NATIONAL QUALITY FORUM

TO: Cardiovascular Endorsement Maintenance Steering Committee

FROM: Reva Winkler, MD, MPH; Ashley Morsell, MPH; Kathryn Streeter, MS

RE: Follow-up from Phase I; measure deferred

DA: April 28, 2011

After the February 15-16, 2011, meeting, NQF staff contacted the measure developers for follow-up on issues raised by the Steering Committee. The responses from the developers are summarized in the memo from March 28, 2011.

DEFERRED MEASURE

The Committee deferred final evaluation of measure 0073 IVD: Blood pressure measurement pending response from the measure developer.

0073 IVD: Blood pressure management
Description: The percentage of patients 18 years of age and older who were discharged alive with acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) from January 1–November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had BP reported as under control <140/90. Numerator Statement: The numerator is the number of patients in the denominator whose most recent blood pressure is adequately controlled during the measurement year. For a patient's BP to be controlled, both the systolic and the diastolic BP must meet the desired threshold of <140/90 mm Hg. Denominator Statement: Patients 18 years or older as of December 31 of the measurement year who were discharged alive for AMI, CABG or PCI on or between January 1 and November 1 of the year prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year. Exclusions: All patients with ESRD, who are pregnant or who had an admission to a non-acute inpatient setting during the measurement year. Adjustment/Stratification: No risk adjustment necessary NA Level of Analysis: Clinicians: Individual; Clinicians: Group Type of Measure: Outcome Data Source: Paper medical record/flow-sheet; Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record NA Measure Steward: National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, DC 20005
Does the Measure Meet Criteria for Endorsement: Deferred (Based on measure as submitted: Y-8, N-12) Rationale: The Steering Committee deferred final evaluation of this measure citing several concerns: • Remove 140/80—lack of evidence for this target (140/90 only is in retooled EHR specifications) • Exclusions for elderly patients • Exclusions for patient's intolerance of lower BP.
1. Importance to Measure and Report: Y-21; N-0 *(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)* Rationale: Extensive evidence of benefit for achieving blood pressure control in patients with ischemic vascular disease.
2. Scientific Acceptability of Measure Properties: C-0; P-16; M-4; N-0 *(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)* Rationale: • What is the evidence for BP target of <140/80? • Evidence base for elderly patients and the benefit of taking their systolic to less than 140 is lacking.

0073 IVD: Blood pressure management
• Home blood pressure measurements are not being accepted, and their absence is considered to be a real problem. • Measure submission included evidence supporting the importance of excluding end stage renal disease patients from this measure; however, they are not listed as an exclusion in the measure specifications.
3. Usability: C-4; P-15; M-1; N-0 *(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)* Rationale: • Measuring blood pressure only once in the year after a procedure is thought to be not very meaningful in patients with fluctuating pressures • Gap demonstrated with the 10th percentile being 28 and the 90th being 62. • Step-wise process for identifying patients in medical records; this submission is a hybrid specification and a physician-level measure.
4. Feasibility: C-5; P-13; M-2; N-0 *(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)* Rationale: • As a hybrid, the measure creates a burden for public reporting purposes because only 50 percent of physicians' offices use electronic health records.

The developer responded to the concerns identified by the Committee:

0073 IVD: Blood pressure management (NCQA)
Issue raised by Steering Committee: What is the evidence for the <140/80 target? Developer response: • At this time, NCQA would like to withdraw the <140/80 threshold, and only continue on with <140/90, with the intention of reviewing/revising when JNC 8 is released in January 2012. • The 140/80 measure was applicable only to patients with diabetes as a primary diagnosis and to patients with established CV disease. This was a change in a measure regarding optimal control for blood pressure (BP) in diabetic patients that was based on prior guidelines (JNC-7 and others) that recommended a more aggressive BP target (130/80) for patients with primary CV disease or CV equivalents such as diabetes. • Since the joint NCQA-PCPI diabetes advisory group was dependent on updates in evidence-based guidelines (rather than performing independent review of primary evidence) prior to implementing measure changes, the 140/80 level (which replaced the prior optimal BP control measure for diabetes and CV of 130/80) was based primarily on the recent guideline released by the Veteran's Health Administration for BP control in patients with CV disease or equivalents (diabetes). • While NCQA hoped to incorporate the JNC-8 and other new guidelines that took into account new evidence in BP control in diabetes or CV disease, the NCQA-PCPI group felt that given the measure's active status in reporting, leaving the measure at 130/80 until other existing guidelines (which range from 130/80 and include 140/85 and other levels) were modified based on new evidence was not optimal. The group agreed to use the VAH guideline as the primary basis in the meantime.
Issue raised by Steering Committee: No upper age limit—concerns about appropriate target levels of blood pressure (BP) for the elderly; evidence indicates that elderly should not have systolic lower than <140 Developer response: • There is no simple rule to establish an upper age limit for most measures. In the HEDIS Controlling High Blood Pressure health plan measure for patients with hypertension, the NCQA advisory groups and the CPM set the upper age limit at 85 given that by that age-and above that age, there is a substantial proportion of individuals for whom controlling the BP at 140/90 may not be appropriate. We agree measures should be harmonized in terms of upper age limits, but this should be done only after careful evaluation by multiple measure owners including

NCQA, PCPI/ACC, and MNCM in concert with NQF.

- The NCQA CV measurement advisory panel has discussed the need for a separate threshold for the elderly population; however, they recommended we wait for the JNC-8 guidelines for further guidance in developing a new measure.

Issue raised by Steering Committee: Home BP values not accepted—evidence is powerful; a weakness of the measure

Developer response:

- NCQA's advisory groups in multiple areas have considered this issue on multiple occasions. There is a significant problem with respect to standardization and how to correlate the home BP levels to those obtained in RCT's using office-based BP levels.
- There are also currently no CPT codes or commonly used other codes that capture home BP values reported by patients, nor any standardized way of recording the results in paper or in electronic medical records.
- NCQA believes our advisory groups would be open again to consideration of including home BP monitoring but ONLY after full testing of the feasibility and reliability of including home BP monitoring and the home BP measure would be dated and assessed as the "most recent" BP.

Issue raised by Steering Committee: No risk adjustment—what about patients that should not have BP lowered to this degree or are on multiple medications or at risk for hypotension?

Developer response:

- NCQA advisory groups, and specifically those in CV disease, have considered the issue of risk adjustment of measures. In prior attempts to develop a risk adjustment, it has been difficult to separate which risk factors prevent clinicians from achieving a set level of BP control, and more directly, how those risks are recorded in paper charts. In terms of hypertension, we have found that this problem is not regularly recorded or coded, or found guidelines to suggest how frequent or proximate the problem needs to be to exclude the patient
- We fully support development and testing of risk adjustment for use of measures with advanced electronic clinical data systems but do not as yet have data from those settings.

Issue raised by Steering Committee: Conflicting information on exclusion for ESRD in submission

Developer response: Corrected submission form: added exclusions for ESRD, pregnancy, and admission to non-acute inpatient facility.

Issue raised by Steering Committee: Clarify the 1) level of measurement ; 2) data source(s) for the different levels of measurement, especially health plan; and 3) differences in specifications for different levels of measurement.

Developer response:

1) Level of Measurement: This metric is considered an indicator under the composite measure of Comprehensive Ischemic Vascular Disease, which is reported at the physician level only.
2) Data Source(s): Satisfactory data sources include electronic health records, medical records and claims data..
3) Differences in Specifications Attributed to Level of Measurement: Since this metric is reported at the physician level only, there are no observable differences.

Issue raised by Steering Committee: Disparities

Developer response: NCQA has participated with IOM and others in attempting to include information on disparities in measure data collection. However, at the present time, this data, at all levels (claims data, paper chart review, and electronic records), is not coded in a standard manner, and is incompletely captured. There are no consistent standards for what entity (physician, group, plan, employer) should capture and report this data. While "requiring" reporting of the data could push the field forward, it has been our position that doing so would create substantial burden with inability to use the data because of its inconsistency. At the present time, we agree with the IOM report that disparities are best considered by the use of zip code analysis which has limited applicability in most reporting situations. At the health plan level, for HEDIS health plan data collection, NCQA does have extensive data related to our use of stratification by insurance status (Medicare, Medicaid and private-commercial) and would strongly recommend this process where the data base supporting the measurement includes this information. However, we believe that the measure specifications should NOT require this since the measure is still useful where the data needed to determine disparities cannot be ascertained from the data available.

Issue raised by Steering Committee: The Committee acknowledges that there are too many conflicting guidelines for BP targets and recommends that NQF select a single national guideline to align all measures. The Committee

suggests aligning to JNC8 (due January 2012). Would NCQA agree to align measures to JNC8 going forward?
Developer response:

- NCQA's advisory groups are tasked with thoroughly evaluating all evidence-based guidelines, establishing the measure whenever possible based on their assessment of the "best in class" guidelines. For that reason, we ask our advisory groups to avoid primary evidence review themselves.
- In the past, JNC recommendations have received very careful attention, and like guidelines from the USPSTF, are often considered by the review panels as "best in class". NCQA tried to delay the review of the measures until the release of the JNC8 guideline; however, NQF re-endorsement schedule and internal deadlines deterred this effort. We would be very open to reconsideration when the JNC8 guidelines are released.

Issue raised by Steering Committee: Harmonization with MNCM 0076 Optimal vascular care—IVD specifications; age inclusions; align BP target at <140/90
Developer response: NCQA has worked with MNCM on several initiatives and is open to harmonizing this measure with their measure. The process for harmonization for most specifications must be carried out in a careful and deliberate manner since changes in specifications can affect both trendability of results as well as affect completeness, accuracy and reliability of data collection.

Issue raised by Steering Committee: Conditions: Would consider revised measure if BP <140/80 is removed and there is some consideration for the elderly. Recognize need to review/revise when JNC8 is released in January 2012.
Developer response: At this time, NCQA would like to withdraw the <140/80 threshold, and only continue on with <140/90, with the intention of reviewing/revising the threshold and the age criteria when JNC 8 is released in January 2012.

Developer response: Modifications have been made to the following Measure Submission Form sections:
De.2: slight word editing
De.3: measure part of comprehensive set
2a.1: removed <140/80 threshold, added medical record specifications, corrected table numbers
2a3: corrected text errors
2a.4: removed codes from this section
2a.5: checked both genders
2a.7: modified denominator time window
2a.8: added in all codes
2a.9: added in exclusions description
2a.10: added in exclusions details
2a.24: unchecked survey as a data source
1c.9: removed reference to lower BP threshold
2b.1-2b.3: added in information on: Beta-binomial reliability data, inter-rater reliability of obtaining BP from chart and reliability of determining the representative BP
2h.2: added disparities language
3a.2: removed plan reference, added HSRP
3a.3: removed references to QC & ABHP
3b.2: added harmonization language

Issue raised by Steering Committee:

1. The upper age limits of the three BP control measures from NCQA are noted :
    a. 0073 IVD: Blood pressure management age 18 and above
    b. 0018 Controlling high blood pressure ages 18-85 years
    c. 0061 Diabetes: BP control (<140/90) ages 18-75 years

   Why are the upper age limits different? The Committee has concerns about appropriate BP targets in the elderly. What is the rationale for the different upper age limits for these measures?
2. The Committee questioned the value of having all three measures—doesn't 0018 capture the important population that has hypertension and IVD or diabetes? What is the additive value (compared to the burden of measurement) of measuring BP control in patients who have IVD but not HTN or diabetes without HTN? Do you have any data that describe the size of each of these subpopulations (IVD and HTN vs IVD without HTN) and the BP control performance in each group?

Developer response: Interesting issues—there is no certainty in using an upper cut off level—we are open to suggestions or consensus going forward but the diabetes cut off was set to the same level as the other diabetes measures (inc A1c and cholesterol control) because that was the recommendation of DPRP for a cut for all of the measures. If you used a different cut point for BP in diabetes you would have to use a different sample for that measure so it is largely a measure burden (with paper charts at least) issue. We have 3 BP measures because each of them are used in a measurement program linked with other measures with the exception of the BP control in hypertension. Also recall that at one point (and who knows what JNC 8 will do) there were different recommendations for BP control in pts with IVD or diabetes than with simple hypertension. So not sure there is an easy answer-changing especially the diabetes cut off now would cause problems in virtually all the programs using them-so we would probably continue to use regardless.

ACTION ITEM

After reviewing the developer's response, what is the final evaluation of whether measure 0073 IVD: Blood pressure management meets NQF's endorsement criteria?

NATIONAL QUALITY FORUM

TO: Cardiovascular Endorsement Maintenance Steering Committee

FROM: Reva Winkler, MD, MPH; Kathryn Streeter, MS

RE: Proposed NQF policy on "inactive measures"

DA: May 2, 2011

During recent meetings, the Steering Committee recommended that three measures be retired because current performance is very high and there seems to be little opportunity for improved performance. These measures have been successful in driving improvement in performance, but concerns have been raised about possible decline in performance if measurement is discontinued. For measures that otherwise meet all NQF endorsement criteria, NQF is proposing a category of "inactive endorsement" so that performance can be monitored in the future if necessary to ensure that performance does not decline. This status would apply only to highly credible, reliable, and valid measures that have high levels of performance due to quality improvement actions (often facilitated or motivated through public reporting and pay-for-performance programs) rather than to problems with the measure specifications. The key issue is the opportunity cost associated with measuring processes at high levels of performance—rather than focusing on areas where there is really a gap in care. NQF does not grant inactive status to measures that are really not needed because they are too far from the desired outcome.

The proposed policy was open for public comment in April 2011, and NQF's Board of Directors will consider this policy at its meeting on May 12, 2011.

ACTION ITEM: In anticipation of the adoption of this policy, the Steering Committee should determine whether the measures should be recommended for inactive endorsement.

NOTE: Within the past week, the Centers for Medicare & Medicaid Services (CMS) issued a final rule for the Hospital Value-Based Purchasing Program, using measures from the hospital quality reporting programs. The final rule discusses evaluation of "topped out" measures for acute myocardial infarction (AMI) and heart failure. CMS has identified the following measures as "topped out" and is proposing to retire these measures in 2014:

- AMI–1 Aspirin at arrival
- AMI–5 Beta locker at discharge
- AMI–3ACEI or ARB at discharge

The CMS evaluation criteria for "topped out" measures are detailed in Appendix A.

CONSIDERATIONS FOR INACTIVE ENDORSEMENT STATUS

The data provided in measure submissions are frequently limited. In determining whether there is further opportunity for improvement, the Steering Committee should review data on representation, variation, and disparities:

- What is the representativeness of the data, i.e., are they national data from a majority of hospitals or are the data from a single state or payer group?
- What is the range in performance, particularly in the lowest decile or quartile?
- What is the performance among possible disparities population(s)?
- Do the measure performance data indicate high levels of performance consistent with other evidence (epidemiologic or research)?
- What is the size of the population at risk, effectiveness of an intervention, and consequences of a quality problem (e.g., even modest variation would be sufficient justification for some highly effective, potentially life-saving treatments)?

Other considerations include:

- Is this a measure with strong, direct evidence of a link to a desired health outcome? Generally measures more distal to the desired outcome with only indirect evidence would not qualify, e.g., assessment of blood pressure (BP) measurement rather than the BP value.
- Measures with a focus more distal to a desired outcome are not needed if there is a measure with a focus more proximal to the desired outcome (e.g., venous thromboembolism (VTE) prophylaxis ordered versus VTE prophylaxis administered).
- Is the measure needed if outcomes (i.e., mortality, readmission) of care are being measured?

MEASURES FOR POSSIBLE INACTIVE ENDORSEMENT STATUS

The Steering Committee has recommended three measures that may be candidates for inactive endorsement status. The Committee voted that the following measures did not meet the Importance to Measure and Report criteria because of high performance and lack of opportunity for improvement:

- 160 Beta blocker prescribed at discharge [for AMI] (CMS)
- 142 Aspirin prescribed at discharge for AMI (CMS)
- 135 Heart failure: Evaluation of left ventricular systolic dysfunction (CMS)

Data on Opportunity for Improvement

160 Beta blocker prescribed at discharge

National performance rates: 1Q10: 98.2%; 4Q09: 98.3%; 3Q09: 98.2%; 2Q09: 98.1%

Representative: 1Q10: 105,436 AMI patients, 3,111 hospitals

Range/variation: additional data on percentile distribution is attached

Disparities: see Centers for Medicare & Medicaid Services (CMS) disparities spreadsheets

142 Aspirin prescribed at discharge for AMI

National performance rates: 1Q10: 98.5%; 4Q09: 98.5%; 3Q09: 98.4%; 2Q09: 98.3%
Representative: 1Q10: 107,852 AMI patients, 3,096 hospitals
Range/variation: additional data on percentile distribution is attached
Disparities: see CMS disparities spreadsheets

135 Evaluation of left ventricular systolic dysfunction

National performance rates: 2Q09: 97.2%; 3Q09: 97.3%; 4Q09: 97.6%; 1Q10: 97.8%
Representative: 1Q10: 212,985 HF patients, 4,087 hospitals
Range/variation: additional data on percentile distribution is attached
Disparities: see CMS disparities spreadsheets

Complete Measure Evaluation

ACTION ITEM: Because measures under consideration for inactive endorsement must meet all criteria, the Committee must rate the measures on all four endorsement criteria. Measures 160 and 142 were evaluated only on the Importance criteria. The measure submission forms are provided again for reference. The preliminary ratings from the work group members are provided below:

160 Beta blocker prescribed at discharge (CMS)

SCIENTIFIC ACCEPTABILTY		
2a Specifications	C=4	2a. The measure is precisely specified. 2b. Testing demonstrates reliability. 2c. The TAP has accepted the face validity of the measure. 2d. Exclusions are consistent with current ACC/AHA performance measures. 2e. Risk adjustment is not necessary. 2f. Meaningful differences in rates are reported. 2g. Paper record abstraction and extraction of the data from an electronic health record (EHR) have not been compared. 2g. Not addressed. 2h. In addition to the measure steward's recommendation to control for the simultaneous effect of other potential factors, this cardiac measure should be stratified by race and ethnicity, because the performance data suggest potential disparities. 2h. Preliminary analyses suggest that disparities are present, but definitive analyses have not been performed.
2b Reliability	C=4	
2c Validity	C=4	
2d Exclusions	C=4	
2e Risk adjustment	C=1, NA=3	
2f Meaningful differences	C=4	
2g Comparability	C=1 M=1 N=2	
2h Disparities	C=2 P=2	
USABILITY		
3a Understandable	C=4	3a. The measure is currently in use. 3b. This measure's specifications are not harmonized with NQF 0613 measure specifications, because the latter's measure population uses the outpatient setting and includes patients diagnosed with MI at any time in the past. 3c. No other NQF measure addresses this target population. 3c. NQF 0071 is a more appropriate measure (long-term adherence versus in-hospital treatment) and is a better reflection of appropriate clinical care.
3b Harmonization	C=1 P=1 N=1 NA=1	
3c Added value	C=2 N=1 NA=1	
FEASIBILITY		
4a Data a by-product	C=4	4a. The data are generated during routine clinical care. 4b. The data

of care		must be abstracted from paper records. 4c. Exclusions do not require additional data. 4d. Efforts are under way to minimize errors of inclusion/exclusion. 4d. Monitoring of the use of "other reason" is important to guarantee that this category is used consistently and appropriately. 4e. The strategy is already implemented and modifications have eased the data collection burden.
4b Electronic	C=2 P=1 N=1	
4c Exclusions	C=4	
4d Inaccuracies	C=2 P=2	
4e Implementation	C=3	

142 Aspirin prescribed at discharge (CMS)

SCIENTIFIC ACCEPTABILTY		
2a Specifications	C=3	2f. National performance rate has stayed between 98.3% and 98.5% from 2Q09-1Q10. No data offered on different regions, providers. It is possible that this is such a widely used, accepted metric that the differences are not great but that this measure pushes performance. 2h. Univariate analyses suggest potential disparities, rates range from 96.5% for Hispanic/Latinos, to 97.4% for African Americans, to 98.5 for White/Caucasians, to 98.6% for Native Americans. To date, stratification analysis has not been performed. Further analyses need to control for other potential confounding factors. The listed performance rates of 98.5% call into question the purpose of this measure in 2011. Do the trivial differences in rates justify the expense of data collection for this measure? Also given the need to report the same thing for other patient subsets, should this measure be subsumed under other reported measures?
2b Reliability	C=3	
2c Validity	C=3	
2d Exclusions	C=1 P=2	
2e Risk adjustment	C=1, NA=2	
2f Meaningful differences	C=1 M=2	
2g Comparability	M=2 NA=1	
2h Disparities	N=2 NA=1	
USABILITY		
3a Understandable	C=1 P=1 N=1	3a. Hospital Inpatient Quality Reporting Program—measures can be used by individual hospitals for internal quality improvement. Results not available. Used successfully in hospital inpatient quality reporting programs. 3b. Not harmonized with NQF 0631, which evaluates primarily patients in the outpatient setting. 3c. No NQF-endorsed measures with same topic and target population. The reported minimal differences in rates do not seem to allow for meaningful public reporting. Likely that the measure has accomplished its goal and question its ongoing use. Disagree that there are no other similar measures given the PCI, ischemic vascular disease measures, which have large overlap.
3b Harmonization	N=3	
3c Added value	C=1 P=1 M=1	
FEASIBILITY		
4a Data a by-product of care	C=3	4b All the data elements are not presently available in an electronic health record, but retooling work with the Department of Health and Human Services (HHS) is expected to be completed in 2011. 4c/4d. There are important exclusions that are common: allergy, bleeding diathesis, concomitant therapy with other anti-thrombotics/ anticoagulants that do require additional data sources and are not always easy to retrieve/document. This can affect the accuracy of the measure and lead to errors. Exclusions are varied, and in the past "false exclusions" were relatively common. Changes in the measure such that patients prescribed the medication stayed in the measure attenuated this problem. Data elements in the measure are closely tracked to see if problems arise. 4e. The frequency of questions submitted by abstractors pertaining to aspirin prescription and No Aspirin at discharge amounted to only 3.3% during close tracking of the data elements.
4b Electronic	C=1 P=1 M=1	
4c Exclusions	C=2 P=2	
4d Inaccuracies	C=1 P=2	
4e Implementation	C=2 P=1	

Measure 135 was evaluated by the Committee at the April 8, 2011, meeting:

0135 Evaluation of left ventricular systolic function (LVSF)

Percentage of heart failure patients with documentation in the hospital record that left ventricular systolic (LVS) function was evaluated before arrival, during hospitalization, or is planned for after discharge (CMS)

Committee Evaluation:
Importance: Y-15, N-3
Scientific Acceptability: C=7, P=6, M=5, N=0
Usability: C=5, P=10, M=4, N=0
Feasibility: C= 5, P=8, M=6, N=0
Meets criteria: Y-5, N-13

Discussion: The current performance very high. There is concern about misinterpretation of the measure, that is, testing is done at every hospitalization, which is not required by the measure. An unintended consequence may be to encourage overuse.

