory accreditation standards and as a result will be required for health insurance reimbursement.

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***):**
Measures of appropriate use for cardiac imaging will be used as a part of an ACC National Quality Improvement Innovation Community called IMAGING in FOCUS (Formation of Optimal Cardiovascular IMAGING Utilization Strategies) to be launched in January 2010. www.acc.org/auc.

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)***:** Limited use for QI in Hendel, RC; Cerqueira, M; Douglas, PS et al. "A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria". J Am Coll Cardiol. Published online December 10, 2009.

3a.5 **Methods** *(e.g., focus group, survey, QI project)***:**
QI Project. Limited use for QI in Hendel, RC; Cerqueira, M; Douglas, PS et al. "A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria". J Am Coll Cardiol. Published online December 10, 2009.

3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:**
The single site that had a substantial change in the rate of inappropriate test use initiated an internal analysis of appropriateness data and held group meetings and discussions to educate physicians on compliance with the AUC. The management team at this practice was highly motivated to improve performance and made education of physicians a priority; their overall inappropriate testing rate was the highest of all the sites at baseline and decreased from 22.0% to 13.3% at the end of study (p = 0.04).

3b/3c. Relation to other NQF-endorsed measures

3b.1 **NQF # and Title of similar or related measures:**

(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?**

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:**

5.1 **Competing Measures 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☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **for** *Usability*?

3

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

3
C☐
P☐
M☐
N☐

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).

Comment [k26]: 5. Demonstration that the measure is superior to competing measures – new submissions and/or endorsed measures (e.g., is a more valid or efficient way to measure).

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?** data generated as byproduct of care processes during delivery, Survey, coding/abstraction performed by someone other than person obtaining original information,	**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*) No 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.** Some data elements should already be a part of the electronic record (PCI history, scheduled surgery). In addition, e-ordering for diagnostic testing has been proposed for meaningful use, encouraging integration of these types of data elements. In addition, ACC is developing clinical decision support tools that can be embedded in electronic health records to capture the necessary information.	**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?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
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.** There is not an comprehensive list of surgeries that are low risk. Both a definition and example list of surgeries is provided, but clinical judgment also is needed.	**4d** C☐ P☐ M☐ N☐
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:** Hendel, RC; Cerqueira, M; Douglas, PS et al. "A Multicenter Assessment of the Use of Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging With Appropriateness Criteria". J Am Coll Cardiol. Published online December 10, 2009. This study demonstrated the feasibility of data collection as well as the most frequent inappropriate indications. This allowed ACC to narrow the number of indications measured for this measure set along with the associated data elements. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** No data available, although the data elements required should be collected as a part of patient intake for testing. 4e.3 **Evidence for costs:** None available	**4e** C☐ P☐ M☐ N☐

Comment [KP27]: 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 [KP28]: 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 [KP29]: 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.

Comment [KP30]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP31]: 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).

4e.4 **Business case documentation:** Given the expense of cardiovascular imaging, potential reductions in inappropriate test ordering should yield significant cost savings to the healthcare system.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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 College of Cardiology Foundation | 2400 N St. NW | Washington | District Of Columbia | 20037

Co.2 **Point of Contact**
Joseph | Allen, MA | jallen@acc.org | 202-375-6463

Measure Developer If different from Measure Steward
Co.3 **Organization**
American College of Cardiology Foundation | 2400 N St. NW | Washington | District Of Columbia | 20037

Co.4 **Point of Contact**
Joseph | Allen, MA | jallen@acc.org | 202-375-6463

Co.5 **Submitter If different from Measure Steward POC**
Joseph | Allen, MA | jallen@acc.org | 202-375-6463- |American College of Cardiology Foundation

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.**
All individuals are volunteer members representing American College of Cardiology Foundation:
Pamela Douglas, MD, MACC
Joseph Allen, MA
Robert Hendel, MD, FACC
Joseph Cacchione, MD, FACC
Manuel Cerqueira, MD, FACC
Joseph Drozda, MD, FACC
Michael Picard, MD, FACC
Martha Radford, MD, FACC
Leslee Shaw, PhD, FACC
Allen Taylor, MD, FACC

Group developed list of proposed measures, specifications, definitions, justification, etc.