ACTION ITEM: After consideration of the criteria for inactive endorsement, the Steering Committee will vote on a final recommendation for all three measures:

- Continue endorsement
- Inactive endorsement
- Remove endorsement

APPENDIX A: CMS FINAL RULE FOR VALUE-BASED PURCHASING (VBP) AND EVALUATION OF "TOPPED OUT" MEASURES

The final rule for VBP 2013, dated April 29, 2011, http://www.ofr.gov/OFRUpload/OFRData/2011-10568_PI.pdf (p. 26), discussed evaluation of "topped out" measures. The proposed IPPS rule for 2012 identifies the same measures proposed for retirement in 2014 (p. 374) http://www.ofr.gov/OFRUpload/OFRData/2011-09644_PI.pdf .

"As discussed in the Hospital Inpatient VBP Program proposed rule (76 FR 2459), to determine which measures to propose to initially adopt for the FY 2013 Hospital VBP program, we examined whether any of the eligible Hospital IQR measures should be excluded from the Hospital VBP program measure set because hospital performance on them is 'topped out,' meaning that all but a few hospitals have achieved a similarly high level of performance on them."

"To determine whether an eligible Hospital IQR measure is topped out, we initially focused on the top distribution of hospital performance on each measure and noted if their 75th and 90th percentiles were statistically indistinguishable. Based on our analysis, we identified 7 topped-out measures:

- AMI–1 Aspirin at Arrival;
- AMI–5 Beta Blocker at Discharge;
- AMI–3ACEI or ARB at Discharge;
- AMI–4 Smoking Cessation;
- HF–4 Smoking Cessation;
- PN–4Smoking Cessation; and
- SCIP–Inf-6 Surgery Patients with Appropriate Hair Removal.

We then observed that two of these measures identified as topped out (AMI–3 ACEI or ARB at Discharge and HF–4 Smoking Cessation) had significantly lower mean scores than the others, which led us to question whether our analysis was too focused on the top ends of distributions and whether additional criteria that could account for the entire distribution might be more appropriate. To address this, we analyzed the truncated coefficient of variation (CV) for each of the measures.

The CV is a common statistic that expresses the standard deviation as a percentage of the sample mean in a way that is independent of the units of observation. Applied to this analysis, a large CV would indicate a broad distribution of individual hospital scores, with large and presumably meaningful differences between hospitals in relative performance. A small CV would indicate that the distribution of individual hospital scores is clustered tightly around the mean value, suggesting that it is not useful to draw distinctions between individual hospital performance scores. We used a modified version of the CV, namely a truncated CV, for each measure, in which the 5 percent of hospitals with the lowest scores, and the 5 percent of hospitals with highest scores were first truncated (set aside) before calculating the CV. This was done to avoid

undue effects of the highest and lowest outlier hospitals, which if included, would tend to greatly widen the dispersion of the distribution and make the measure appear to be more reliable or discerning. For example, a measure for which most hospital scores are tightly clustered around the mean value (a small CV) might actually reflect a more robust dispersion if there were also a number of hospitals with extreme outlier values, which would greatly increase the perceived variance in the measure. Accordingly, the truncated CV was added as an additional criterion requiring that a topped-out measure also exhibit a truncated CV < 0.10. Using both the truncated CV and data showing whether hospital performance at the 75th and 90th percentiles was statistically indistinguishable, we reexamined the available measures and determined that the same seven measures continue to meet our proposed definition for being topped-out."

NATIONAL QUALITY FORUM

TO: Cardiovascular Endorsement Maintenance Steering Committee

FR: Reva Winkler, MD, MPH; Ashley Morsell, MPH; Kathryn Streeter, MS

SU: Proposed NQF policy on "inactive measures"

DA: March 30, 2011

At the February 15-16, 2011 meeting, the Steering Committee recommended that two measures be retired because current performance is very high and there seems to be little opportunity for improved performance. These measures have been successful in driving improvement in performance, but concerns have been raised about possible decline in performance if measurement is discontinued. For measures that otherwise meet all NQF endorsement criteria, NQF is considering a category of "inactive endorsement" so that performance could be monitored in the future if necessary to ensure that performance does not decline. This status would apply only to highly credible, reliable, and valid measures that have high levels of performance due to quality improvement actions (often facilitated or motivated through public reporting and pay-for-performance programs) rather than problems with the measure specifications. The key issue is the opportunity cost associated with measuring processes at high levels of performance—rather than focusing on areas where there is really a gap in care.

NQF does not want to move into inactive status measures that are really not needed because they are too far from the desired outcome. The proposed policy will be open for public comment in the coming week and NQF's Board of Directors will consider this policy at their meeting in May. In anticipation of this policy, the Steering Committee should determine whether the two measures recommended for retirement could be recommended for inactive endorsement instead.

CONSIDERATIONS FOR INACTIVE ENDORSEMENT STATUS

The data provided in measure submissions are frequently limited. In determining whether there is further opportunity for improvement, the Steering Committee should review data on representation, variation, and disparities:

- What is the representativeness of the data, i.e., is it national data from a majority of hospitals or is the data from a single state or payer group?
- What is the range in performance, particularly in the lowest decile or quartile?
- What is the performance among possible disparities population(s)?
- Is the measure performance data indicating high levels of performance consistent with other evidence (epidemiologic or research)?
- What is the size of the population at risk, effectiveness of an intervention, and consequences of a quality problem (e.g., even modest variation would be sufficient justification for some highly effective, potentially life-saving treatments)?

Other considerations include:

- Is this a measure with strong, direct evidence of a link to a desired health outcome? Generally measures more distal to the desired outcome with only indirect evidence would not qualify, e.g., assessment of blood pressure (BP) measurement rather than the BP value.
- Measures with a focus more distal to a desired outcome are not needed if there is a measure with a focus more proximal to the desired outcome (e.g., venous thromboembolism (VTE) prophylaxis ordered versus VTE prophylaxis administered).
- Is the measure needed if outcomes (i.e., mortality, readmission) of care are being measured?

PHASE 1 MEASURES FOR POSSIBLE INACTIVE ENDORSEMENT STATUS

The Steering Committee has recommended two measures from Phase 1 that may be candidates for inactive endorsement status. The Committee voted that the following two measures did not meet the *Importance to Measure and Report* criteria due to high performance and lack of opportunity for improvement:

- 0160 Beta blocker prescribed at discharge (CMS)
- 0142 Aspirin prescribed at discharge for AMI (CMS)

DATA ON OPPORTUNITY FOR IMPROVEMENT

160 Beta blocker prescribed at discharge

National performance rates: 1Q10: 98.2% 4Q09 98.3% 3Q09 98.2% 2Q09 98.1%

Representative: 1Q10: 105,436 acute myocardial infarction (AMI) patients, 3111 hospitals

Range/variation: additional data attached

Disparities: see Centers for Medicare & Medicaid Services (CMS) disparities spreadsheets

142 Aspirin prescribed at discharge for AMI

National performance rates: 1Q10: 98.5% 4Q09 98.5% 3Q09 98.4% 2Q09 98.3%

Representative: 1Q10: 107,852 AMI patients, 3096 hospitals

Range/variation: additional data attached

Disparities: see CMS disparities spreadsheets

NATIONAL QUALITY FORUM

COMPLETE MEASURE EVALUATION

ACTION ITEM Since measures under consideration for inactive endorsement must meet all criteria, the Committee must rate the measures on the other endorsement criteria. The measure submission forms are provided again for your reference. The preliminary ratings from the work group members are provided below:

160 Beta blocker prescribed at discharge (CMS)

SCIENTIFIC ACCEPTABILTY		
2a Specifications	C=4	2a. The measure is precisely specified. 2b. Testing demonstrates reliability. 2c. The TAP has accepted the face validity of the measure. 2d. Exclusions are consistent with current ACC/AHA performance measures. 2e. Risk adjustment is not necessary. 2f. Meaningful differences in rates are reported. 2g. Paper record abstraction and extraction of the data from an electronic health record (EHR) have not been compared. 2g. Not addressed. 2h. In addition to the measure steward's recommendation to control for the simultaneous effect of other potential factors, this cardiac measure should be stratified by race and ethnicity, since the performance data suggest potential disparities. 2h. Preliminary analyses suggest that disparities are present, but definitive analyses have not been performed.
2b Reliability	C=4	
2c Validity	C=4	
2d Exclusions	C=4	
2e Risk adjustment	C=1, NA=3	
2f Meaningful differences	C=4	
2g Comparability	C=1 M=1 N=2	
2h Disparities	C=2 P=2	
USABILITY		
3a Understandable	C=4	3a. The measure is currently in use. 3b. This measure's specifications are not harmonized with NQF #0613 measure specifications, as the latter's measure population uses the outpatient setting and includes patients diagnosed with MI at any time in the past. 3c. No other NQF measure addresses this target population. 3c. NQF #0071 is a more appropriate measure (long-term adherence versus in-hospital treatment) and is a better reflection of appropriate clinical care.
3b Harmonization	C=1 P=1 N=1 NA=1	
3c Added value	C=2 N=1 NA=1	
FEASIBILITY		
4a Data a by-product of care	C=4	4a. The data are generated during routine clinical care. 4b. The data must be abstracted from paper records. 4c. Exclusions do not require additional data. 4d. Efforts are underway to minimize errors of inclusion/exclusion. 4d. Monitoring of the use of "other reason" is important to guarantee that this category is used consistently and appropriately. 4e. The strategy is already implemented and modifications have eased the data collection burden.
4b Electronic	C=2 P=1 N=1	
4c Exclusions	C=4	
4d Inaccuracies	C=2 P=2	
4e Implementation	C=3	

0142 Aspirin prescribed at discharge (CMS)

SCIENTIFIC ACCEPTABILTY		
2a Specifications	C=3	2f. National performance rate has stayed between 98.3% and 98.5% from 2Q09-1Q10. No data offered on different regions, providers. It is possible that this is such a widely used, accepted metric that the differences are not great but that this measure pushes performance. 2h. Univariate analyses suggest potential disparities, rates range from 96.5% for Hispanic/Latinos, to 97.4% for African Americans, to 98.5
2b Reliability	C=3	
2c Validity	C=3	
2d Exclusions	C=1 P=2	
2e Risk adjustment	C=1, NA=2	

2f Meaningful differences	C=1 M=2	for White/Caucasians to 98.6% for native Americans. To date, stratification analysis has not been performed. Further analyses need to control for other potential confounding factors. The listed performance rates of 98.5% call into question the purpose of this measure in 2011. Do the trivial differences in rates justify the expense of data collection for this measure? Also given the need to report the same thing for other patient subsets, should this measure be subsumed under other reported measures?
2g Comparability	M=2 NA=1	
2h Disparities	N=2 NA=1	
USABILITY		
3a Understandable	C=1 P=1 N=1	3a. Hospital Inpatient Quality Reporting Program—measures can be used by individual hospitals for internal quality improvement. Results not available. Used successfully in hospital inpatient quality reporting programs. 3b. Not harmonized with NQF #0631, which evaluates primarily patients in the outpatient setting. 3c. No NQF endorsed measures with same topic and target population. The reported minimal differences in rates do not seem to allow for meaningful public reporting. Likely that the measure has accomplished its goal and question its ongoing use. Disagree that there are no other similar measures given the PCI, ischemic vascular disease measures which have large overlap.
3b Harmonization	N=3	
3c Added value	C=1 P=1 M=1	
FEASIBILITY		
4a Data a by-product of care	C=3	4b All the data elements are not presently available in an electronic health record, but retooling work with the Department of Health and Human Services (HHS) is expected to be completed in 2011. 4c/4d. There are important exclusions that are common: allergy, bleeding diathesis, concomitant therapy with other anti-thrombotics/ anticoagulants that do require additional data sources and are not always easy to retrieve/document. This can affect the accuracy of the measure and lead to errors. . Exclusions are varied and in the past "false exclusions" were relatively common. Changes in the measure such that patients prescribed the medication stayed in the measure attenuated this problem. Data elements in the measure are closely tracked to see if problems arise. 4e. The frequency of questions submitted by abstractors pertaining to aspirin prescription and No Aspirin at discharge amounted to only 3.3% during close tracking of the data elements.
4b Electronic	C=1 P=1 M=1	
4c Exclusions	C=2 P=2	
4d Inaccuracies	C=1 P=2	
4e Implementation	C=2 P=1	

ACTION ITEM After consideration of the criteria for inactive endorsement, the Steering Committee will vote on a final recommendation for both measures:

- Continue endorsement
- Inactive endorsement
- Remove endorsement

AMI Measures Using Hospital-Level Performance Rates in 2009 (4 Quarters)

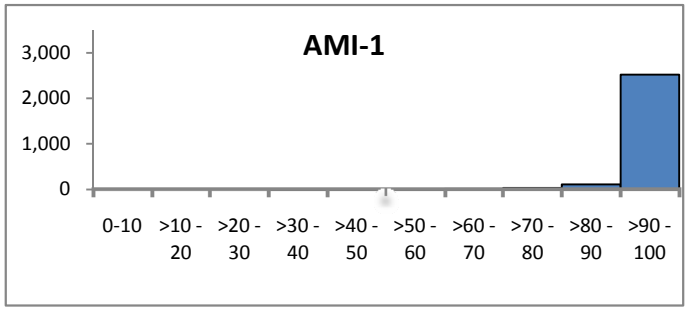
For each measure providers with fewer than 10 eligible patients were excluded

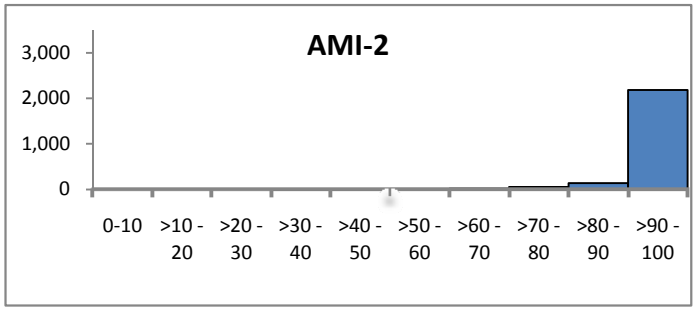
Descriptive statistics and selected percentile values

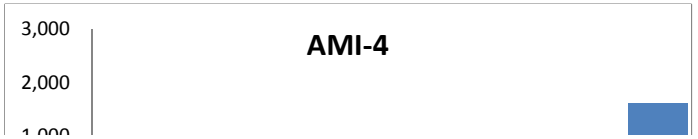
Measure	# of Hosp	Avg	Std	Min	5th	10th	25th	50th	75th	90th	95th	Max
AMI-1	2,670	97.3	4.8	30.8	89.9	92.9	96.9	98.9	100.0	100.0	100.0	100.0
AMI-2 aspirin at discharge	2,403	96.7	6.1	32.3	84.6	90.9	96.3	98.9	100.0	100.0	100.0	100.0
AMI-3	1,597	95.3	6.4	30.0	83.3	87.5	92.7	97.3	100.0	100.0	100.0	100.0
AMI-4	1,640	99.2	3.0	37.5	95.7	97.8	100.0	100.0	100.0	100.0	100.0	100.0
AMI-5 beta blocker at discharge	2,425	96.8	6.4	28.1	85.1	91.4	96.6	99.0	100.0	100.0	100.0	100.0
AMI-7a	45	60.5	23.0	0.0	15.4	29.4	50.0	61.5	78.6	87.5	92.3	92.9
AMI-8a	1373	85.6	13.9	0.0	57.4	68.8	80.0	89.2	95.5	100.0	100.0	100.0

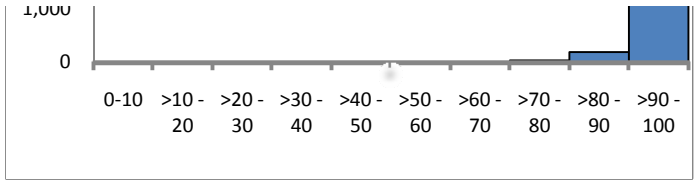
Frequency distribution and histogram by 10%-rate increment

Measure	0-10	>10 - 20	>20 - 30	>30 - 40	>40 - 50	>50 - 60	>60 - 70	>70 - 80	>80 - 90	>90 - 100	Total
AMI-1	0	0	0	1	1	2	9	32	108	2,517	2,670
AMI-2	0	0	0	1	2	8	20	52	136	2,184	2,403
AMI-3	0	0	1	0	1	3	7	40	195	1,350	1,597
AMI-4	0	0	0	1	0	1	1	4	19	1,614	1,640
AMI-5	0	0	2	0	6	7	15	40	138	2,217	2,425
AMI-7a	2	2	1	3	7	6	8	6	6	4	45
AMI-8a	2	4	6	10	25	35	73	193	394	631	1,373





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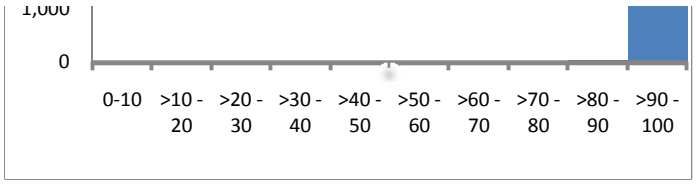
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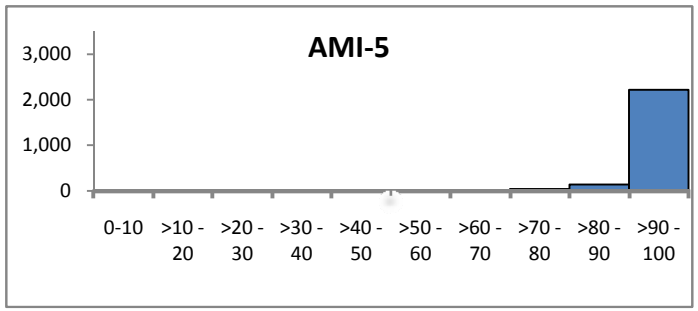
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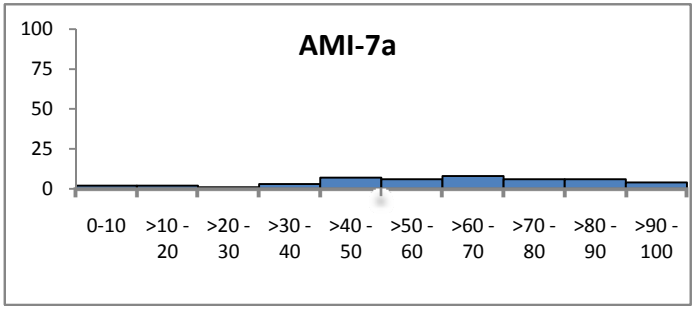
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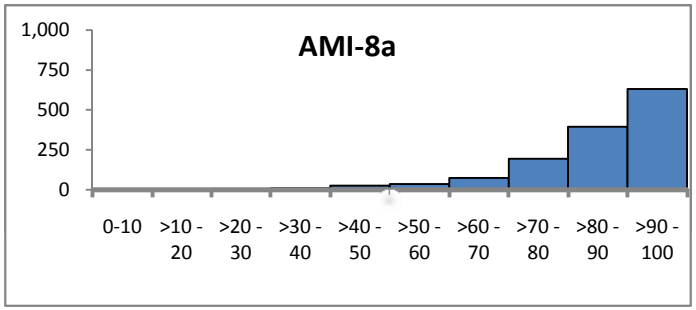
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Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Caucasian	247,145	251,158	98.4	ref.	ref.
African-American	36,868	37,747	97.7	0.68 (0.63-0.73)	<0.001
Hispanic	26,561	27,316	97.2	0.57 (0.53-0.62)	<0.001
Asian/Pacific Islander	7,346	7,472	98.3	0.95 (0.79-1.13)	0.548
Native American	1,074	1,087	98.8	1.34 (0.78-2.32)	0.293
AMI2: Aspirin at discharge					
Caucasian	305,754	310,489	98.5	ref.	ref.
African-American	39,545	40,591	97.4	0.59 (0.55-0.63)	<0.001
Hispanic	27,791	28,805	96.5	0.42 (0.40-0.45)	<0.001
Asian/Pacific Islander	7,694	7,854	98.0	0.74 (0.64-0.87)	<0.001
Native American	1,908	1,935	98.6	1.09 (0.75-1.60)	0.643
AMI3: ACEI or ARB for LVSD					
Caucasian	54,767	57,482	95.3	ref.	ref.
African-American	8,642	9,024	95.8	1.12 (1.01-1.25)	0.040
Hispanic	5,591	5,896	94.8	0.91 (0.80-1.03)	0.123
Asian/Pacific Islander	1,302	1,372	94.9	0.92 (0.72-1.18)	0.514
Native American	371	393	94.4	0.84 (0.54-1.29)	0.416
AMI4: Smoking cessation counseling					
Caucasian	103,977	104,611	99.4	ref.	ref.
African-American	16,611	16,741	99.2	0.78 (0.64-0.94)	0.010
Hispanic	7,671	7,757	98.9	0.54 (0.43-0.68)	<0.001
Asian/Pacific Islander	1,720	1,747	98.5	0.39 (0.26-0.57)	<0.001
Native American	753	767	98.2	0.33 (0.19-0.56)	<0.001
AMI5: Beta-blocker at discharge					
Caucasian	298,954	304,013	98.3	ref.	ref.
African-American	39,112	40,008	97.8	0.74 (0.69-0.79)	<0.001
Hispanic	27,331	28,382	96.3	0.44 (0.41-0.47)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
Asian/Pacific Islander	7,602	7,738	98.2	0.95 (0.80-1.12)	0.526
Native American	1,841	1,882	97.8	0.76 (0.56-1.04)	0.083
AMI7a: Fibrinolytic within 30 minutes					
Caucasian	651	1,169	55.7	ref.	ref.
African-American	73	157	46.5	0.69 (0.50-0.97)	0.030
Hispanic	190	417	45.6	0.67 (0.53-0.83)	<0.001
Asian/Pacific Islander	36	61	59.0	1.15 (0.68-1.93)	0.610
Native American	1	3	33.3	0.40 (0.04-4.40)	0.452
AMI8a: PCI within 90 minutes					
Caucasian	38,044	43,171	88.1	ref.	ref.
African-American	3,448	4,234	81.4	0.59 (0.54-0.64)	<0.001
Hispanic	3,297	3,936	83.8	0.70 (0.64-0.76)	<0.001
Asian/Pacific Islander	1,079	1,237	87.2	0.92 (0.78-1.09)	0.337
Native American	160	189	84.7	0.74 (0.50-1.11)	0.143
HF1: Discharge instructions					
Caucasian	357,746	414,742	86.3	ref.	ref.
African-American	124,070	143,689	86.3	1.01 (0.99-1.03)	0.400
Hispanic	44,786	51,690	86.6	1.03 (1.01-1.06)	0.016
Asian/Pacific Islander	9,895	11,375	87.0	1.07 (1.01-1.13)	0.025
Native American	2,351	3,083	76.3	0.51 (0.47-0.56)	<0.001
HF2: Evaluation of LV function					
Caucasian	521,142	535,940	97.2	ref.	ref.
African-American	159,661	163,219	97.8	1.27 (1.23-1.32)	<0.001
Hispanic	55,388	57,714	96.0	0.68 (0.65-0.71)	<0.001
Asian/Pacific Islander	12,720	13,004	97.8	1.27 (1.13-1.43)	<0.001
Native American	3,201	3,416	93.7	0.42 (0.37-0.49)	<0.001
HF3: ACEI or ARB for LVSD					
Caucasian	145,067	155,808	93.1	ref.	ref.

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
African-American	66,217	69,597	95.1	1.45 (1.39-1.51)	<0.001
Hispanic	18,769	20,068	93.5	1.07 (1.01-1.14)	0.026
Asian/Pacific Islander	3,777	3,962	95.3	1.51 (1.30-1.75)	<0.001
Native American	1,173	1,278	91.8	0.83 (0.68-1.01)	0.064
HF4: Smoking cessation counseling					
Caucasian	76,177	77,858	97.8	ref.	ref.
African-American	44,071	44,760	98.5	1.41 (1.29-1.54)	<0.001
Hispanic	7,273	7,423	98.0	1.07 (0.90-1.27)	0.432
Asian/Pacific Islander	1,375	1,413	97.3	0.80 (0.58-1.11)	0.176
Native American	692	732	94.5	0.38 (0.28-0.53)	<0.001
PN2: Pnemococal vaccination given or screened for					
Caucasian	378,259	408,034	92.7	ref.	ref.
African-American	34,705	39,186	88.6	0.61 (0.59-0.63)	<0.001
Hispanic	24,135	28,528	84.6	0.43 (0.42-0.45)	<0.001
Asian/Pacific Islander	8,804	9,900	88.9	0.63 (0.59-0.67)	<0.001
Native American	2,310	2,640	87.5	0.55 (0.49-0.62)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
Caucasian	78,108	82,387	94.8	ref.	ref.
African-American	12,551	13,078	96.0	1.30 (1.19-1.43)	<0.001
Hispanic	7,338	7,863	93.3	0.77 (0.70-0.84)	<0.001
Asian/Pacific Islander	2,199	2,271	96.8	1.67 (1.32-2.12)	<0.001
Native American	776	846	91.7	0.61 (0.47-0.78)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Caucasian	361,802	380,083	95.2	ref.	ref.
African-American	56,541	60,416	93.6	0.74 (0.71-0.76)	<0.001
Hispanic	34,169	37,132	92.0	0.58 (0.56-0.61)	<0.001
Asian/Pacific Islander	9,388	9,889	94.9	0.95 (0.86-1.04)	0.240
Native American	3,058	3,402	89.9	0.45 (0.40-0.50)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
PN4: Smoking cessation counseling					
Caucasian	153,759	158,876	96.8	ref.	ref.
African-American	30,859	31,710	97.3	1.21 (1.12-1.30)	<0.001
Hispanic	9,885	10,230	96.6	0.95 (0.85-1.07)	0.400
Asian/Pacific Islander	1,689	1,759	96.0	0.80 (0.63-1.02)	0.074
Native American	1,722	1,940	88.8	0.26 (0.23-0.30)	<0.001
PN5c: First antibiotic dose within 6 hours					
Caucasian	402,180	421,893	95.3	ref.	ref.
African-American	60,989	66,036	92.4	0.59 (0.57-0.61)	<0.001
Hispanic	35,145	39,094	89.9	0.44 (0.42-0.45)	<0.001
Asian/Pacific Islander	9,399	9,865	95.3	0.99 (0.90-1.09)	0.812
Native American	3,430	3,752	91.4	0.52 (0.47-0.59)	<0.001
PN6: Antibioti selection consistent with guidelines					
Caucasian	254,116	279,291	91.0	ref.	ref.
African-American	35,023	38,201	91.7	1.09 (1.05-1.13)	<0.001
Hispanic	25,350	28,361	89.4	0.83 (0.80-0.87)	<0.001
Asian/Pacific Islander	6,093	6,689	91.1	1.01 (0.93-1.10)	0.770
Native American	2,570	2,922	88.0	0.72 (0.65-0.81)	<0.001
PN7: Influenza vaccination given or screened for					
Caucasian	266,920	293,208	91.0	ref.	ref.
African-American	31,910	37,007	86.2	0.62 (0.60-0.64)	<0.001
Hispanic	18,854	22,505	83.8	0.51 (0.49-0.53)	<0.001
Asian/Pacific Islander	5,702	6,539	87.2	0.67 (0.62-0.72)	<0.001
Native American	1,927	2,405	80.1	0.40 (0.36-0.44)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Caucasian	827,536	860,067	96.2	ref.	ref.
African-American	95,484	99,527	95.9	0.93 (0.90-0.96)	<0.001
Hispanic	60,439	64,806	93.3	0.54 (0.53-0.56)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
Asian/Pacific Islander	14,743	15,282	96.5	1.08 (0.99-1.17)	0.101
Native American	4,037	4,325	93.3	0.55 (0.49-0.62)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
Caucasian	848,411	868,974	97.6	ref.	ref.
African-American	97,576	100,464	97.1	0.82 (0.79-0.85)	<0.001
Hispanic	62,778	64,991	96.6	0.69 (0.66-0.72)	<0.001
Asian/Pacific Islander	15,171	15,547	97.6	0.98 (0.88-1.08)	0.672
Native American	4,230	4,360	97.0	0.79 (0.66-0.94)	0.008
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Caucasian	766,551	819,715	93.5	ref.	ref.
African-American	87,315	94,468	92.4	0.85 (0.83-0.87)	<0.001
Hispanic	54,461	61,420	88.7	0.54 (0.53-0.56)	<0.001
Asian/Pacific Islander	13,218	14,358	92.1	0.80 (0.76-0.85)	<0.001
Native American	3,812	4,103	92.9	0.91 (0.81-1.02)	0.116
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Caucasian	134,822	144,908	93.0	ref.	ref.
African-American	10,742	11,722	91.6	0.82 (0.77-0.88)	<0.001
Hispanic	11,031	12,520	88.1	0.55 (0.52-0.59)	<0.001
Asian/Pacific Islander	3,437	3,773	91.1	0.77 (0.68-0.86)	<0.001
Native American	706	766	92.2	0.88 (0.68-1.15)	0.344
SCIP6: appropriate hair removal					
Caucasian	1,222,603	1,232,305	99.2	ref.	ref.
African-American	149,984	151,395	99.1	0.84 (0.80-0.89)	<0.001
Hispanic	95,326	97,273	98.0	0.39 (0.37-0.41)	<0.001
Asian/Pacific Islander	23,368	23,575	99.1	0.90 (0.78-1.03)	0.119
Native American	6,390	6,543	97.7	0.33 (0.28-0.39)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Caucasian	327,860	359,462	91.2	ref.	ref.

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
African-American	34,505	38,004	90.8	0.95 (0.92-0.99)	0.007
Hispanic	17,805	20,128	88.5	0.74 (0.71-0.77)	<0.001
Asian/Pacific Islander	5,128	5,770	88.9	0.77 (0.71-0.84)	<0.001
Native American	1,312	1,493	87.9	0.70 (0.60-0.82)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Caucasian	343,547	367,129	93.6	ref.	ref.
African-American	49,075	52,658	93.2	0.94 (0.91-0.98)	<0.001
Hispanic	27,199	30,224	90.0	0.62 (0.59-0.64)	<0.001
Asian/Pacific Islander	7,406	8,195	90.4	0.64 (0.60-0.69)	<0.001
Native American	1,999	2,208	90.5	0.66 (0.57-0.76)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Caucasian	334,443	365,471	91.5	ref.	ref.
African-American	47,804	52,220	91.5	1.00 (0.97-1.04)	0.798
Hispanic	26,376	29,811	88.5	0.71 (0.69-0.74)	<0.001
Asian/Pacific Islander	7,241	8,126	89.1	0.76 (0.71-0.81)	<0.001
Native American	1,942	2,183	89.0	0.75 (0.65-0.86)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Gender (less than 0.1% of cases were excluded due to missing data on gender)

Measures and gender	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Female	132,222	135,450	97.6	ref.	ref.
Male	197,136	199,829	98.7	1.79 (1.70-1.88)	<0.001
AMI2: Aspirin at discharge					
Female	150,930	154,577	97.6	ref.	ref.
Male	247,653	251,152	98.6	1.71 (1.63-1.79)	<0.001
AMI3: ACEI or ARB for LVSD					
Female	26,127	27,376	95.4	ref.	ref.
Male	47,156	49,502	95.3	0.96 (0.90-1.03)	0.269
AMI4: Smoking cessation counseling					
Female	42,885	43,241	99.2	ref.	ref.
Male	93,180	93,741	99.4	1.38 (1.21-1.58)	<0.001
AMI5: Beta-blocker at discharge					
Female	149,171	152,804	97.6	ref.	ref.
Male	240,965	244,715	98.5	1.56 (1.49-1.64)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
Female	254	523	48.6	ref.	ref.
Male	730	1,347	54.2	1.25 (1.02-1.53)	0.029
AMI8a: PCI within 90 minutes					
Female	12,629	15,029	84.0	ref.	ref.
Male	35,545	40,118	88.6	1.48 (1.40-1.56)	<0.001
HF1: Discharge instructions					
Female	264,674	308,679	85.7	ref.	ref.
Male	286,692	330,544	86.7	1.09 (1.07-1.10)	<0.001
HF2: Evaluation of LV function					
Female	391,232	403,675	96.9	ref.	ref.
Male	378,142	387,472	97.6	1.29 (1.25-1.32)	<0.001
HF3: ACEI or ARB for LVSD					
Female	92,111	98,257	93.7	ref.	ref.
Male	148,513	158,409	93.8	1.00 (0.97-1.03)	0.936
HF4: Smoking cessation counseling					

Female	51,445	52,630	97.7	ref.	ref.
Male	80,801	82,294	98.2	1.25 (1.15-1.35)	<0.001
PN2: Pnemococal vaccination given or screened for					
Female	247,221	269,382	91.8	ref.	ref.
Male	212,145	231,563	91.6	0.98 (0.96-1.00)	0.042
PN3a: Initial blood culture within 24 hours - ICU only					
Female	50,079	52,932	94.6	ref.	ref.
Male	53,544	56,305	95.1	1.10 (1.05-1.17)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Female	246,104	260,181	94.6	ref.	ref.
Male	230,916	243,503	94.8	1.05 (1.02-1.08)	<0.001
PN4: Smoking cessation counseling					
Female	103,237	106,615	96.8	ref.	ref.
Male	99,296	102,754	96.6	0.94 (0.90-0.99)	0.011
PN5c: First antibiotic dose within 6 hours					
Female	272,016	288,698	94.2	ref.	ref.
Male	252,643	266,222	94.9	1.14 (1.11-1.17)	<0.001
PN6: Antibioti selection consistent with guidelines					
Female	175,954	193,373	91.0	ref.	ref.
Male	156,410	172,235	90.8	0.98 (0.96-1.00)	0.059
PN7: Influenza vaccination given or screened for					
Female	180,348	200,180	90.1	ref.	ref.
Male	153,242	170,972	89.6	0.95 (0.93-0.97)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Female	660,133	687,675	96.0	ref.	ref.
Male	383,816	399,901	96.0	1.00 (0.98-1.02)	0.660
SCIP2: Prophylactic antibiotic consistent with guidelines					
Female	672,428	691,674	97.2	ref.	ref.
Male	398,658	406,588	98.0	1.44 (1.40-1.48)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Female	613,378	657,129	93.3	ref.	ref.
Male	351,165	378,744	92.7	0.91 (0.89-0.92)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Female	52,328	56,457	92.7	ref.	ref.
Male	114,589	124,004	92.4	0.96 (0.92-1.00)	0.038

SCIP6: appropriate hair removal					
Female	944,375	951,265	99.3	ref.	ref.
Male	613,124	620,263	98.8	0.63 (0.61-0.65)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Female	210,810	232,468	90.7	ref.	ref.
Male	189,354	207,438	91.3	1.08 (1.05-1.10)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Female	266,908	284,212	93.9	ref.	ref.
Male	177,139	192,153	92.2	0.76 (0.75-0.78)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Female	260,379	282,821	92.1	ref.	ref.
Male	171,935	190,847	90.1	0.78 (0.77-0.80)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Age-Group