Ad.2 **If adapted, provide name of original measure:**

Ad.3-5 If adapted, provide original specifications URL or attachment
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:** 2009 **Ad.7 Month and Year of most recent revision:** 2009-12 **Ad.8 What is your frequency for review/update of this measure?** Annual **Ad.9 When is the next scheduled review/update for this measure?** 2010-12
Ad.10 Copyright statement/disclaimers: Copyright 2009. American College of Cardiology Foundation
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 05/14/2010

American College of Cardiology Foundation
Optimization of Patient Selection for Cardiac Stress Imaging
Proposed Measurement Micro-Specifications
Version: Executive Committee Review

All Measures

Data collection period:

Measures are to be developed based on a sample of a full calendar year based on the following sampling methodology:

- Select a starting month:
  - January
  - March
  - May
  - July
  - September
  - November
- Begin 60 day data collection period on the 1st on the month for the selected starting month
- Determine whether at least 30 stress SPECT and stress echo orders have been placed during the selected time period. If not, select another time period with a minimum number of 30 cases. If no time period includes the minimum number of cases, then the imaging laboratory does not have sufficient volume to report this measure.

Measure #1: Adequacy of data to assess appropriate use of cardiac stress imaging

The following definitions should be used in documenting the data to assess appropriate use of cardiac stress imaging:

Measure #1, Element #1: Symptom Status

Definition: Ischemic Equivalent: Chest Pain Syndrome, Anginal Equivalent, or Ischemic ECG Abnormalities: Any constellation of clinical findings that the physician feels is consistent with obstructive CAD. Examples of such findings include, but are not exclusive to, chest pain, chest tightness, burning, shoulder pain, palpitations, jaw pain, and new ECG abnormalities suggestive of ischemic heart disease. Non-chest pain symptoms, such as dyspnea or worsening effort tolerance, that are felt to be consistent with CAD may also be considered to be an anginal equivalent.

Data variables:

- Asymptomatic – not meeting definition of ischemic equivalent
- Ischemic Equivalent – meeting definition of ischemic equivalent

Measure #1, Element #2

- Known CAD, including
  - prior MI
  - prior ACS
  - prior CABG
  - prior PCI or
  - CHD on prior diagnostic test
    - Exercise stress treadmill
    - Non-invasive imaging
      - Stress echo
      - Stress SPECT MPI
      - CT Angiography
      - Calcium Scoring
    - Invasive imaging (cardiac catheterization)

Measure #1, Element #3a: Documentation of prior PCI at time of test requisition

If prior PCI, time since most recent PCI

Record the date (month, day, year) of the most recent PCI. If day, not known month and year is acceptable.

Measure #1, Element #3b: If perioperative evaluation, scheduled surgery

Patient is being seen for preoperative evaluation if:

- an upcoming surgery is the recorded reason for the imaging test AND
- no other reason is recorded for the imaging

The following information should be recorded:
1. name of the scheduled surgery
2. urgency of the scheduled surgery

The following categories will be used in Measure #4 to determine the risk of the surgery recorded for this element.

Surgical Risk Categories
• High-Risk Surgery– cardiac death or MI greater than 5%
Emergent major operations (particularly in the elderly), aortic and peripheral vascular surgery, prolonged surgical procedures associated with large fluid shifts and/or blood loss.

• Intermediate-Risk Surgery– cardiac death or MI equal to 1% to 5%
Carotid endarterectomy, head and neck surgery, surgery of the chest or abdomen, orthopedic surgery, prostate surgery.

• Low-Risk Surgery– cardiac death or MI less than 1%

Endoscopic procedures, superficial procedures, cataract surgery, breast surgery.