Measures and age group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
under 65 years	141,150	142,677	98.9	ref.	ref.
65 to 74 years	69,462	70,636	98.3	0.64 (0.59-0.69)	<0.001
75 to 84 years	68,661	70,270	97.7	0.46 (0.43-0.50)	<0.001
85 or older	50,094	51,705	96.9	0.34 (0.31-0.36)	<0.001
AMI2: Aspirin at discharge					
under 65 years	188,910	191,432	98.7	ref.	ref.
65 to 74 years	86,865	88,378	98.3	0.77 (0.72-0.82)	<0.001
75 to 84 years	76,528	78,185	97.9	0.62 (0.58-0.66)	<0.001
85 or older	46,290	47,744	97.0	0.42 (0.40-0.45)	<0.001
AMI3: ACEI or ARB for LVSD					
under 65 years	30,729	31,955	96.2	ref.	ref.
65 to 74 years	16,782	17,608	95.3	0.81 (0.74-0.89)	<0.001
75 to 84 years	16,144	17,053	94.7	0.71 (0.65-0.77)	<0.001
85 or older	9,631	10,265	93.8	0.61 (0.55-0.67)	<0.001
AMI4: Smoking cessation counseling					
under 65 years	101,819	102,305	99.5	ref.	ref.
65 to 74 years	23,569	23,794	99.1	0.50 (0.43-0.59)	<0.001
75 to 84 years	8,919	9,074	98.3	0.27 (0.23-0.33)	<0.001
85 or older	1,762	1,813	97.2	0.16 (0.12-0.22)	<0.001
AMI5: Beta-blocker at discharge					
under 65 years	181,451	184,294	98.5	ref.	ref.
65 to 74 years	85,291	86,894	98.2	0.83 (0.78-0.89)	<0.001
75 to 84 years	76,749	78,361	97.9	0.75 (0.70-0.79)	<0.001
85 or older	46,654	47,979	97.2	0.55 (0.52-0.59)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
under 65 years	648	1,212	53.5	ref.	ref.
65 to 74 years	194	358	54.2	1.03 (0.81-1.30)	0.810
75 to 84 years	93	202	46.0	0.74 (0.55-1.00)	0.051
85 or older	49	98	50.0	0.87 (0.58-1.31)	0.508
AMI8a: PCI within 90 minutes					
under 65 years	31,621	35,686	88.6	ref.	ref.
65 to 74 years	9,116	10,546	86.4	0.82 (0.77-0.87)	<0.001
75 to 84 years	5,398	6,466	83.5	0.65 (0.60-0.70)	<0.001
85 or older	2,040	2,451	83.2	0.64 (0.57-0.71)	<0.001
HF1: Discharge instructions					
under 65 years	178,658	207,594	86.1	ref.	ref.
65 to 74 years	123,528	143,712	86.0	0.99 (0.97-1.01)	0.373
75 to 84 years	151,451	175,244	86.4	1.03 (1.01-1.05)	0.001
85 or older	97,755	112,707	86.7	1.06 (1.04-1.08)	<0.001
HF2: Evaluation of LV function					

under 65 years	216,443	221,533	97.7	ref.	ref.
65 to 74 years	162,507	166,888	97.4	0.87 (0.84-0.91)	<0.001
75 to 84 years	220,926	227,028	97.3	0.85 (0.82-0.88)	<0.001
85 or older	169,548	175,750	96.5	0.64 (0.62-0.67)	<0.001
HF3: ACEI or ARB for LVSD					
under 65 years	95,238	99,651	95.6	ref.	ref.
65 to 74 years	52,803	56,622	93.3	0.64 (0.61-0.67)	<0.001
75 to 84 years	58,917	63,666	92.5	0.57 (0.55-0.60)	<0.001
85 or older	33,681	36,742	91.7	0.51 (0.49-0.53)	<0.001
HF4: Smoking cessation counseling					
under 65 years	78,879	80,061	98.5	ref.	ref.
65 to 74 years	31,278	32,007	97.7	0.64 (0.59-0.71)	<0.001
75 to 84 years	17,689	18,260	96.9	0.46 (0.42-0.51)	<0.001
85 or older	4,402	4,599	95.7	0.33 (0.29-0.39)	<0.001
PN2: Pnemococal vaccination given or screened for					
under 65 years	--	--	--	--	--
65 to 74 years	154,049	168,347	91.5	ref.	ref.
75 to 84 years	180,579	195,787	92.2	1.10 (1.08-1.13)	<0.001
85 or older	124,772	136,849	91.2	0.96 (0.93-0.98)	0.001
PN3a: Initial blood culture within 24 hours - ICU only					
under 65 years	43,154	45,370	95.1	ref.	ref.
65 to 74 years	23,165	24,488	94.6	0.90 (0.84-0.96)	0.003
75 to 84 years	23,777	25,070	94.8	0.94 (0.88-1.01)	0.111
85 or older	13,530	14,312	94.5	0.89 (0.82-0.97)	0.006
PN3b: Initial blood culture before first antibiotic dose - ED only					
under 65 years	180,506	192,602	93.7	ref.	ref.
65 to 74 years	92,223	97,052	95.0	1.28 (1.24-1.32)	<0.001
75 to 84 years	116,268	121,901	95.4	1.38 (1.34-1.43)	<0.001
85 or older	88,051	92,159	95.5	1.44 (1.39-1.49)	<0.001
PN4: Smoking cessation counseling					
under 65 years	138,481	142,258	97.3	ref.	ref.
65 to 74 years	39,066	40,713	96.0	0.65 (0.61-0.69)	<0.001
75 to 84 years	20,330	21,389	95.0	0.52 (0.49-0.56)	<0.001
85 or older	4,673	5,027	93.0	0.36 (0.32-0.40)	<0.001
PN5c: First antibiotic dose within 6 hours					
under 65 years	196,974	210,170	93.7	ref.	ref.
65 to 74 years	103,529	109,243	94.8	1.21 (1.18-1.25)	<0.001
75 to 84 years	128,404	134,912	95.2	1.32 (1.28-1.36)	<0.001
85 or older	95,798	100,641	95.2	1.33 (1.28-1.37)	<0.001
PN6: Antibioti selection consistent with guidelines					
under 65 years	145,078	158,844	91.3	ref.	ref.
65 to 74 years	60,719	67,599	89.8	0.84 (0.81-0.86)	<0.001
75 to 84 years	74,042	81,558	90.8	0.93 (0.91-0.96)	<0.001
85 or older	52,553	57,638	91.2	0.98 (0.95-1.01)	0.255
PN7: Influenza vaccination given or screened for					
under 65 years	92,150	105,920	87.0	ref.	ref.
65 to 74 years	80,824	89,267	90.5	1.43 (1.39-1.47)	<0.001

75 to 84 years	94,637	103,395	91.5	1.61 (1.57-1.66)	<0.001
85 or older	65,988	72,586	90.9	1.49 (1.45-1.54)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
under 65 years	543,747	565,392	96.2	ref.	ref.
65 to 74 years	264,596	275,189	96.2	0.99 (0.97-1.02)	0.637
75 to 84 years	185,731	194,018	95.7	0.89 (0.87-0.92)	<0.001
85 or older	49,930	53,035	94.1	0.64 (0.62-0.67)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
under 65 years	554,132	569,841	97.2	ref.	ref.
65 to 74 years	272,719	278,267	98.0	1.39 (1.35-1.44)	<0.001
75 to 84 years	192,365	196,738	97.8	1.25 (1.21-1.29)	<0.001
85 or older	51,927	53,474	97.1	0.95 (0.90-1.00)	0.066
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
under 65 years	509,115	543,621	93.7	ref.	ref.
65 to 74 years	243,668	262,144	93.0	0.89 (0.88-0.91)	<0.001
75 to 84 years	168,265	182,048	92.4	0.83 (0.81-0.84)	<0.001
85 or older	43,548	48,116	90.5	0.65 (0.63-0.67)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
under 65 years	72,979	79,327	92.0	ref.	ref.
65 to 74 years	52,359	56,792	92.2	1.03 (0.99-1.07)	0.185
75 to 84 years	36,879	39,404	93.6	1.27 (1.21-1.33)	<0.001
85 or older	4,704	4,942	95.2	1.72 (1.51-1.96)	<0.001
SCIP6: appropriate hair removal					
under 65 years	810,303	818,220	99.0	ref.	ref.
65 to 74 years	380,445	383,750	99.1	1.12 (1.08-1.17)	<0.001
75 to 84 years	279,516	281,752	99.2	1.22 (1.17-1.28)	<0.001
85 or older	87,319	87,891	99.3	1.49 (1.37-1.62)	<0.001
SCIPCARD2: Perioperative period beta blocker					
under 65 years	143,202	157,742	90.8	ref.	ref.
65 to 74 years	125,183	136,865	91.5	1.09 (1.06-1.12)	<0.001
75 to 84 years	101,842	111,827	91.1	1.04 (1.01-1.06)	0.010
85 or older	29,959	33,499	89.4	0.86 (0.83-0.89)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
under 65 years	204,866	222,992	91.9	ref.	ref.
65 to 74 years	111,168	117,886	94.3	1.46 (1.42-1.51)	<0.001
75 to 84 years	92,459	97,769	94.6	1.54 (1.49-1.59)	<0.001
85 or older	35,581	37,747	94.3	1.45 (1.39-1.52)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
under 65 years	199,284	221,436	90.0	ref.	ref.
65 to 74 years	108,467	117,367	92.4	1.35 (1.32-1.39)	<0.001
75 to 84 years	90,083	97,336	92.5	1.38 (1.34-1.42)	<0.001
85 or older	34,507	37,557	91.9	1.26 (1.21-1.31)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Census Region

Measures and census region	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
South	126,608	129,145	98.0	ref.	ref.
Midwest	75,072	76,242	98.5	1.29 (1.20-1.38)	<0.001
Northeast	62,335	63,302	98.5	1.29 (1.20-1.39)	<0.001
West	61,600	62,432	98.7	1.48 (1.37-1.61)	<0.001
US Territories	3,752	4,167	90.0	0.18 (0.16-0.20)	<0.001
AMI2: Aspirin at discharge					
South	154,361	157,475	98.0	ref.	ref.
Midwest	96,702	98,082	98.6	1.41 (1.33-1.51)	<0.001
Northeast	72,945	73,951	98.6	1.46 (1.36-1.57)	<0.001
West	71,443	72,548	98.5	1.30 (1.22-1.40)	<0.001
US Territories	3,142	3,683	85.3	0.12 (0.11-0.13)	<0.001
AMI3: ACEI or ARB for LVSD					
South	30,162	31,629	95.4	ref.	ref.
Midwest	17,573	18,369	95.7	1.07 (0.98-1.17)	0.114
Northeast	13,443	14,124	95.2	0.96 (0.87-1.05)	0.392
West	11,325	11,875	95.4	1.00 (0.91-1.11)	0.977
US Territories	783	884	88.6	0.38 (0.30-0.47)	<0.001
AMI4: Smoking cessation counseling					
South	59,052	59,326	99.5	ref.	ref.
Midwest	34,282	34,529	99.3	0.64 (0.54-0.77)	<0.001
Northeast	21,314	21,497	99.1	0.54 (0.45-0.65)	<0.001
West	20,782	20,940	99.2	0.61 (0.50-0.74)	<0.001
US Territories	639	694	92.1	0.05 (0.04-0.07)	<0.001
AMI5: Beta-blocker at discharge					
South	150,602	153,698	98.0	ref.	ref.
Midwest	94,600	96,058	98.5	1.33 (1.25-1.42)	<0.001
Northeast	72,919	73,919	98.6	1.50 (1.40-1.61)	<0.001
West	68,776	70,048	98.2	1.11 (1.04-1.19)	0.002
US Territories	3,248	3,805	85.4	0.12 (0.11-0.13)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
South	386	691	55.9	ref.	ref.
Midwest	71	157	45.2	0.65 (0.46-0.92)	0.016
Northeast	114	221	51.6	0.84 (0.62-1.14)	0.266
West	325	577	56.3	1.02 (0.82-1.27)	0.868
US Territories	88	224	39.3	0.51 (0.38-0.70)	<0.001
AMI8a: PCI within 90 minutes					
South	18,249	21,033	86.8	ref.	ref.
Midwest	12,047	13,530	89.0	1.24 (1.16-1.33)	<0.001
Northeast	7,776	8,945	86.9	1.01 (0.94-1.09)	0.695
West	10,077	11,545	87.3	1.05 (0.98-1.12)	0.182

US Territories	26	96	27.1	0.06 (0.04-0.09)	<0.001
HF1: Discharge instructions					
South	230,620	268,753	85.8	ref.	ref.
Midwest	123,214	142,800	86.3	1.04 (1.02-1.06)	<0.001
Northeast	104,441	118,681	88.0	1.21 (1.19-1.24)	<0.001
West	87,789	101,987	86.1	1.02 (1.00-1.04)	0.037
US Territories	5,328	7,036	75.7	0.52 (0.49-0.55)	<0.001
HF2: Evaluation of LV function					
South	313,881	323,530	97.0	ref.	ref.
Midwest	177,519	182,711	97.2	1.05 (1.02-1.09)	0.004
Northeast	154,546	157,057	98.4	1.89 (1.81-1.98)	<0.001
West	117,503	120,882	97.2	1.07 (1.03-1.11)	0.001
US Territories	5,975	7,019	85.1	0.18 (0.16-0.19)	<0.001
HF3: ACEI or ARB for LVSD					
South	102,341	109,272	93.7	ref.	ref.
Midwest	54,335	57,985	93.7	1.01 (0.97-1.05)	0.700
Northeast	44,314	47,239	93.8	1.03 (0.98-1.07)	0.259
West	37,449	39,660	94.4	1.15 (1.09-1.21)	<0.001
US Territories	2,200	2,525	87.1	0.46 (0.41-0.52)	<0.001
HF4: Smoking cessation counseling					
South	60,779	61,825	98.3	ref.	ref.
Midwest	30,645	31,366	97.7	0.73 (0.66-0.81)	<0.001
Northeast	20,880	21,315	98.0	0.83 (0.74-0.92)	<0.001
West	19,359	19,792	97.8	0.77 (0.69-0.86)	<0.001
US Territories	585	629	93.0	0.23 (0.17-0.31)	<0.001
PN2: Pnemococal vaccination given or screened for					
South	179,960	194,612	92.5	ref.	ref.
Midwest	114,202	124,453	91.8	0.91 (0.88-0.93)	<0.001
Northeast	88,746	95,893	92.5	1.01 (0.98-1.04)	0.466
West	75,360	83,017	90.8	0.80 (0.78-0.82)	<0.001
US Territories	1,132	3,008	37.6	0.05 (0.05-0.05)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
South	41,731	43,940	95.0	ref.	ref.
Midwest	24,196	25,563	94.7	0.94 (0.87-1.00)	0.065
Northeast	16,787	17,632	95.2	1.05 (0.97-1.14)	0.225
West	20,703	21,725	95.3	1.07 (0.99-1.16)	0.072
US Territories	209	380	55.0	0.06 (0.05-0.08)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
South	187,438	197,520	94.9	ref.	ref.
Midwest	110,172	115,477	95.4	1.12 (1.08-1.16)	<0.001
Northeast	93,600	98,873	94.7	0.95 (0.92-0.99)	0.008
West	83,935	89,171	94.1	0.86 (0.83-0.89)	<0.001
US Territories	1,903	2,673	71.2	0.13 (0.12-0.14)	<0.001
PN4: Smoking cessation counseling					
South	91,072	93,604	97.3	ref.	ref.
Midwest	48,987	51,087	95.9	0.65 (0.61-0.69)	<0.001
Northeast	32,410	33,325	97.3	0.98 (0.91-1.06)	0.695

West	29,466	30,694	96.0	0.67 (0.62-0.72)	<0.001
US Territories	615	677	90.8	0.28 (0.21-0.36)	<0.001
PN5c: First antibiotic dose within 6 hours					
South	208,883	220,861	94.6	ref.	ref.
Midwest	128,036	134,173	95.4	1.20 (1.16-1.23)	<0.001
Northeast	96,895	102,680	94.4	0.96 (0.93-0.99)	0.014
West	88,422	93,297	94.8	1.04 (1.01-1.08)	0.024
US Territories	2,469	3,955	62.4	0.10 (0.09-0.10)	<0.001
PN6: Antibioti selection consistent with guidelines					
South	134,164	147,904	90.7	ref.	ref.
Midwest	78,294	86,405	90.6	0.99 (0.96-1.02)	0.434
Northeast	59,152	63,980	92.5	1.25 (1.21-1.30)	<0.001
West	58,295	63,887	91.2	1.07 (1.03-1.10)	<0.001
US Territories	2,487	3,463	71.8	0.26 (0.24-0.28)	<0.001
PN7: Influenza vaccination given or screened for					
South	136,798	151,103	90.5	ref.	ref.
Midwest	82,023	90,887	90.2	0.97 (0.94-0.99)	0.021
Northeast	60,341	66,389	90.9	1.04 (1.01-1.08)	0.008
West	53,674	60,817	88.3	0.79 (0.76-0.81)	<0.001
US Territories	763	1,972	38.7	0.07 (0.06-0.07)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
South	394,545	409,842	96.3	ref.	ref.
Midwest	266,459	276,954	96.2	0.98 (0.96-1.01)	0.223
Northeast	193,461	200,392	96.5	1.08 (1.05-1.11)	<0.001
West	183,368	192,227	95.4	0.80 (0.78-0.82)	<0.001
US Territories	6,171	8,219	75.1	0.12 (0.11-0.12)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
South	403,132	414,194	97.3	ref.	ref.
Midwest	273,589	279,578	97.9	1.25 (1.21-1.29)	<0.001
Northeast	197,917	202,575	97.7	1.17 (1.13-1.21)	<0.001
West	189,102	194,077	97.4	1.04 (1.01-1.08)	0.015
US Territories	7,403	7,896	93.8	0.41 (0.38-0.45)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
South	361,060	388,513	92.9	ref.	ref.
Midwest	248,442	264,681	93.9	1.16 (1.14-1.19)	<0.001
Northeast	180,683	191,769	94.2	1.24 (1.21-1.27)	<0.001
West	169,118	183,133	92.3	0.92 (0.90-0.94)	<0.001
US Territories	5,293	7,833	67.6	0.16 (0.15-0.17)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
South	66,018	71,829	91.9	ref.	ref.
Midwest	40,808	44,136	92.5	1.08 (1.03-1.13)	<0.001
Northeast	29,288	30,993	94.5	1.51 (1.43-1.60)	<0.001
West	29,005	31,251	92.8	1.14 (1.08-1.20)	<0.001
US Territories	1,802	2,256	79.9	0.35 (0.31-0.39)	<0.001
SCIP6: appropriate hair removal					
South	587,629	592,145	99.2	ref.	ref.
Midwest	385,646	388,859	99.2	0.92 (0.88-0.97)	<0.001

Northeast	297,284	299,532	99.2	1.02 (0.97-1.07)	0.532
West	279,180	282,116	99.0	0.73 (0.70-0.77)	<0.001
US Territories	7,844	8,961	87.5	0.05 (0.05-0.06)	<0.001
SCIPCARD2: Perioperative period beta blocker					
South	147,784	162,051	91.2	ref.	ref.
Midwest	106,546	117,054	91.0	0.98 (0.95-1.01)	0.113
Northeast	85,381	92,184	92.6	1.21 (1.18-1.25)	<0.001
West	59,482	67,099	88.6	0.75 (0.73-0.78)	<0.001
US Territories	993	1,545	64.3	0.17 (0.16-0.19)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
South	169,988	182,774	93.0	ref.	ref.
Midwest	99,327	106,377	93.4	1.06 (1.03-1.09)	<0.001
Northeast	96,401	100,803	95.6	1.65 (1.59-1.71)	<0.001
West	76,837	84,597	90.8	0.74 (0.72-0.77)	<0.001
US Territories	1,521	1,843	82.5	0.36 (0.31-0.40)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
South	164,922	181,622	90.8	ref.	ref.
Midwest	96,639	105,893	91.3	1.06 (1.03-1.09)	<0.001
Northeast	94,639	100,532	94.1	1.63 (1.58-1.68)	<0.001
West	74,698	83,964	89.0	0.82 (0.79-0.84)	<0.001
US Territories	1,443	1,685	85.6	0.60 (0.53-0.69)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Hospital Rural/Urban Location (less than 0.1 of cases were excluded due to missing data on hospital rural/urban location)

Measures and hospital rural/urban location	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Urban	291,143	295,802	98.4	ref.	ref.
Rural	38,206	39,467	96.8	0.48 (0.46-0.52)	<0.001
AMI2: Aspirin at discharge					
Urban	358,943	364,751	98.4	ref.	ref.
Rural	39,639	40,973	96.7	0.48 (0.45-0.51)	<0.001
AMI3: ACEI or ARB for LVSD					
Urban	65,715	68,816	95.5	ref.	ref.
Rural	7,570	8,064	93.9	0.72 (0.66-0.80)	<0.001
AMI4: Smoking cessation counseling					
Urban	122,296	123,021	99.4	ref.	ref.
Rural	13,772	13,964	98.6	0.43 (0.36-0.50)	<0.001
AMI5: Beta-blocker at discharge					
Urban	350,908	356,917	98.3	ref.	ref.
Rural	39,223	40,596	96.6	0.49 (0.46-0.52)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
Urban	743	1,378	53.9	ref.	ref.
Rural	241	491	49.1	0.82 (0.67-1.01)	0.066
AMI8a: PCI within 90 minutes					
Urban	44,330	50,581	87.6	ref.	ref.
Rural	3,845	4,568	84.2	0.75 (0.69-0.82)	<0.001
HF1: Discharge instructions					
Urban	462,198	530,366	87.1	ref.	ref.
Rural	89,161	108,850	81.9	0.67 (0.66-0.68)	<0.001
HF2: Evaluation of LV function					
Urban	640,201	651,626	98.2	ref.	ref.
Rural	129,180	139,524	92.6	0.22 (0.22-0.23)	<0.001
HF3: ACEI or ARB for LVSD					
Urban	204,835	216,883	94.4	ref.	ref.
Rural	35,794	39,788	90.0	0.53 (0.51-0.55)	<0.001

HF4: Smoking cessation counseling					
Urban	109,946	111,420	98.7	ref.	ref.
Rural	22,294	23,495	94.9	0.25 (0.23-0.27)	<0.001
PN2: Pnemococal vaccination given or screened for					
Urban	343,445	372,029	92.3	ref.	ref.
Rural	115,907	128,899	89.9	0.74 (0.73-0.76)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
Urban	82,609	86,195	95.8	ref.	ref.
Rural	21,017	23,045	91.2	0.45 (0.43-0.48)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Urban	370,713	390,752	94.9	ref.	ref.
Rural	106,285	112,910	94.1	0.87 (0.84-0.89)	<0.001
PN4: Smoking cessation counseling					
Urban	153,343	157,007	97.7	ref.	ref.
Rural	49,195	52,364	93.9	0.37 (0.35-0.39)	<0.001
PN5c: First antibiotic dose within 6 hours					
Urban	391,112	414,535	94.3	ref.	ref.
Rural	133,539	140,375	95.1	1.17 (1.14-1.20)	<0.001
PN6: Antibioti selection consistent with guidelines					
Urban	244,813	267,228	91.6	ref.	ref.
Rural	87,548	98,376	89.0	0.74 (0.72-0.76)	<0.001
PN7: Influenza vaccination given or screened for					
Urban	250,927	277,437	90.4	ref.	ref.
Rural	82,639	93,694	88.2	0.79 (0.77-0.81)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Urban	873,006	907,766	96.2	ref.	ref.
Rural	170,887	179,749	95.1	0.77 (0.75-0.79)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
Urban	895,997	917,696	97.6	ref.	ref.
Rural	175,035	180,505	97.0	0.77 (0.75-0.80)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Urban	805,137	863,438	93.2	ref.	ref.
Rural	159,351	172,373	92.4	0.89 (0.87-0.90)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Urban	155,675	168,209	92.5	ref.	ref.
Rural	11,246	12,256	91.8	0.90 (0.84-0.96)	0.001

SCIP6: appropriate hair removal					
Urban	1,304,767	1,316,311	99.1	ref.	ref.
Rural	252,581	255,064	99.0	0.90 (0.86-0.94)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Urban	341,816	374,870	91.2	ref.	ref.
Rural	58,327	65,020	89.7	0.84 (0.82-0.87)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Urban	368,551	393,488	93.7	ref.	ref.
Rural	75,501	82,880	91.1	0.69 (0.67-0.71)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Urban	358,864	391,436	91.7	ref.	ref.
Rural	73,455	82,235	89.3	0.76 (0.74-0.78)	<0.001

HF Measures Using Hospital-Level Performance Rates in 2009 (4 Quarters)

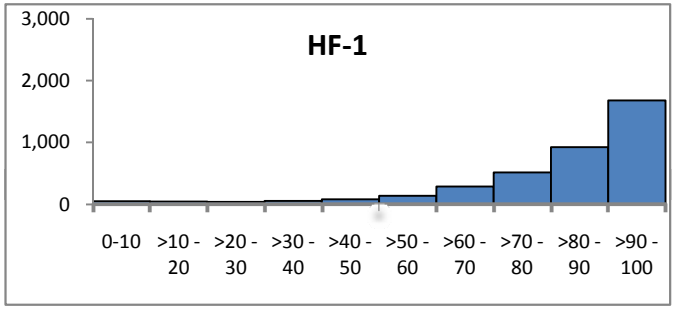
For each measure providers with fewer than 10 eligible patients were excluded

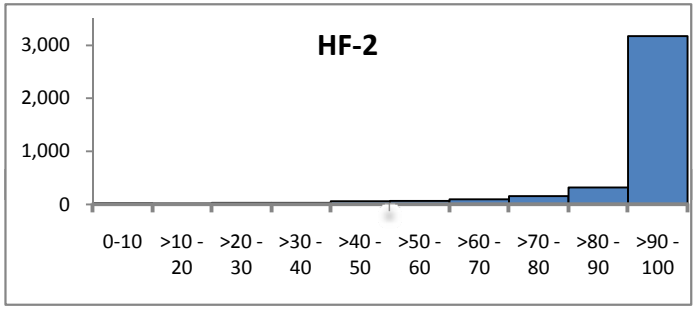
Descriptive statistics and selected percentile values

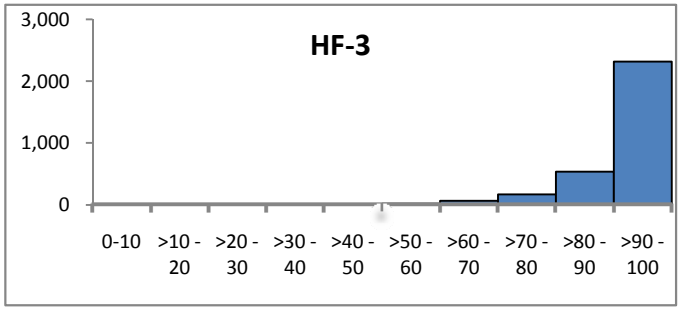
Measure	# of Hosp	Avg	Std	Min	5th	10th	25th	50th	75th	90th	95th	Max
HF-1 (0136 Discharge Instructions)	3,812	82.2	19.2	0.0	40.7	58.8	76.3	88.2	95.3	99.3	100.0	100.0
HF-2 (0135 Evaluation of LVSD)	3,961	92.3	15.2	0.0	58.3	76.5	93.1	98.3	99.9	100.0	100.0	100.0
HF-3 (0162 ACEI or ARB for LVSD)	3,126	92.6	9.1	21.4	75.0	81.8	90.0	95.2	99.0	100.0	100.0	100.0
HF-4 (Smoking cessation)	2,673	97.6	7.2	13.3	87.5	93.3	98.7	100.0	100.0	100.0	100.0	100.0

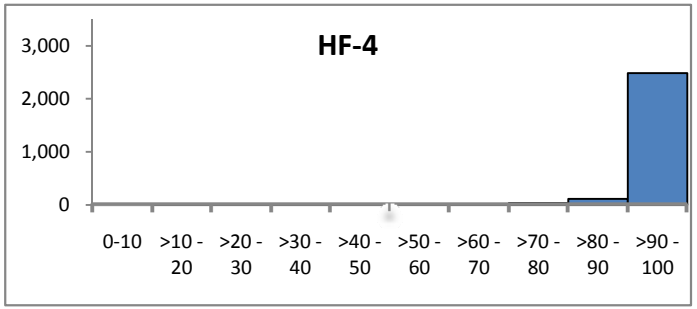
Frequency distribution and histogram by 10%-rate increment

Measure	0-10	>10 - 20	>20 - 30	>30 - 40	>40 - 50	>50 - 60	>60 - 70	>70 - 80	>80 - 90	>90 - 100	Total
HF-1	48	43	41	56	80	136	286	515	924	1,683	3,812
HF-2	20	15	28	30	57	67	93	157	319	3,175	3,961
HF-3	0	0	3	4	14	18	65	171	536	2,315	3,126
HF-4	0	2	3	4	5	10	15	35	111	2,488	2,673









AMI Measures Using Hospital-Level Performance Rates in 2009 (4 Quarters)

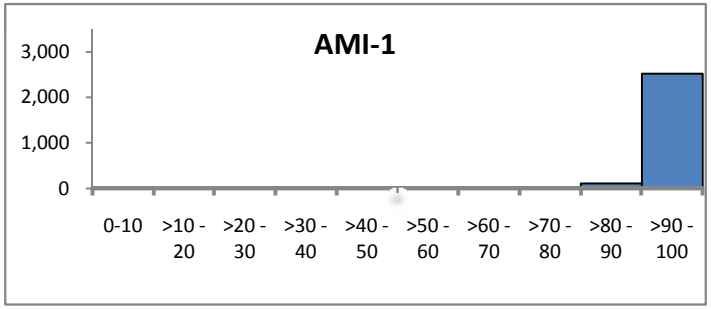
For each measure providers with fewer than 10 eligible patients were excluded

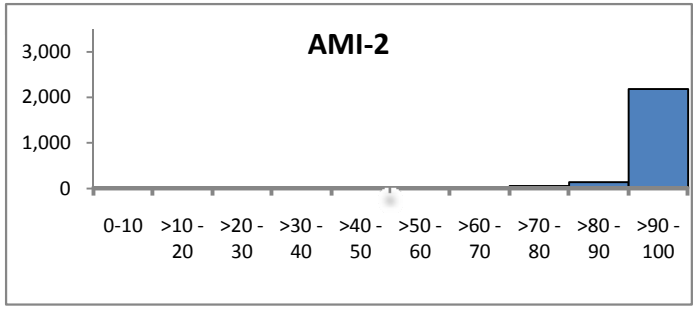
Descriptive statistics and selected percentile values

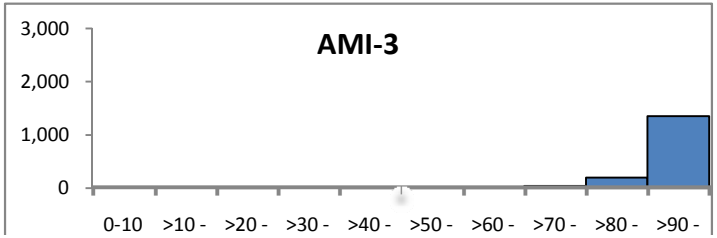
Measure	# of Hosp	Avg	Std	Min	5th	10th	25th	50th	75th	90th	95th
AMI-1 (0132 Aspirin at arrival)	2,670	97.3	4.8	30.8	89.9	92.9	96.9	98.9	100.0	100.0	100.0
AMI-2 (0142 Aspirin at discharge)	2,403	96.7	6.1	32.3	84.6	90.9	96.3	98.9	100.0	100.0	100.0
AMI-3 (0137 ACEI or ARB for LVSD)	1,597	95.3	6.4	30.0	83.3	87.5	92.7	97.3	100.0	100.0	100.0
AMI-4 (Smoking cessation)	1,640	99.2	3.0	37.5	95.7	97.8	100.0	100.0	100.0	100.0	100.0
AMI-5 (0160 Beta blocker at discharge)	2,425	96.8	6.4	28.1	85.1	91.4	96.6	99.0	100.0	100.0	100.0
AMI-7a (0164 Fibrinolytic within 30 minutes	45	60.5	23.0	0.0	15.4	29.4	50.0	61.5	78.6	87.5	92.3
AMI-8a (0163 PCI within 90 minutes)	1373	85.6	13.9	0.0	57.4	68.8	80.0	89.2	95.5	100.0	100.0

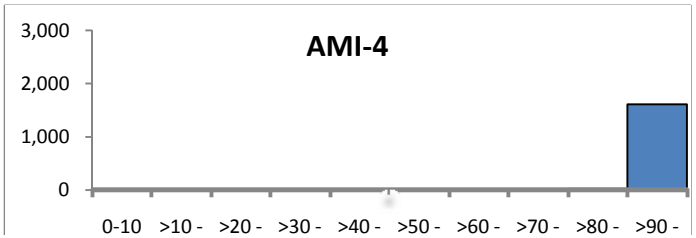
Frequency distribution and histogram by 10%-rate increment

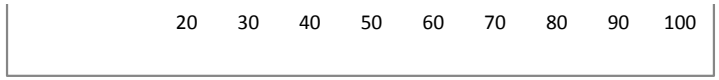
Measure	0-10	>10 - 20	>20 - 30	>30 - 40	>40 - 50	>50 - 60	>60 - 70	>70 - 80	>80 - 90	>90 - 100	Total
AMI-1	0	0	0	1	1	2	9	32	108	2,517	2,670
AMI-2	0	0	0	1	2	8	20	52	136	2,184	2,403
AMI-3	0	0	1	0	1	3	7	40	195	1,350	1,597
AMI-4	0	0	0	1	0	1	1	4	19	1,614	1,640
AMI-5	0	0	2	0	6	7	15	40	138	2,217	2,425
AMI-7a	2	2	1	3	7	6	8	6	6	4	45
AMI-8a	2	4	6	10	25	35	73	193	394	631	1,373







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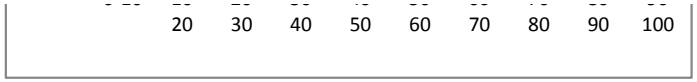
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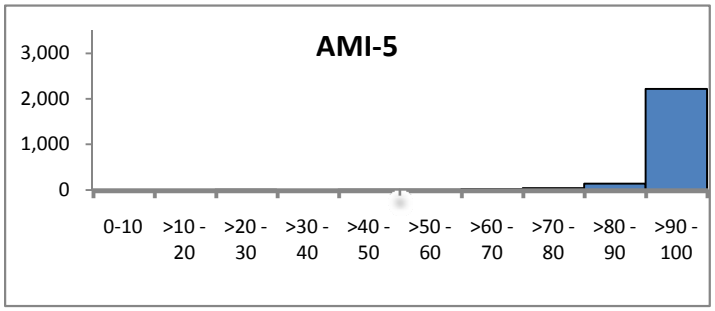
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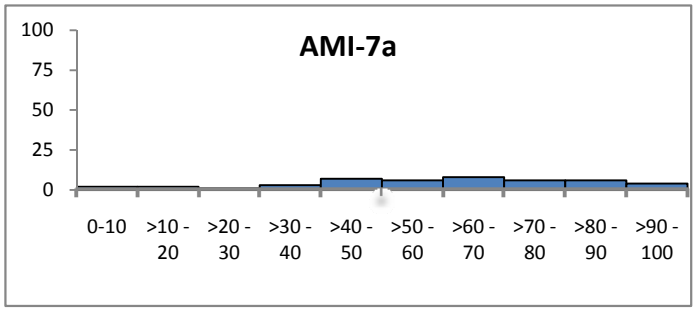
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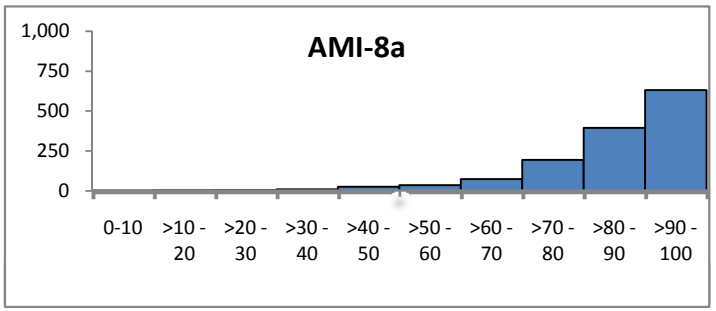
>80 - 90
>90 - 100


AMI-8a
1,000
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>80 - 90
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NATIONAL QUALITY FORUM

TO: Cardiovascular Endorsement Maintenance Steering Committee

FROM: Reva Winkler, MD, MPH; Ashley Morsell, MPH; Kathryn Streeter, MS

RE: Evaluation of competing and related measures in the Cardiovascular Endorsement Maintenance 2010 project

DA: May 3, 2011

PHASE 1

The Committee began a discussion of competing and related measures for Phase 1 at the April 7-8, 2011, meeting. The NQF guidance for evaluating related and competing measures is outlined in Appendix 1.

At the meeting, the Committee reviewed side-by-side tables of related measures to select "best-in-class" among competing measures and to identify a need for harmonization for related measures. In the discussion of measures of secondary prevention for ischemic vascular disease, the Committee suggested that measure 0076 Optimal vascular care, rather than multiple individual measures, would efficiently address measurement in this area. Realizing that such a recommendation would have important ramifications for NQF's portfolio of measures and its users, the Committee requested an analysis of the pros and cons of such a recommendation.

The measures under discussion include:

- 0076 Optimal vascular care (MNCM; Minnesota Community Measurement)
    - Components: BP < 140/90, LDL < 100, non-smoker, aspirin use—MNCM has amended the measure submission to indicate that the individual components are reported along with the composite result.
- 0073 IVD Blood pressure management (NCQA)
- 0068 IVD Use of aspirin or anti-thrombotics (NCQA)
- 0067 CAD Anti-platelet therapy (AMA PCPI)
- 0075 IVD Complete lipid profile and LDL control < 100 (NCQA)
- 0074 Chronic stable coronary artery disease: lipid control (AMA PCPI)

Pros

The Committee identified several benefits of recommending the composite for ischemic heart disease (0076) alone:

- The composite focuses on several factors that are all important to the individual patient in a single measure. This is a more challenging, but important, patient-focused goal.
- Reduces of the number of measures in this topic area and eliminates redundancy.

- Eliminates the need for harmonization of multiple measures.
- Conserves opportunity costs.

The Committee also suggests that future measures be consolidated across conditions. For example, the Committee noted that it would be possible to construct a measure of blood pressure control that includes patients with hypertension and ischemic heart disease and diabetes or use of ACEI/ARBS n all patients with left ventricular systolic dysfunction rather than multiple measures for patients with coronary heart disease (CAD), heart failure, or acute myocardial infarction (AMI).

Additionally, NQF staff notes:

- The Consensus Standards Approval Committee (CSAC) has been pushing for more challenging, broad, patient-focused measures, rather than continuing with numerous narrowly focused measures.
- Significant harmonization is needed among the individual measures.

Cons

- The individual measures, such as blood pressure control or aspirin use, may be important for end users as stand-alone measures.
- The individual measures that form the MNCM composite have not been evaluated as stand-alone measures and are not available for multiple users for public reporting or payment programs.
- The lack of uniform availability of an electronic platform necessitates maintenance of measures that can be obtained from different data sources (e.g., claims, electronic health records [EHRs], registries).
- The individual measures have been endorsed for several years and are in use in many large programs such as the Centers for Medicare & Medicaid Services' (CMS's) Physicians Quality Reporting System (PQRS) and the National Committee for Quality Assurance's (NCQA's) Healthcare Effectiveness Data Information Set (HEDIS).
- Some of the measures have been re-tooled as eMeasures for the Meaningful Use Program.

Measure	Current uses
0073 IVD Blood pressure management (NCQA)	2011 PQRS HEDIS for Physician Measurement and NCQA´s Heart Stroke Recognition Program. Re-tooled eMeasure for meaningful use
0068 IVD Use of aspirin or anti-thrombotics (NCQA)	2011 PQRS HEDIS—plans and physician measurement Re-tooled eMeasure for meaningful use
0067 CAD Anti-platelet therapy (AMA PCPI)	2011 PQRS Re-tooled eMeasure
0075 IVD Lipid control (NCQA)	2011 PQRS (as two measures) HEDIS—plans and physician measurement Re-tooled eMeasure for meaningful use

0074 CAD Lipid control (AMA PCPI)—This project evaluated significantly revised specifications. Prior version of 0074: Coronary artery disease (CAD): drug therapy for lowering LDL-cholesterol Percentage of patients aged 18 years and older with a diagnosis of CAD who were prescribed a lipid-lowering therapy (based on current ACC/AHA guidelines)	Revised measure not in current use Prior version of 0074: 2011 PQRS Re-tooled eMeasure

The side-by-side tables for secondary prevention with anti-platelet agents and lipid control are attached for Committee review.

PHASE 2

Among the measures evaluated in Phase 2 the following competing measures were identified:

- 1525 Chronic anticoagulation therapy [for a-fib or a-flutter] (AMA PCPI)
- 0624 Atrial fibrillation: warfarin therapy (Active Health)

- 0081 Heart failure: ACEI/ARB therapy (PCPI)
- 0610 Heart failure: use of ACEI or ARB (Active Health)

- 0083 Heart failure: beta blocker therapy (PCPI)
- 0615 Heart failure: use of beta blocker therapy (Active Health)

The side-by-side tables for these three pairs are attached. Several similar issues exist for all of these pairs of measures:

- The measures from Active Health and PCPI each use different data platforms. The measures from Active Health were previously endorsed in NQF's Clinically Enriched Administrative Measures project to meet the needs of end users who use administrative data. The PCPI measures are based on medical records/EHRs or claims using CPT II codes.
- The measures from Active Health are applicable to all levels of analysis, including clinicians, groups, plans, and systems, and the PCPI measures are applicable only to clinicians and groups.

Measure	Current uses
• 1525 Chronic anticoagulation therapy [for a-fib or a-flutter] (PCPI)	New measure
• 0624 Atrial fibrillation: warfarin therapy	In use by health plans—3 million patient database

(Active Health)	
• 0081 Heart failure: ACEI/ARB therapy (PCPI)	Re-tooled eMeasure for meaningful use
• 0610 Heart failure: use of ACEI or ARB (Active Health)	In use by health plans—3 million patient database
• 0083 Heart failure: beta blocker therapy (PCPI)	Re-tooled eMeasure
• 0615 Heart failure: use of beta blocker therapy (Active Health)	In use by health plans—3 million patient database

ACTION ITEM: Using the guidance in Appendix 1, the Committee will make final recommendations on the competing measures.

APPENDIX 1: NQF GUIDANCE ON COMPETING AND RELATED MEASURES

Principles for Selection of Best in Class

The Consensus Standards Approval Committee (CSAC) has identified the following principles for selection of best in class:

1. The endorsement of multiple competing measures should be by exception with adequate justification.
2. NQF prefers endorsement of measures that include the broadest possible target patient population for whom the measure is appropriate.
3. NQF prefers endorsement of measures that assess performance scores at the broadest level of analysis (e.g., for as many possible individuals and entities) for which the measure is appropriate.
4. If a single measure cannot accommodate the inclusion of all relevant patient populations or entities for performance measurement, a second measure could be considered for endorsement. The two measures should be harmonized to the extent possible.
5. When best in class is not clear, it may be appropriate to endorse more than one competing measure. At the time of initial endorsement, NQF should identify analyses needed to conduct a rigorous evaluation of the use and usefulness of the measures. This information should be provided by the developers to support best-in-class determination at the time of three-year maintenance.