Measure #1, Element #3c: If initial risk assessment in asymptomatic patient,

A patient does **NOT** have:

- Known CAD, including
  - prior MI
  - prior ACS
  - prior CABG
  - prior PCI or
  - CHD on prior diagnostic test
    - Exercise stress treadmill
    - Non-invasive imaging
      - Stress echo
      - Stress SPECT MPI
      - CT Angiography
      - Calcium Scoring
    - Invasive imaging (cardiac catheterization)
- Ischemic equivalent
- Undergone prior CHD assessment by one the following methods no matter the test result:
  - Exercise stress treadmill
  - Non-invasive imaging
    - Stress echo
    - Stress SPECT MPI
    - CT Angiography
    - Calcium Scoring
  - Invasive imaging (cardiac catheterization)
- Preoperative evaluation

Asytptomatic patients should have recorded a clinician estimate of coronary heart disease risk category (ATP III criteria) based on the following methodology:

Clinical Estimate of Coronary Heart Disease Risk Category (ATP III criteria)
In making the clinical estimate of coronary heart disease (CHD) risk, clinicians should consider the maximum number of available patient factors used to estimate Framingham (ATP III criteria), typically age, gender, diabetes, smoking status, and use of blood pressure medication, and integrate age appropriate estimates for missing elements, such as LDL or standard blood pressure. While calculation of the estimate does not require submission of the actual clinical data elements other than the clinician estimate of CHD risk, clinicians are attesting to the accuracy of the estimate by submitting it. An audit of clinician estimates should be completed on a subset of clinicians to verify their estimates as being accurate based on the data that was available.

Absolute CHD risk is defined as the probability of developing CHD, including myocardial infarction or CHD death over a given time period. The ATP III report

specifies absolute risk for CHD over the next 10 years. CHD risk refers to 10-year risk for any hard cardiac event (mortality and myocardial infarction).

- **CHD Risk—Low**
  Defined by the age-specific risk level that is below average. In general, low risk will correlate with a 10-year absolute CHD risk less than 10%.
- **CHD Risk—Moderate**
  Defined by the age-specific risk level that is average or above average. In general, moderate risk will correlate with a 10-year absolute CHD risk between 10% and 20%.
- **CHD Risk—High**
  Defined as the presence of diabetes mellitus in a patient 40 years of age or older, peripheral arterial disease or other coronary risk equivalents, or a 10-year absolute CHD risk of greater than 20%.

National Heart, Lung, and Blood Institute report on "Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III)" (ATP III).

Measure #2: Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients

- For all orders in asymptomatic patients, determine orders for initial diagnosis and risk assessement. In doing so, patients with known CHD, prior PCI or prior CABG and the following exclusions are not included.

Patients qualify for this measure if:

- Asymptomatic AND
- Low CHD risk based on physician estimate AND

NOT any of the following:

- Known CAD, including
    - prior MI
    - prior ACS
    - prior CABG
    - prior PCI or
    - CHD on prior diagnostic test
        - Exercise stress treadmill
        - Non-invasive imaging
            - Stress echo
            - Stress SPECT MPI
            - CT Angiography
            - Calcium Scoring
        - Invasive imaging (cardiac catheterization)
- Ischemic equivalent
- Undergone prior CHD assessment by one the following methods no matter the test result:
    - Exercise stress treadmill
    - Non-invasive imaging
        - Stress echo
        - Stress SPECT MPI
        - CT Angiography
        - Calcium Scoring
    - Invasive imaging (cardiac catheterization)
- Patients for whom preoperative testing is the primary reason for imaging

Measure #3: Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI)

- For all orders post PCI, determine all orders that were in asymptomatic patients
- Among asymptomatic patients, subtract date of most recent PCI from date of test requisition and categorize into orders less than two years since most recent PCI and orders placed greater than or equal to two years since most recent PCI

Patients qualify for this measure if:

- Asymptomatic AND
- Less than two years since most recent PCI

Measure #4: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Patients qualify this measure if:

- an upcoming surgery is the recorded reason for the imaging test AND
- no other reason is recorded for the imaging

AND

Surgery risk is low

The following categories will be used to determine whether the risk of the surgery recorded is low:

Surgical Risk Categories
• Low-Risk Surgery– cardiac death or MI less than 1%
Endoscopic procedures, superficial procedures, cataract surgery, breast surgery.