NQF Evaluation Criteria: Comparison of Related or Competing Measures

If a measure meets the NQF evaluation criteria **and** there are endorsed or new related measures (either the same measure focus or the same target population), or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

> **Criterion 5a.** The measure specifications are harmonized with related measures; OR the differences in specifications are justified.
>
> **Criterion 5b.** The measure is superior to competing measures (e.g., is a more valid or efficient way to measure); OR multiple measures are justified.

Guidance for Evaluating Competing Measures

Competing measures are those that essentially address the same target process, condition, event or outcome (numerator) and the same target population (denominator). The goal is to endorse the best measure and minimize confusing or conflicting information.

Competing measures may already be endorsed or may be new submissions. Before competing measurers are compared, they must first be evaluated individually and judged to adequately meet

all four evaluation criteria to be suitable for a Steering Committee to recommend endorsement. This procedure is intended to give each measure a thorough evaluation and prevent expending time and effort on comparing measures if some competing measures are not evaluated favorably.

If a new measure competes with an NQF-endorsed® measure, the developer should be expected to address how the proposed measure is superior to competing measures, or the added value of endorsing multiple measures. Ideally, the developer will be able to present analyses demonstrating how the submitted measure is superior; however, in many situations that will not be feasible (e.g., no access to an alternative data source) and then the developer should be able to present a rationale for superiority. If the competing measure also is a new submission, the developers can be asked to address that question after the Committee determines that both meet the evaluation criteria.

Determination of the best measure should be based on the evaluation criteria of *Importance to Measure and Report, Scientific Acceptability of Measure Properties, Usability,* and *Feasibility*. In the absence of empirical data to compare the measures, the Steering Committee will need to compare not only their evaluation ratings, but also the information submitted in support of the criteria. The comparison will require expert judgment and may involve consideration of the pros and cons related to all the criteria. For example, slightly lower reliability, but much greater feasibility might indicate the more feasible measure should be selected.

If the measures are determined to be conceptually the same, then generally they would be expected to be evaluated equally on the subcriteria under *Importance to Measure and Report*, i.e., impact, opportunity for improvement, and evidence supporting the focus of measurement. However, they could differ on opportunity for improvement depending on whether they are new measures or have been in use. For new measures, opportunity for improvement generally will be the same because it is based on epidemiologic and research data. However, measures in use at the time of endorsement maintenance may differ in opportunity for improvement (e.g., one may be "topped out" in terms of performance). When measures are essentially the same on the criterion *Importance to Measure and Report*, the determination of the best measure to recommend for endorsement would be made based on the remaining criteria.

Table 1. Evaluating Competing Measures for Superiority or Justification for Multiple Measures

Determine if need to compare measures for superiority	Determine if need to evaluate competing measures (address the same concepts for measure focus—i.e., the target process, condition, event, or outcome for the same target patient population) for superiority
Assess competing measures for superiority on NQF evaluation criteria and subcriteria	The comparison will require expert judgment and may involve considerations of pros and cons related to all the criteria. **Impact, Opportunity, and Evidence—Importance to Measure and Report:** Competing measures generally will be the same in terms of impact and evidence for the focus of measurement. • Compare measures on opportunity for improvement. For new measures, this generally will be the same. However, measures in use at the time of endorsement maintenance may differ in opportunity for improvement (e.g., one may be "topped

	out" in terms of performance). **Reliability and Validity—Scientific Acceptability of Measure Properties:** • Compare evidence of reliability. • Compare evidence of validity. Untested measures cannot be considered superior to tested measures because there would be no empirical evidence on which to compare reliability and validity. (However, a new measure, when tested, could ultimately demonstrate superiority and the NQF endorsement maintenance cycles allow for regular submission of new measures.) Compare and identify differences in specifications. *All else being equal*: • Measures with the broadest application (target patient population, settings, level of analysis) are preferred. **Usability:** • Compare evidence of use and usefulness for public reporting. • Compare evidence of use and usefulness for quality improvement. *All else being equal*: • Measures that are publicly reported are preferred. • Measures with the widest use (e.g., settings, numbers of entities reporting performance results) are preferred. • Measures that are in use are preferred over those without evidence of use. **Feasibility:** • Compare the ease of data collection. • Compare the potential for inaccuracies, errors, and unintended consequences. *All else being equal:* • Measures based on data from electronic sources are preferred. • Measures that are freely available are preferred.
If a competing measure does not have clear superiority, Assess justification for multiple measures	If a competing measure does not have clear superiority, is there a justification for endorsing multiple measures? Does the added value offset any burden or negative impact? Measures based on different data types *may provide added value if*: • the additional measure allows transition to an EHR-based measure OR • the additional measure is applicable to additional setting(s) or increases the number of individuals and entities for whom performance results are available and cannot be achieved by expanding the target patient population, setting, or level of analysis of one measure. A rationale for recommending endorsement of multiple competing measures must be

	provided. Identify analyses needed to conduct a rigorous evaluation of the use and usefulness of the measures at the time of endorsement maintenance.

If the Steering Committee is unable to identify the best (superior) measure, multiple endorsed measures may be acceptable and the Steering Committee needs to identify the additive value of endorsement of more than one measure. That is, does having multiple measures add enough value to offset any potential negative impact?

- Value
  - Is an additional measure necessary?
    - to change to an EHR-based measurement;
    - to have broader applicability (if one measure cannot accommodate all settings, e.g., hospital, home health, etc.); or
    - to increase availability of performance results (if one measure cannot be widely implemented, e.g., if measures based on different data types increase the number of entities for whom performance results are available).
  - Is an additional measure unnecessary?
    - unique developer preferences
- Burden
  - Do the different measures affect interpretability across measures?
  - Does having more than one endorsed measure increase the burden of data collection?

Related Measures

Related measures should be harmonized. Measure harmonization refers to the standardization of specifications for related measures with the same measure focus (e.g., ***influenza immunization*** of patients in hospitals or nursing homes), or related measures with 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 justified (e.g., 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.

NQF staff has been working with the measure developers for a long time on the issue of harmonization and they have encountered several challenges:

- Review and approval of all changes by the developer's technical panel and organizational leadership takes significant time (sometimes months).
- Developers have different approaches and philosophies about measurement.
- Particularly when there are several related measures, determining which version to harmonize to may be difficult.
- Trending data may be affected by changes in specifications.

- There may be disagreement as to what degree of alignment is needed to achieve harmonization.

Guidance for Steering Committees on evaluating and making recommendations related to measure harmonization was approved by the NQF Board in 2010. Ultimately, measures should not be recommended for endorsement unless measures are completely harmonized or the lack of harmonization has been justified (Table 2).

Table 2. Sample Considerations to Justify Lack of Measure Harmonization

Related Measures	Lack of Harmonization	Assess Justification for Conceptual Differences	Assess Justification for Technical Differences
Same measure focus (numerator); different target population (denominator)	Inconsistent measure focus (numerator)	The evidence for the measure focus is different for the different target population so that one measure cannot accommodate both target populations. Evidence should always guide measure specifications.	• Differences in the available data drive differences in the technical specifications for the measure focus. • Effort has been made to reconcile the differences across measures but important differences remain.
Same target population (denominator); different measure focus (numerator)	Inconsistent target population (denominator) and/or exclusions	The evidence for the different measure focus necessitates a change in the target population and/or exclusions. Evidence should always guide measure specifications.	• Differences in the available data drive differences in technical specifications for the target population. • Effort has been made to reconcile the differences across measures but important differences remain.
For any related measures	Inconsistent scoring/ computation	The difference does not affect interpretability or burden of data collection. If it does, it adds value that outweighs any concern regarding interpretability or burden of data collection.	The difference does not affect interpretability or burden of data collection. If it does, it adds value that outweighs any concern regarding interpretability or burden of data collection.

National Quality Forum Cardiovascular Competing Measures

SECONDARY PREVENTION - Anti-platelet agents

Competing Measures **Related measures**

	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
Steward	American Medical Association	National Committee for Quality Assurance	Active Health Management	MN Community Measurement	Centers for Medicare & Medicaid Services	American College of Cardiology Foundation
Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel	The percentage of patients with ischemic vascular disease who currently report taking aspirin and the percentage of patients with ischemic vascular disease who were counseled about the risks and benefits of aspirin.	Percentage of patients with ischemic vascular disease (IVD) that are taking aspirin or an antiplatelet agent	Percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally managed modifiable risk factors (LDL, blood pressure, tobacco-free status, daily aspirin use).	Percentage of acute myocardial infarction (AMI) patients who are prescribed aspirin at hospital discharge	Proportion of adult patients (age 18 or older) who undergo a percutaneous coronary intervention (PCI) and are prescribed aspirin at discharge.
Status	Maintenance review	Maintenance review	Endorsed- not for maintenance in 2010/2011	Maintenance review	Maintenance review	New
Steering Committee Evaluation	Importance: Y 21, N-0 SA: C= 16, P=5, M= 0,N=0 U: C=16, P=5, M=0, N=0 F: C=19, P=2, M=0, N=0 Meets crtieria for endorsement: Yes- 21, No=0	Importance: Y = 21, N =0 SA:C =2, P=14, M=4, N=1 U: C=12, P=7, M=0, N=0 F: C=13, P=7, M=1, N=0 Meets crtieria for endorsement: Yes = 20, No =1		Importance: Y-20, N=0 SA: C=1, P=13, M=5, N=2 U: C=14, P=7, M=0, N=0 F: C=18, P=3, M=0, N=0 Meets crtieria for endorsement if BP target changed to < 140/90: Yes =19, No=1	Importance: Y = 4 , N= 17 Very imortant process of care but measure has little room for improvement – "topped out"	Importance: Y=21, N=0 SA: C=19, P=2, M=0, N=0 U: C=17, P=4, M=0, N=0 F: C=17, P=4, M=0, N=0 Meets criteria for endorsement: Yes= 21, No =0
Differences	Numerator inclusions: aspirin or clopidogrel only Target population: Stable CAD only (needs harmonization of CAD codes as a subset of 0068 and 0076) Exclusions for medical reasons, patient reasons and system reasons Current use: CMS PQRI	Numerator inclusions: Aspirin, clopidogrel; • aspirin-dipyridamole • prasugrel; ticlopidine Target population: Ischemic vascular disease includes peripheral vascular disease and cerebral vascular disease as well as CAD; IVD codes need harmonization with 0076	Based on clinically enriched administrative data – admin data with clinical data from EHR/PHR; larghest list of anti-latelet agents; age ≥ 21 years Current use: In use by plans – not publicly reported	HARMONIZATION: Aspirin component: numerator includes • Aspirin (ASA) • Plavix (clopidogrel) • Ticlid (ticlopidine) • Pravigard (aspirin/pravastatin) • Aggrenox (aspirin/dypyridamole) • Low dose enteric-coated 81	HARMONIZATION: other anit-platelet agents except aspiorin not included; chart abstraction; Age ≥ 18 years Current use: Hospital Compare	HARMONIZATION: Aspirin only – additional measure (1495) for P2Y12 Inhibitors after PCI includes clopidogrel, ticlopidine, or prasugrel Age ≥ 18 years

National Quality Forum Cardiovascular Competing Measures

SECONDARY PREVENTION - Anti-platelet agents

	Competing Measures			Related measures		
	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
	2007, 2008, 2009, 2010 PINNACLE registry Age ≥18 years Retooled for EHRs	With additional harmonization, this measure is a component of composite measure 0076 Exclusions: none Age ≥ 18 years Current use: HEDIS Physician Measurement ; NCQA Heart/Stroke Recognition Program Retooled for EHRs		mg ASA (Ecotrin or Bayer); Needs harmonization of codes for IVD with 0068; Age = 18=75 years Current use:		
Type	Process	Process	Process	Composite	Process	Process
Data Source	Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record; Registry data This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting. URL www.pinnacleregistry.org Attachment PCPI_CAD-6_AntiplateletTherapy NQF 0067.pdf	Paper medical record/flow-sheet; Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record NA	Electronic administrative data/claims; Pharmacy data; Clinically enriched adminstrative data – Level 3	Paper medical record/flow-sheet; Electronic Health/Medical Record; Registry data. Paper abstraction forms are provided All data is uploaded in electronic format (.csv file) to a HIPAA secure, encrypted and password protected data portal. URL www.mncm.org/site/?p=resources URL www.mncm.org/site/?p=resources	Paper medical record/flow-sheet; Electronic Health/Medical Record Centers for Medicare & Medicaid Services (CMS) Abstraction & Reporting Tool (CART). Vendor tools also available. URL http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1135267770141 Section 1 - Data Dictionary | Alphabetical Data Dictionary.	Registry data National Cardiovascular Data Registry (NCDR®) CathPCI Registry® URL http://www.ncdr.com/WebNCDR/ELEMENTS.ASPX URL http://www.ncdr.com/WebNCDR/ELEMENTS.ASPX
Level	Clinicians: Individual; Clinicians: Group	Clinicians: Individual; Clinicians: Group	Can be measured at all levels	Clinicians: Group; Clinicians: Other Clinic site location	Facility/Agency; Population: national; Program: QIO	Facility/Agency
Setting	Home; Ambulatory Care: Office; Ambulatory Care:	Ambulatory Care: Clinic; All settings	Nursing home (NH) /Skilled Nursing Facility (SNF);	Ambulatory Care: Office; Ambulatory Care: Clinic;	Hospital	Hospital; Ambulatory Care: Hospital Outpatient

National Quality Forum Cardiovascular Competing Measures

SECONDARY PREVENTION - Anti-platelet agents

	Competing Measures			Related measures		
	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
	Clinic; Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Hospital Outpatient; Assisted Living; Group homes		Ambulatory Care: Clinic; Other; Dialysis Facility	Ambulatory Care: Hospital Outpatient		
Numerator Statement	Patients who were prescribed aspirin or clopidogrel * within a 12 month period *Prescribed may include prescription given to the patient for aspirin or clopidogrel at one or more visits in the measurement period OR patient already taking aspirin or clopidogrel as documented in current medication list	Use of aspirin or another antithrombotic. Electronic specification: Documentation of use of aspirin or another antithrombotic during the measurement year. Refer to table IVD-D to identify the code for prescribed oral anti-platelet therapy. Refer to Table IVD-E to identify medications for oral anti-platelet therapy. Medical Record Specification: Documentation of use of aspirin or another antithrombotic during the measurement year. At a minimum, documentation in the medical record must include a note indicating the date on which aspirin or another antithrombotic was prescribed or documentation of prescription from another	Patients that are taking aspirin or an antiplatelet agent Time Window: 6 months	Patients ages 18 to 75 with ischemic vascular disease (IVD) who meet all of the following targets from the most recent visit during the measurement period: LDL less than 100, Blood Pressure (two targets) less than 140/90 if patient has co-morbidity of diabetes OR less than 130/80 for all other IVD patients, Tobacco-Free Status, Daily Aspirin Use (unless contraindicated).	AMI patients who are prescribed aspirin at hospital discharge	Count of patients with a PCI procedure with aspirin prescribed at discharge.

National Quality Forum Cardiovascular Competing Measures

SECONDARY PREVENTION - Anti-platelet agents

Competing Measures **Related measures**

	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
		treating physician.				
Numerator Details	Time Window: Once during the measurement period. See attached for EHR Specifications. For Claims/Administrative: Report CPT II Code 4011F: Oral antiplatelet therapy prescribed	Time Window: 12 months Use of aspirin or another antithrombotic. Electronic specification: Documentation of use of aspirin or another antithrombotic during the measurement year. Refer to table IVD-D to identify the code for prescribed oral anti-platelet therapy. Refer to Table IVD-E to identify medications for oral anti-platelet therapy. Medical Record Specification: Documentation of use of aspirin or another antithrombotic during the measurement year. At a minimum, documentation in the medical record must include a note indicating the date on which aspirin or another antithrombotic was prescribed or documentation of prescription from another treating physician.Table IVD-D: Codes to Identify Prescribed Oral Anti-Platelet	Time Window: Anti-platelet agents: spirin, ticlopidine, cilostazol, aggrastat, anagrelide, dip[yramadole, prsnatine, agrylin, ticlid, plavix, aggrenox, pletal, permole, inlegilen, reopro, dipradan, aspre	Time Window: Values are collected as the most recent during the measurement period (January 1 through December 31), with the exception of the LDL value which is collected over a 15 month time span to allow a greater window of time for patients that may not complete a cholesterol test within the 12 month time frame, but do complete a cholesterol test within 15 months (October 1 of the previous year through December 31 of the measurement year). Aspirin Use or Documented Contraindication for the use of aspirin. Aspirin (ASA) Date [Date (mm/dd/yyyy)] Enter the most recent date of documented ASA or anti-platelet prior to and including 12/31/YYYY (measurement period). FYI: any documented date in the measurement period of ASA or an anti-platelet is	Time Window: From hospital arrival to time of hospital discharge Refer to http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: · Section 1 - Data Dictionary	Alphabetical Data Dictionary – pages 1-75 through 1-76. · Appendices	Appendix C - Medication Tables – pages Appendix C-3 through Appendix C-6. · Section 2 - Measurement Information	Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-2-1 through AMI-2-5.	Time Window: 1 year Element Name: Discharge Medications Discharge Medications=aspirin (any) Coding Instructions: Indicate which of the following medications the patient was prescribed upon discharge. Note(s): Complete only for patients who had a PCI procedure attempted or performed during this episode of care. Discharge medications not required for patients who were discharged to "Other acute care hospital","Hospice", or Left against medical advice (AMA)." Element Name: Medication Administered Medication Administered=Yes Coding Instructions: Indicates if the medication was administered, not administered, contraindicated or blinded. Selections:

National Quality Forum Cardiovascular Competing Measures

SECONDARY PREVENTION - Anti-platelet agents

Competing Measures **Related measures**

	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
		Therapy Description CPT Category II ICD-9-CM Diagnosis Oral anti-platelet therapy prescribed 4011F V58.63, V58.66 Table IVD-E: Oral Anti-Platelet Therapies Description Prescription Oral anti-platelet therapies • aspirin • clopidogrel • aspirin-dipyridamole • prasugrel • ticlopidine		acceptable; the date does not need to be the most recent. The following are accepted ASA or anti-platelet medications • Aspirin (ASA) • Plavix (clopidogrel) • Ticlid (ticlopidine) • Pravigard (aspirin/pravastatin) • Aggrenox (aspirin/dypyridamole) • Low dose enteric-coated 81 mg ASA (Ecotrin or Bayer) Other considerations: • Enter the date in which ASA (or other accepted anti-platelet was documented as a current medication (e.g., med reconciliation date). • If there is no documentation of daily ASA or anti-platelet, leave this date field blank. • Do not enter any dates of service after the measurement period. • If the patient is not taking ASA and has a contraindication to ASA, leave this date field blank and enter the contraindication date in the contraindication date field.		No- Medication was not administered or prescribed. Yes- Medication was administered or prescribed. Contraindicated- Medication was not administered because of a contraindication. (Contraindications must be documented explicitly by the physician, clearly evidenced within the medical record.) Blinded- Patient was in a research study or clinical trial and the administration of this specific medication or class of medications is unknown.