Examples of Low Risk Surgeries
Cataract laser surgery
Bx breast percut w/device
Clos Large Bowel Biopsy
Closed Bronchial Biopsy
Colonoscopy
Colonoscopy
Colonoscopy
Colonoscopy and biopsy
Colonoscopy and biopsy
Colonoscopy, lesion removal
Colonoscopy, lesion removal
Cystoscopy
Cystoscopy
Cystoscopy Nec
Diagnostic colonoscopy
Diagnostic colonoscopy
Diagnostic laryngoscopy
Egd With Closed Biopsy
Endo Polpectomy Lrge Int
Esophagus endoscopy,dilation
Intraoper Cholangiogram
Nasal endoscopy, dx
Percu Endosc Gastrostomy (Begin 1989)
Sm Bowel Endoscopy Nec
Upper GI endoscopy, biopsy
Upper GI endoscopy, biopsy

Upper gi endoscopy,diagnosis
Upper gi endoscopy,diagnosis

Surgeries classified as low risk should NOT meet the following definitions.

• Intermediate-Risk Surgery– cardiac death or MI equal to 1% to 5%
Carotid endarterectomy, head and neck surgery, surgery of the chest or abdomen, orthopedic surgery, prostate surgery.

• High-Risk Surgery– cardiac death or MI greater than 5%
Emergent major operations (particularly in the elderly), aortic and peripheral vascular surgery, prolonged surgical procedures associated with large fluid shifts and/or blood loss.

American College of Cardiology Foundation
Optimization of Patient Selection for Cardiac Stress Imaging
Data Collection Form

Test Date: ___ / ___ /___

Symptom Status

☐ Asymptomatic
☐ Ischemic Equivalent
☐ Not known/not available

Presence of Prior Known CHD

☐ Yes
☐ No
☐ Not known/not available

Risk Category OR Procedure Documentation

☐ **Prior Percutaneous Coronary Intervention (PCI)**
Date of most recent PCI: ___ / ___ /___ ☐ Date not available

☐ **Preoperative evaluation**
Name of scheduled surgery:_____
Urgency of scheduled surgery
☐ Urgent
☐ Elective
☐ Not recorded/not available

☐ **Asymptomatic patient**
Estimated CHD Risk
☐ Low CHD risk
☐ Intermediate CHD risk
☐ High CHD risk
☐ Not recorded/not available

Prior CHD assessment by one of the following methods no matter the test result:
☐ Exercise stress treadmill
☐ Non-invasive imaging
- Stress echo
- Stress SPECT MPI
- CT Angiography
- Calcium Scoring

☐ Invasive imaging (cardiac catheterization)
☐ No record of prior CHD assessment by one of the above methods

☐ **None of the above/not recorded**

Measure #/Title/Steward

#IEP-014-10/ Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients /ACC

Description

Percentage of stress SPECT MPI and stress echo performed in low risk surgery patients for preoperative evaluation.

Initial In-person Vote

THE STEERING COMMITTEE VOTED ON THE MEASURE VIA AN ONLINE SURVEY – THE STEERING COMMITTEE WILL VOTE ON THE MEASURE AFTER THE MEASURE DEVELOPER HAS RESPONDED TO THE CONDITIONS FOR RECOMMENDATION.