National Quality Forum Cardiovascular Competing Measures

SECONDARY PREVENTION - Anti-platelet agents

	Competing Measures			Related measures		
	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
				• Do not count an ASA/narcotic combo medication for the "daily aspirin use" component of the measure whether it is used for temporary or chronic pain. Aspirin (ASA) Contraindication Date [Date (mm/dd/yyyy)] If patient has a documented contraindication to ASA, enter the date of the contraindication. Any valid contraindication date will be given credit. Auditor must be able to validate this date. Accepted contraindications: • Anticoagulant use, Lovenox (Enoxaparin) or Coumadin (Warfarin) • Any history of gastrointestinal (GI)* or intracranial bleed (ICB) • Allergy to ASA *Gastroesophogeal reflux disease (GERD) is not automatically considered a contraindication but may be included if specifically documented as a contraindication by the physician. The following may be exclusions if specifically documented by the physician:		

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				• Use of non-steroidal anti-inflammatory agents • Documented risk for drug interaction • Other provider documented reason for not being on ASA therapy Contraindication date. • If the patient is on an anticoagulant, enter the most recent date.		
Denominator Statement	All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period	Patients 18 years or older as of December 31 of the measurement year discharged alive for AMI, CABG or PCI on or between January 1 and November 1 of the year prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.	All patients, ages 21 and older, diagnosed with IVD as defined by coronary artery disease, peripheral vascular disease or cerebrovascular disease, who are asked about aspirin use Time Window: Anytime in the past	Patients ages 18 to 75 with ischemic vascular disease who have at least two visits for this condition over the last two years (established patient) with at least one visit in the last 12 months.	AMI patients (International Classification of Diseases, 9th revision, Clinical Modification [ICD-9-CM] principal diagnosis code of AMI: 410.00, 410.01, 410.10, 410.11, 410.20, 410.21, 410.30, 410.31, 410.40, 410.41, 410.50, 410.51, 410.60, 410.61, 410.70, 410.71, 410.80, 410.81, 410.90, 410.91)	Count of patients with a PCI procedure
Denominator Categories	Female; Male Aged 18 years and older	Female; Male 18 years of age and older		Female; Male Ages 18 to 75 during the measurement period	Female; Male Greater than or equal to 18 years old	Female; Male All patients >= 18 years of age.
Denominator Details	Time Window: 12 consecutive months See attached for EHR	Time Window: From January 1st of the year prior to the measurement year through December 31st of	Time Window: See attachment	Time Window: Patients with ischemic vascular disease (IVD) with two or more visits with IVD codes in the last two	Time Window: From hospital arrival to time of hospital discharge	Time Window: 1 year Element name: PCI PCI=Yes

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	Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)	the measurement year. Patients 18 years or older as of December 31 of the measurement year. Patient inclusion criteria: For physician assessment with generated from a health plan: continuous medical benefit enrollment for the measurement year, with no more than one gap in continuous enrollment of up to 45 days during the measurement year. To determine continuous enrollment for a Medicaid beneficiary for whom enrollment is verified monthly, there may not be more than a 1-month gap in coverage during each year of continuous enrollment. The patient must be enrolled as of December 31 of the measurement year. For physician assessment from data that comes from a non-health plan: Any enrollment, claim or encounter transaction any time during the		years and at least one visit in the last 12 months. Medical groups perform the visit count and exclusions prior to file creation (excluded patients are not submitted in the direct data submission file). MNCM requires an upfront denominator certification process to ensure that the medical group is identifying the population correctly. Data collection or extraction cannot occur prior to MNCM approval of the denominator. Birth date [Date (mm/dd/yyyy)] Ischemic vascular disease ICD-9 codes: 410 – 410.92 Acute Myocardial Infarction (AMI) 411 – 411.89 Post Myocardial Infarction Syndrome 412 Old AMI 413 – 413.9 Angina Pectoris 414.0 – 414.07 Coronary Arthrosclerosis 414.2 Chronic Total Occlusion of Coronary Artery 414.8 Other Chronic Ischemic Heart Disease (IHD) 414.3 Atherosclerosis due to	ICD-9-CM Principal Diagnosis codes: 410.00: Anterolateral wall, acute myocardial infarction-episode of care unspecified 410.01: Anterolateral wall, acute myocardial infarction-initial episode 410.10: Other anterior wall, acute myocardial infarction-episode of care unspecified 410.11: Other anterior wall, acute myocardial infarction-initial episode 410.20: Inferolateral wall, acute myocardial infarction-episode of care unspecified 410.21: Inferolateral wall, acute myocardial infarction-initial episode 410.30: Inferoposterior wall, acute myocardial infarction-episode of care unspecified 410.31: Inferoposterior wall, acute myocardial infarction-initial episode 410.40: Other inferior wall, acute myocardial infarction-episode of care unspecified 410.41: Other inferior wall, acute myocardial infarction-initial episode	Coding Instructions: Indicate if the patient had a percutaneous coronary intervention (PCI). Selections: No/Yes Supporting Definitions: PCI:A percutaneous coronary intervention (PCI) is the placement of an angioplasty guide wire, balloon, or other device (e.g. stent, atherectomy, brachytherapy, or thrombectomy catheter) into a native coronary artery or coronary artery bypass graft for the purpose of mechanical coronary revascularization.Source: NCDR

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Competing Measures **Related measures**

	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
		measurement year. Event/diagnosis Event. Discharged alive for AMI, CABG or PCI on or between January 1 and November 1 of the year prior to the measurement year. Use the codes listed in Table IVD-A to identify AMI, PCI and CABG. AMI and CABG cases should be from inpatient claims only. All cases of PCI should be included, regardless of setting (e.g., inpatient, outpatient, ED). Diagnosis. Identify patients as having IVD who met at least one of the two criteria below, during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years. •At least one outpatient visit (Table IVD-C) with an IVD diagnosis (Table IVD-B), or •At least one acute inpatient visit (Table IVD-C) with an IVD diagnosis (Table IVD-B) Medical record data:		lipid rich plaque 414.9 Chronic IHD 429.2 Cardiovascular (CV) disease, unspecified 433 – 433.91 Occlusion and stenosis of pre-cerebral arteries 434 – 434.91 Occlusion of cerebral arteries 440.1 Atherosclerosis of renal artery 440.2 – 440.29 Atherosclerosis of native arteries of the extremities, unspecified 440.4 Chronic Total Occlusion of Artery of the Extremities 444 – 444.9 Arterial embolism and thrombosis 445 - 445.8 Atheroembolism	410.50: Other lateral wall, acute myocardial infarction-episode of care unspecified 410.51: Other lateral wall, acute myocardial infarction-initial episode 410.60: True posterior wall, acute myocardial infarction-episode of care unspecified 410.61: True posterior wall, acute myocardial infarction-initial episode 410.70: Subendocardial, acute myocardial infarction-episode of care unspecified 410.71: Subendocardial, acute myocardial infarction-initial episode 410.80: Other specified sites, acute myocardial infarction-episode of care unspecified 410.81: Other specified sites, acute myocardial infarction-initial episode 410.90: Unspecified site, acute myocardial infarction-episode of care unspecified 410.91: Unspecified site, acute myocardial infarction-initial episode	

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	Competing Measures			Related measures		
	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
		Documentation of IVD in the medical record includes: •IVD •Ischemic heart disease •Angina •Coronary atherosclerosis •Coronary artery occlusion •Cardiovascular disease •Occlusion or stenosis of precerebral arteries (including basilar, carotid and vertebral arteries) •Atherosclerosis of renal artery •Atherosclerosis of native arteries of the extremities •Chronic total occlusion of artery of the extremities •Arterial embolism and thrombosis •Atheroembolism. Note: Use paper logs, patient registries or EMRs to identify the denominator, then use the medical record to confirm patient eligibility. Table IVD-A: Codes to Identify AMI, PCI and CABG Description CPT HCPCS ICD-9-CM Diagnosis ICD-9-CM Procedure AMI (inpatient only) 410.x1				

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		CABG (inpatient only) 33510-33514, 33516-33519, 33521-33523, 33533-33536 S2205-S2209 36.1, 36.2 PCI 92980, 92982, 92995 G0290 00.66, 36.06, 36.07 Table IVD-B: Codes to Identify IVD Description ICD-9-CM Diagnosis IVD 411, 413, 414.0, 414.2, 414.8, 414.9, 429.2, 433, 434, 440.1, 440.2, 440.4, 444, 445 Table IVD-C: Codes to Identify Visit Type Description CPT UB Revenue Outpatient 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456 051x, 0520-0523, 0526-0529, 057x-059x, 0982, 0983 Acute inpatient 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99261-99263, 99291 010x, 0110-0114, 0119,				

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		0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x-021x, 072x, 0987Medical record text Coronary artery disease Stable angina Lower extremity arterial disease/peripheral artery disease Ischemia Stroke Artheroembolism Renal artery atherosclerosis				
Exclusions	Documentation of medical reason(s) for not prescribing aspirin or clopidogrel (eg, allergy, intolerant, receiving other thienopyridine therapy, bleeding coagulation disorders, receiving warfarin therapy, other medical reasons) Documentation of patient reason(s) for not prescribing aspirin or clopidogrel (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing aspirin or clopidogrel (eg,	None	Patients with contraindications to antithrombotic agents such as thrombocytopenia, coagulopathy, recent procedures, or current warfarin therapy General exclusions: • Evidence of metastatic disease or active treatment of malignancy (chemotherapy or radiation therapy) in the last 6 months; • Patients who have been in a skilled nursing facility in the last 3 months	Valid exclusions include patients who only had one coded visit to the clinic during the last two years, patients who had died during the measurement period, patients who were in hospice during the measurement period, patients who were permanent nursing home residents during the measurement period, or patients who were coded with IVD in error.	Exclusions: •<18 years of age •Patients who have a length of stay greater than 120 days •Patients enrolled in clinical trials •Discharged to another hospital •Expired •Left against medical advice •Discharged to home for hospice care •Discharged to a health care facility for hospice care •Patients with comfort measures only documented • Patients with a documented	-Aspirin coded as contraindicated or blinded -Discharge status of deceased -Discharge location of “other acute care hospital”, “hospice” or “against medical advice”.

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Competing Measures **Related measures**

	0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	0631 Secondary Prevention of Cardiovascular Events - Use of Aspirin or Antiplatelet Therapy	0076 Optimal Vascular Care	0142 Aspirin prescribed at discharge for AMI	1493 Aspirin at discharge for patients with Percutaneous Coronary Intervention (PCI)
	lack of drug availability, other reasons attributable to the health care system)		• Patient or provider feedback indicating allergy or intolerance to the drug in the past • Patient or provider feedback indicating that there is a contraindication to adding the drug		reason for no aspirin at discharge	
Exclusion Details	See attached for EHR Specifications. For Claims/Administrative: Documentation of medical reason(s) for not prescribing aspirin or clopidogrel • Append modifier to CPT II code 4011F-1P (in development) Documentation of patient reason(s) for not prescribing aspirin or clopidogrel • Append modifier to CPT II code 4011F-2P (in development) Documentation of system reason(s) for not prescribing aspirin or clopidogrel • Append modifier to CPT II code 4011F-3P (in development)	None	See attachment	Patient was a permanent nursing home resident home during the measurement period Patient was in hospice at any time during the measurement period Patient died prior to the end of the measurement period Documentation that diagnosis was coded in error	Refer to http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: · Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-20 through 1-21, 1-69 through 1-71, 1-90, 1-98 through 1-104, 1-117, 1-118 through 1-120, 1-204, and 1-321 through 1-323. · Appendices | Appendix C - Medication Tables PDF – pages Appendix C-3 through Appendix C-6 plus Appendix C-9, and Appendix H - Miscellaneous Tables – page Appendix H-5. · Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus	Element name: Discharge Status Discharge status=deceased Coding Instructions: Indicate whether the patient was alive or deceased at discharge. Selections: Alive/Deceased Element name: Discharge Location Discharge location="other acute hospital","hospice", or "left against medical advice" Coding Instructions: Indicate the location to which the patient was discharged. Selections: -Home -Extended care/TCU/rehabilitation -Other acute care hospital -Nursing home -Hospice

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					AMI-2-1 through AMI-2-5.	-Other Left against medical advice (The patient was discharged or eloped against medical advice.) Medication Administered=contraindicated or blinded Name: Medication Administered Coding Instructions: Indicates if the medication was administered, not administered, contraindicated or blinded. Selections: No- Medication was not administered or prescribed. Yes- Medication was administered or prescribed. Contraindicated- Medication was not administered because of a contraindication. (Contraindications must be documented explicitly by the physician, or clearly evidenced within the medical record.) Blinded- Patient was in a research study or clinical trial and the administration of this specific medication or class of

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						medications is unknown.
Risk Adjustment	no risk adjustment necessary	no risk adjustment necessary NA		case-mix adjustment Risk adjustment for this measure is based on case mix (health plan product). Health plan product was selected because it can serve as a proxy for socioeconomic status, if more specific variables are not available. Socioeconomic status can be a variable in a patient's ability to comply with a treatment plan for achieving the intermediate outcomes that can postpone or prevent the long term complications of cardiovascular disease. The overall average state-wide distribution of patients across three major insurance types (Commercial, Medicare and MN Healthcare Programs plus Self-pay/Uninsured) is calculated and then each reporting site's patient distribution is adjusted to match the average mix. Rates are re-weighted based on the new distribution of patients and then rates are re-calculated. Background and Evolution of	no risk adjustment necessary N/A	no risk adjustment necessary N/A

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				Risk Adjustment: MN Community Measurement has been publicly reporting unadjusted ambulatory outcome rates at the clinic site level for several years dating back to 2004. Currently, the lowest level of reporting is at the clinic site and we do not publicly report any practitioner level information. As our state begins moving towards utilizing cost and quality measures to demonstrate value and utilizing these measures for incentive based payment and tiering by health plans, we began to explore risk adjustment of measures used for these purposes. Our subcommittee of the Board of Directors, the Measurement and Reporting Committee (MARC) has reviewed several methods for risk adjusting these measures. Part of their discussion included the potential use of the risk adjusted measures for public reporting to consumers on our MN HealthScores website. The group agreed that risk		

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				adjustment would be more beneficial for tiering and incentive based programs and that there was value in reporting the unadjusted clinic site level rate for consumers for the following reasons: rates reflect actual performance, confusion for consumers in terms of explaining risk adjustment or displaying two rates (adjusted and unadjusted), or creating a mindset that it is acceptable for patients in public programs to have different treatment standards than those with commercial insurance. There are no current plans to report risk adjusted data on our consumer facing website; however we will provide both adjusted and unadjusted clinic site level rates on our corporate website (pdf format). Attachment MNCM Case Mix Risk Adjustment June 2010-634242034150216836.docx		
Stratification		None		The ischemic vascular disease population is not currently stratified when publicly reported on MNCM's consumer	N/A	N/A

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				website, MN HealthScores. MNCM does collect the following fields that will allow for future stratification: Insurance coverage code (used to determine public and private purchasers): from list of MNCM-designated codes [number] Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID [text] Date of birth: [MM/DD/YYYY] Race/ethnicity: from list of MNCM-designated codes [number] Primary language: from list of MNCM-designated codes [number] Country of origin: from list of MNCM-designated codes [number] Zip code: 5-digit zip code of patient [text] Gender: M (male), F (female), U (unknown) [text] Co-morbidity of diabetes: 1 (yes), 2 (no) [number] Co-morbidity of depression: 1 (yes), 2 (no) [number]		

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Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score		Weighted score/composite/scale better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	See attached for calculation algorithm.	NA		If any component of the numerator is noncompliant for any one of the four components, then the patient is numerator noncompliant for the composite. Is Aspirin Date in the measurement period? OR, Is Aspirin Contraindication Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable. If all of the above numerator components are compliant, then the patient is calculated as a numerator case for the optimal vascular care measure.	Refer to http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-2-1 through AMI-2-5.	Denominator calculation: 1. Count of patients with arrival/discharge dates from data submissions that pass NCDR data inclusion thresholds 2. Exclude patients with arrival/discharge dates without PCI during episode 3. Exclude patients with discharge status=deceased 4. Exclude patients with Discharge Location: Other acute care hospital 5. Exclude patients with Discharge Location: Left against medical advice 6. Exclude patients with Discharge Location: Hospice 7. Exclude patients with Aspirin at discharge: contraindicated or blinded Numerator calculation: 8. From denominator population, count of patients with Discharge medication of aspirin=yes Calculation of score: 9. Numerator

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						count/Denominator count

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SECONDARY PREVENTION: lipid control

	0074 Chronic Stable Coronary Artery Disease: Lipid Control	0075 IVD: Complete Lipid Profile and LDL Control <100	0076 Optimal Vascular Care	0611 Hyperlipidemia (Primary Prevention) - Lifestyle Changes and/or Lipid Lowering Therapy	0636 Atherosclerotic Disease and LDL Greater than 100 - Use of Lipid Lowering Agent
Steward	American Medical Association	National Committee for Quality Assurance	MN Community Measurement	Active Health Management	Active Health Mangement
Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who have a LDL-C result <100 mg/dL OR patients who have a LDL-C result >=100 mg/dL and have a documented plan of care to achieve LDL-C <100mg/dL, including at a minimum the prescription of a statin	The percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) from January 1–November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to measurement year, who had each of the following during the measurement year. • Complete Lipid Profile • LDL-C control <100 mg/dL	Percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally managed modifiable risk factors (LDL, blood pressure, tobacco-free status, daily aspirin use).	Percentage of patients with coronary artery disease risk factors who have an elevated LDL and who have initiated therapeutic lifestyle changes or are taking a lipid lowering agent	Percentage of adult patients with atherosclerotic disease and an LDL greater than 100 that are taking a lipid lowering agent
Status	Maintenance review	Maintenance review	Maintenance review	Endorsed – not under review	Endorsed – not under review
Steering Committee Evaluation	Importance: Yes=11, No=5 SA: C=16 U: C=15, P=1 F: C=16 Meets criteria for endorsement: Yes=16, No=0	Importance: Yes=7, No=6 SA: C=6, P=6, M=4 U: C=5, P=9, M=1 F: C=12, P=4 Meets criteria for endorsement: Yes = 15, No =1	Importance: Y-20, N=0 SA: C=1, P=13, M=5, N=2 U: C=14, P=7, M=0, N=0 F: C=18, P=3, M=0, N=0 Meets crtieria for endorsement if BP target changed to < 140/90: Yes =19, No=1		
Differences	Mixed process and outcome measure; limited to patients with CAD; age ≥ 18 years; target values aligned; retooled for EHRs	Outcome measure; target values aligned; includes all IVD including PAD and CVD as well as CAD; age > 18 years; retolled for EHRs; no exclusions; with additiohnal harmonization this is a compnent of 0076	Composite measure with mix of process and outcomes measures; includes all IVD including PAD and CVD as well as CAD; lipid target aligned; Age 18-75 years –others are ≥18 years	Clinically enriched adminstrative data ; Can be measured at all levels, including plans and systems as well as clinicians; lipid targets aligned; age aligned	Clinically enriched adminstrative data ; Can be measured at all levels, including plans and systems as well as clinicians; lipid targets aligned

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SECONDARY PREVENTION: lipid control

	0074 Chronic Stable Coronary Artery Disease: Lipid Control	0075 IVD: Complete Lipid Profile and LDL Control <100	0076 Optimal Vascular Care	0611 Hyperlipidemia (Primary Prevention) - Lifestyle Changes and/or Lipid Lowering Therapy	0636 Atherosclerotic Disease and LDL Greater than 100 - Use of Lipid Lowering Agent
Type	Process and intermediate outcome	Intermediate outcome	Composite	Intermediate outcome with embedded process response	Intermediate outcome with embedded process response
Data Source	Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record; Registry data This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting. URL www.pinnacleregistry.org Attachment PCPI_CAD-2_LipidControl NQF 0074.pdf	Paper medical record/flow-sheet; Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record; Lab data NA	Paper medical record/flow-sheet; Electronic Health/Medical Record; Registry data Paper abstraction forms are provided All data is uploaded in electronic format (.csv file) to a HIPAA secure, encrypted and password protected data portal. URL www.mncm.org/site/?p=resources URL www.mncm.org/site/?p=resources	Electronic administrative data/claims; Pharmacy data; Lab data; Clinicially enriched admin data – Level 3	Electronic administrative data/claims; Pharmacy data; Lab data Clinically enriched admin data – Level 3
Level	Clinicians: Individual; Clinicians: Group	Clinicians: Individual; Clinicians: Group	Clinicians: Group; Clinicians: Other Clinic site location	Can be measured at all levels	Can be measured at all levels
Setting	Home; Ambulatory Care: Office; Ambulatory Care: Clinic; Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Hospital Outpatient; Assisted Living; Group homes	Ambulatory Care: Clinic; All settings	Ambulatory Care: Office; Ambulatory Care: Clinic; Ambulatory Care: Hospital Outpatient	Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Clinic; Other	Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Clinic; Other
Numerator Statement	Patients who have a LDL-C result <100 mg/dL OR Patients who have a LDL-C result >=100 mg/dL and have a documented plan of care1 to achieve LDL-C <100 mg/dL, including at a minimum the prescription of a statin within a 12 month period Definitions:	A complete lipid profile performed during the measurement year. A LDL-C control result of <100mg/dL using the most recent LDL-C screening test during the measurement year.	Patients ages 18 to 75 with ischemic vascular disease (IVD) who meet all of the following targets from the most recent visit during the measurement period: LDL less than 100, Blood Pressure (two targets) less than 140/90 if patient has co-morbidity of diabetes OR less than 130/80 for all other IVD patients, Tobacco-Free Status, Daily	Patients who have initiated therapeutic lifestyle changes or that are taking a lipid lowering agent Time Window: A drug day-supply that extends within 30 days of the measurement date	Patients with a current refill for a lipid lowering agent Time Window: A drug day-supply that extends within 30 days of the measurement date