Steering Committee Questions/Conditions for Measure Developer:	Abbreviated Response from Measure Developer:
• Expand sampling period from 60 days (2 months) to a one year (12 months) sampling timeframe.	• ACC does not support the expansion of sample frame; amenable to providing instructions to "roll" sample annually ▪ Expanding the sampling frame from 2 months to 12 months was tested and deemed unnecessary and a hindrance to improving quality. ▪ In general the rates do not change; ▪ Expanding to 12 months delays feedback loops that allow for expedient changes or action regarding ordering patterns, thus hindering improvement; • The rolling sampling period would instruct entities to "roll" or change the selected 2 month sample frame annually. For example, if sample frame is January – February the first year, c a different 2-month period should be the selected sample frame the following year (e.g., March – April).
• Remove "patients without sufficient patient selection criteria recorded" from the denominator exclusions.	• ACC is willing to meet condition, but noted the change may inflate the denominator and have potential unintended consequences
• Add stress MRI and CTA.	• ACC is willing to add CTA and MRI to the measure. ▪ Note: ACC does not anticipate a large number of cases to be documented for these imaging modalities in this patient population.
• Potentially eligible for time-limited endorsement, would need to affirm a 12 month testing strategy and harmonize the low-risk procedure lists between the ACC and CMS measures	• ACC is willing to align their list of low risk surgery patients with the CMS list of a similarly proposed measure. Furthermore, ACC has already been in collaboration with CMS in how to specifically move forward this harmonization process

• Provide an overview/summary of the low-risk list.	• ACC wants to maintain these general categories to allow clinicians to document other low risk surgeries that cannot be included in the example list.
• Do not add stress MRI and CTA to the measure, but provide a detailed rationale for why they were excluded from the measure.	• ACC is willing to add CTA and MRI to the measure. • Note: ACC does not anticipate a large number of cases to be documented for these imaging modalities in this patient population.
• Consider changing the title of the measure, removing potentially negative connotations.	• Does not support. ACC elected not to meet this condition, rational – not warranted

Detailed Response from Measure Developer:

- ACC is willing to align our example list of procedures with the CMS proposed measure. However, ACC also will maintain the broad definition for included surgeries as being less than 1% mortality (based on the guideline definitions) and maintain the general category list of endoscopic procedures, superficial procedures, cataract surgery, and breast surgery. There is no way to be exhaustive in the list. ACC wants to maintain these general categories to allow clinicians to document other low risk surgeries that cannot be included in the example list.
- ACC is willing to add CTA and MRI to the measure. However, ACC does not anticipate a large number of cases to be documented for these imaging modalities in this patient population.
- ACC is willing to remove the denominator exclusion criteria, "patients without sufficient patient selection criteria recorded." However, this change will inflate the denominator of the measure for imaging laboratories that are unable to locate the information necessary to determine all components of the numerator. As such, the removal could create an incentive not to obtain enough data to clearly indicate a patient qualifies for this measure.
- ACC does not think a change of the title to be less negative is warranted. The College revised its initial draft measure title of "Inappropriate cardiac stress imaging" to the current title in an attempt to make the title more neutral. The measure is designed to examine imaging that is not reasonable. Development of a more positive title would not reflect the focus of this measure which is overuse.
- ACC is willing to consider a rolling sampling period that would change annually. The rolling sampling period would capture any changes in ordering patterns received by an imaging laboratory that occur during the course of a year. The rolling sampling period would state that practices that collected during a particular 60 period (e.g. January – early March) the first year, conduct a different 60 day period the following year (early March – April). Addresses a potential concern about practices choosing a more "favorable" sampling period to report. The rolling sample period would ensure that performance was being maintained in the same way during different times of the year by measuring a different time period each measure year. However, our testing data have shown that the measure stability does not change if the data collection period is extended from 2 to 12 months. The rolling sampling period would state that practices that collected during a particular 60 period (e.g. January – early March) the first year, conduct a different 60 day period the following year (early March – April). This measure is based on clinical data collection and thus, ACC does not support extending the data collection period and creating additional collection burden without a measurable impact on the results. In addition, this measure is collected by the imaging laboratory and would require sharing its results with ordering physicians to impact a change. The 2 month sampling period encourages rapid sharing

of the data and continuous quality improvement. A longer sampling period would discourage this improvement by putting more time between the data collection and results reporting. Since orders come to the imaging laboratory from multiple referring providers who won't know the sampling period, the ability of any referring physician to change behavior during the sample period compared to the rest of the year is minimized. ACC does not support a data collection requirement that requires continuous 12 month data collection and supports only a sampling methodology for collection.