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SECONDARY PREVENTION: lipid control

	0074 Chronic Stable Coronary Artery Disease: Lipid Control	0075 IVD: Complete Lipid Profile and LDL Control <100	0076 Optimal Vascular Care	0611 Hyperlipidemia (Primary Prevention) - Lifestyle Changes and/or Lipid Lowering Therapy	0636 Atherosclerotic Disease and LDL Greater than 100 - Use of Lipid Lowering Agent
	*Documented plan of care may also include: documentation of discussion of lifestyle modifications (diet, exercise); scheduled re-assessment of LDL-C *Prescribed may include prescription given to the patient for a statin at one or more visits in the measurement period OR patient already taking a statin as documented in current medication list Numerator Instructions: The first numerator option can be reported for patients who have a documented LDL-C < 100 mg/dL at any time during the measurement period.		Aspirin Use (unless contraindicated). Please note: On 7/27/2010, the blood pressure component of this measure was changed for patients with a co-morbidity of diabetes (target less than 140/90). MNCM's technical advisory group recommended this changed based on ACCORD results, ICSI's most recent guideline changes (July 2010), and the national meaningful use measures for diabetes blood pressure control. A target of less than 140/90 allows for individualization of patient goals.		
Numerator Details	Time Window: See attached for EHR Specifications. For Claims/Administrative: Report CPT II Code Patients who have LDL-C <100 mg/dL 3048F Most recent LDL-C <100 mg/dL OR Patients who have LDL-C =100 mg/dL and have a documented plan of care to achieve LDL-C <100 mg/dL, including prescription of lipid-lowering therapy	Time Window: 12 months Electronic Specification: Complete Lipid Profile: A complete lipid profile performed during the measurement year (table IVD-F) as identified by claim/encounter or electronic laboratory data. LDL-C Control: <100mg/dL Use electronic laboratory data during the measurement year. Calculate a numerator by using the most recent LDL-C screening test. Use the CPT Category II codes in Table CMC-E to determine compliance. The patient is non	Time Window: Values are collected as the most recent during the measurement period (January 1 through December 31), with the exception of the LDL value which is collected over a 15 month time span to allow a greater window of time for patients that may not complete a cholesterol test within the 12 month time frame, but do complete a cholesterol test within 15 months (October 1 of the previous year through December 31 of the measurement year).	Time Window: See attachment	Time Window: See attachment

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	• 3049F Most recent LDL-C 100-129 mg/dL OR • 3050F Most recent LDL-C greater than or equal to 130 mg/dL AND • 05XXF (code in development) Lipid lowering therapy plan of care documented AND • 4002F Statin therapy prescribed	compliant if: the electronic results for the most recent LDL-C test exceeds the desired threshold, the electronic result for the most recent LDL-C test is missing or an LDL-C test was not done during the measurement year. Medical Record Specification: Complete Lipid Profile: A full lipid profile completed during the measurement year, with the date and result of each component of the profile documented. Identify the most recent visit ot the doctor´s office or clinic where a full lipid profile was documented and which occurred during the measurement year (but after the diagnosis of IVD was made). Each component of the lipid profile must be noted with the date of the test and results. LDL Control <100: The number of patients in the denominator whose LDL-C is adequately controlled during the measurement year. Use the most recent LDL-C level performed during the measurement year. At a minimum documentation in the record must include a note indicating the date when the test was performed and the result.Table IVD-F: Codes to Identify a Complete Lipid Profile Description CPT CPT Category II Lipid panel 80061 3011F	LDL Date [Date (mm/dd/yyyy)] AND LDL Value [Numeric] Numerator calculation: numerator compliant is LDL during the last 15 months AND LDL value is less than 100. Enter the date of the most recent LDL test prior to and including 12/31/YYYY (measurement period). Enter the value of the most recent LDL test prior to and including 12/31/ YYYY (measurement period). Other considerations: • If an LDL was never performed, leave the date field blank. • Do not enter any test dates after the measurement period. • Test from an outside referring provider or specialist is acceptable (not required) but only if documented in the primary clinic's record and is more recent than the primary clinic's test. • Elevated Triglyceride: If LDL is "too high to calculate," enter the LDL date field and leave the LDL		

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		OR Description CPT LOINC Total cholesterol 82465 2093-3, 14647-2 WITH High density lipoprotein (HDL) 83701 2085-9, 14646-4, 18263-4 AND Triglycerides 84478 2571-8, 12951-0, 14927-8, 47210-0 Table CMC-E: CPT category II codes to identify LDL-C levels LDL-C<100: 3048F LDL-C 100-129: 3049F LDL-C>=130: 3050F			
Denominator Statement	All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period	Patients 18 years of age an older as of December 31st of the measurement year who were discharged alive for AMI, CABG or PCI on or between January 1 and November 1 of the year prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.	Patients ages 18 to 75 with ischemic vascular disease who have at least two visits for this condition over the last two years (established patient) with at least one visit in the last 12 months.	All patients, ages 18 and older, with coronary artery disease risk factors who have an elevated LDL Time Window: 12 months	All patients diagnosed with atherosclerotic disease and an LDL level above 100 mg/dL Time Window: All available historical data for the presence of atherosclerotic disease and 3 months for LDL
Denominator Categories	Female; Male Aged 18 years and older	Female; Male 18 years and older	Female; Male Ages 18 to 75 during the measurement period	All patients, ages 18 and older	
Denominator Details	Time Window: 12 consecutive months See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-	Time Window: Between January 1 of the year prior to the measurement year and December 31st of the measurement year. Patients 18 years or older as of December 31 of the measurement year who met the following patient	Time Window: Patients with ischemic vascular disease (IVD) with two or more visits with IVD codes in the last two years and at least one visit in the last 12 months. Medical groups perform the visit count and exclusions prior to file creation (excluded	Time Window: Coronary artery disease risk factors who have an elevated LDL See attachment	Time Window: Atherosclerotic disease and an LDL level above 100 mg/dL See attachment

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SECONDARY PREVENTION: lipid control

	0074 Chronic Stable Coronary Artery Disease: Lipid Control	0075 IVD: Complete Lipid Profile and LDL Control <100	0076 Optimal Vascular Care	0611 Hyperlipidemia (Primary Prevention) - Lifestyle Changes and/or Lipid Lowering Therapy	0636 Atherosclerotic Disease and LDL Greater than 100 - Use of Lipid Lowering Agent
	CM, CPT)	inclusion criteria: For data on physician performance generated from a health plan: Continuous medical benefit enrollment for the measurement year, with no more than one gap in continuous enrollment of up to 45 days during the measurement year. To determine continuous enrollment for a Medicaid beneficiary for whom enrollment is verified monthly, there may not be more than a 1-month gap in coverage during each year of continuous enrollment. The patient must be enrolled as of December 31 of the measurement year. For data on physician performance generated from non-health plan data: Any enrollment, claim or encounter transaction any time during the measurement year. Event/ diagnosis: Event. Discharged alive for AMI, CABG or PCI on or between January 1 and November 1 of the year prior to the measurement year. Use the codes listed in Table IVD-A to identify AMI, PCI and CABG. AMI and CABG cases should be from inpatient claims only. All cases of PCI should be included, regardless of setting (e.g., inpatient, outpatient, ED). Diagnosis. Identify patients as having IVD who met at least one of the two criteria below, during both the measurement year and the year	patients are not submitted in the direct data submission file). MNCM requires an upfront denominator certification process to ensure that the medical group is identifying the population correctly. Data collection or extraction cannot occur prior to MNCM approval of the denominator. Birth date [Date (mm/dd/yyyy)] Ischemic vascular disease ICD-9 codes: 410 – 410.92 Acute Myocardial Infarction (AMI) 411 – 411.89 Post Myocardial Infarction Syndrome 412 Old AMI 413 – 413.9 Angina Pectoris 414.0 – 414.07 Coronary Arthrosclerosis 414.2 Chronic Total Occlusion of Coronary Artery 414.8 Other Chronic Ischemic Heart Disease (IHD) 414.3 Atherosclerosis due to lipid rich plaque 414.9 Chronic IHD 429.2 Cardiovascular (CV) disease, unspecified 433 – 433.91 Occlusion and stenosis of pre-cerebral arteries 434 – 434.91 Occlusion of cerebral arteries 440.1 Atherosclerosis of renal		

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		prior to the measurement year. Criteria need not be the same across both years. • At least one outpatient visit (Table IVD-C) with an IVD diagnosis (Table IVD-B), or • At least one acute inpatient visit (Table IVD-C) with an IVD diagnosis (Table IVD-B) Medical record data Documentation of IVD in the medical record includes: • IVD • Ischemic heart disease • Angina • Coronary atherosclerosis • Coronary artery occlusion • Cardiovascular disease • Occlusion or stenosis of precerebral arteries (including basilar, carotid and vertebral arteries) • Atherosclerosis of renal artery • Atherosclerosis of native arteries of the extremities • Chronic total occlusion of artery of the extremities • Arterial embolism and thrombosis • Atheroembolism. Note: Use paper logs, patient registries or EMRs to identify the denominator, then use the medical record to confirm patient eligibility. Exclusions None. Table IVD-A: Codes to Identify AMI, PCI and CABG	artery 440.2 – 440.29 Atherosclerosis of native arteries of the extremities, unspecified 440.4 Chronic Total Occlusion of Artery of the Extremities 444 – 444.9 Arterial embolism and thrombosis 445 - 445.8 Atheroembolism		

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		Description CPT HCPCS ICD-9-CM Diagnosis ICD-9-CM Procedure AMI (inpatient only) 410.x1 CABG (inpatient only) 33510-33514, 33516-33519, 33521-33523, 33533-33536 S2205-S2209 36.1, 36.2 PCI 92980, 92982, 92995 G0290 00.66, 36.06, 36.07 Table IVD-B: Codes to Identify IVD Description ICD-9-CM Diagnosis IVD 411, 413, 414.0, 414.2, 414.8, 414.9, 429.2, 433, 434, 440.1, 440.2, 440.4, 444, 445 Source: Table CMC-B in Cholesterol Management for Patients With Cardiovascular Conditions. Table IVD-C: Codes to Identify Visit Type Description CPT UB Revenue Outpatient 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456 051x, 0520-0523, 0526-0529, 057x-059x, 0982, 0983 Acute inpatient 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99261-99263, 99291 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x-021x, 072x, 0987			

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	0074 Chronic Stable Coronary Artery Disease: Lipid Control	0075 IVD: Complete Lipid Profile and LDL Control <100	0076 Optimal Vascular Care	0611 Hyperlipidemia (Primary Prevention) - Lifestyle Changes and/or Lipid Lowering Therapy	0636 Atherosclerotic Disease and LDL Greater than 100 - Use of Lipid Lowering Agent
Exclusions	Documentation of medical reason(s) for not prescribing a statin (eg, allergy, intolerance to statin medication(s), other medical reasons) Documentation of patient reason(s) for not prescribing a statin (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing a statin (eg, financial reasons, other system reasons)	None	Valid exclusions include patients who only had one coded visit to the clinic during the last two years, patients who had died during the measurement period, patients who were in hospice during the measurement period, patients who were permanent nursing home residents during the measurement period, or patients who were coded with IVD in error.	1. Specific exclusions: • Presence of TSH Labs Result Value > 10 In the past 6 Months • Presence of NEPHROTIC SYNDROME in past 12 months • CAD Validation is confirmed • Diabetes Validation is confirmed • PAD Validation is confirmed • AAA in the past • Carotid endarterectomy in the past General exclusions: • Evidence of metastatic disease or active treatment of malignancy (chemotherapy or radiation therapy) in the last 6 months; • Patients who have been in a skilled nursing facility in the last 3 months For add a drug CCs only • Patient or provider feedback indicating allergy or intolerance to the drug in the past • Patient or provider feedback indicating that there is a contraindication to adding the drug	1. Specific exclusions: Presence of Patient Data Confirming provider made a change to their lipid treatment plan in the past 6 month General exclusions: • Evidence of metastatic disease or active treatment of malignancy (chemotherapy or radiation therapy) in the last 6 months; • Patients who have been in a skilled nursing facility in the last 3 months • Patient or provider feedback indicating allergy or intolerance to the drug in the past • Patient or provider feedback indicating that there is a contraindication to adding the drug
Exclusion Details	See attached for EHR Specifications. For Claims/Administrative: Documentation of medical reason(s) for not prescribing a statin (eg, allergy, intolerance to statin medication(s), other medical reasons)	None	Patient was a permanent nursing home resident home during the measurement period Patient was in hospice at any time during the measurement period Patient died prior to the end of the measurement period	See attachment	See attachment

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	• Append modifier to CPT II code 4XXXF-1P (in development) Documentation of patient reason(s) for not prescribing a statin (eg, patient declined, other patient reasons) • Append modifier to CPT II code 4XXXF-2P (in development) Documentation of system reason(s) for not a statin (eg, financial reasons, other system reasons) • Append modifier to CPT II code 4XXXF-3P (in development)		Documentation that diagnosis was coded in error		
Risk Adjustment	no risk adjustment necessary	no risk adjustment necessary NA	case-mix adjustment Risk adjustment for this measure is based on case mix (health plan product). Health plan product was selected because it can serve as a proxy for socioeconomic status, if more specific variables are not available. Socioeconomic status can be a variable in a patient's ability to comply with a treatment plan for achieving the intermediate outcomes that can postpone or prevent the long term complications of cardiovascular disease. Attachment MNCM Case Mix Risk Adjustment June 2010-634242034150216836.docx		

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Stratification		NA	The ischemic vascular disease population is not currently stratified when publicly reported on MNCM's consumer website, MN HealthScores. MNCM does collect the following fields that will allow for future stratification: Insurance coverage code (used to determine public and private purchasers): from list of MNCM-designated codes [number] Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID [text] Date of birth: [MM/DD/YYYY] Race/ethnicity: from list of MNCM-designated codes [number] Primary language: from list of MNCM-designated codes [number] Country of origin: from list of MNCM-designated codes [number] Zip code: 5-digit zip code of patient [text] Gender: M (male), F (female), U (unknown) [text] Co-morbidity of diabetes: 1 (yes), 2 (no) [number] Co-morbidity of depression: 1 (yes), 2 (no) [number]		
Type Score	Rate/proportion better quality	Rate/proportion better quality =	Weighted score/composite/scale		

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	= higher score	higher score	better quality = higher score		
Algorithm	See attached for calculation algorithm.	NA	This measure is calculated by submitting a file of individual patient values (e.g. blood pressure, LDL value, etc) to a HIPAA secure data portal. Programming within the data portal determines if each patient is a numerator case and then a rate is calculated for each clinic site. If any component of the numerator is noncompliant for any one of the four components, then the patient is numerator noncompliant for the composite all or none optimal vascular care measure.		

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	0624 Atrial Fibrillation - Warfarin Therapy	1525 Chronic Anticoagulation Therapy
Steward	Active Health	American College of Cardiology Foundation/ American Heart Association/American Medical Association´s Physician Consortium for Performance Improvement
Description	Percentage of adult patients with atrial fibrillation and major stroke risk factors on warfarin	Prescription of warfarin for all patients with nonvalvular atrial fibrillation or atrial flutter at high risk for thromboembolism.
Status	Endorsed – not under review	New measure
Differences	Based on claims data (encounter and pharmacy) Multiple levels of analysis Captures medication dispensed Contraindications to warfarin as exclusions Includes nonvalvular and mitral valve disease assicated a-fib; not atrial flutter Addiing dabigitran In use - current performance: 86% (3M patient chohort)	Medical records/EHRs; Claims using CPT II codes Clinician-level Captures medications prescribed Excludes contraindications and patient or medical reasons Includes nonvalvular a-fib and a-flutter Developer response pending on inclusion of dabigtran PINNACLE 2009-2010 aggregate performance 38-40% (two cohorts of 6000 patients)
Type	Process	Process
Data Source	Electronic administrative data/claims; Pharmacy data	Paper medical record/flow-sheet; Electronic clinical data; Electronic Health/Medical Record; Registry data ACCF PINNACLE Registry URL Journal- see Appendix E http://content.onlinejacc.org/cgi/content/full/51/8/865 https://www.pinnacleregistry.org/Documents/PINNACLE_DataCollectionForm_1.2.pdf Journal- see Appendix E URL https://www.pinnacleregistry.org/Documents/PINNACLE_DataCollectionForm_1.2.pdf
Level	Can be measured at all levels	Clinicians: Individual
Setting	Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Clinic; Other	Ambulatory Care: Office; Ambulatory Care: Clinic
Numerator Statement	Patients with claims evidence of warfarin use Time Window: A drug day-supply that extends within 30 days of the measurement date; ICD9 claims for warfarin use in the past	All patients with nonvalvular atrial fibrillation or atrial flutter at high risk of thromboembolism (i.e., those with any high-risk factor or more than 1 moderate-risk factor) for whom warfarin was prescibed. Low risk: No risk factors; Asprin 81 to 325 mg daily Intermediate risk: One moderate-risk factor; Aspirin 81 mg to 325 mg daily or warfarin (INR 2.0 to 3.0, target 2.5) High risk: Any high risk-factor or more than 1 moderate-risk factor; Warfarin (INR 2.0 to 3.0, target 2.5)
Numerator Details	Time Window: See attachment	Time Window: Reporting year
Denominator Statement	All patients, 18 years of age and older, with atrial fibrillation and major stroke risk factors, including a prior stroke, mitral stenosis or replacement, or 2 of the following: age > 75, diabetes, hypertension or CHF. Time Window: Anytime in the past	Patients with nonvalvular AF or atrial flutter for whom assessment of the specified thromboembolic risk factors documented one or more high-risk factor or more than one moderate-risk factor.
Denom Categories		Female; Male 18 years or older
Denominator Details	Time Window: See attachment	Time Window: Reporting year Claims/Administrative: Denominator (Eligible Population): All patients aged 18 years and older with a diagnosis of nonvalvular AF or atrial flutter at high risk for thromboembolism ICD-9 diagnosis codes: 427.31, 427.32 AND Not ICD-9 diagnosis codes: 394.0, 394.2 (mitral stenosis); 996.02, 996.71, V42.2, V43.3 (prosthetic heart valve) AND CPT E/M Service Code: 99201, 99202, 99203, 99204, 99205, 99212,

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	0624 Atrial Fibrillation - Warfarin Therapy	1525 Chronic Anticoagulation Therapy
		99213, 99214, 99215, 99241, 99242, 99243, 99245 AND (Report a CPT Category II code for risk of thromboembolism) • CPT Category II code: 3552F- High risk for thromboembolism • CPT Category II code: 3551F- Intermediate risk for thromboembolism • CPT Category II code: 3550F- Low risk for thromboembolism NOTE: ONLY PATIENTS AT HIGH RISK FOR THROMBOEMBOLISM ARE INCLUDED IN THE MEASURE'S DENOMINATOR WHEN CALCULATING PERFORMANCE Numerator: Patients who were prescribed warfarin during the 12 month reporting period • CPT Category II code: 4012F-Warfarin therapy prescribed Denominator Exclusion: Documentation of medical reason(s) for not prescribing warfarin during the 12 month reporting period • Append modifier to CPT Category II code: 4012F-1P Documentation of patient reason(s) for not prescribing warfarin during the 12 month reporting period • Append modifier to CPT Category II code: 4012F-2P Electronic Specifications: The assessment of patients with nonvalvular AF for thromboembolic risk factors should include the following criteria: Risk factors: prior stroke or transient ischemic attack--> High risk Age = 75 years--> Moderate risk Hypertension--> Moderate risk Diabetes mellitus--> Moderate risk Heart failure or impaired LV systolic function--> Moderate risk
Exclusions	Contraindications to warfarin, including: • Esophageal varices with beed • Aortic dissection • Intracerebral hemorrhage • Blood transfusion(RBC or platelets) • Severe brain injury • Dementia • Alcohol use/abuse • Falls • Fracture • Hemorrhage contraindications and procedures • Adverse effects/coumadin • Abnormail gait/incoordination • Neuro and eye surgery • Gastritis with Current refill of Proton pump inhibitors • Thrombocytopenia • Hematocrit lab value < 25 • Pregnancy • Patient or provider feedback indicating allergy or intolerance to the drug in the past • Patient or provider feedback indicating that there is a contraindication to adding the drug • Antiplatelet agents including aspirin • General exclusions: • •Evidence of metastatic disease or active treatment of malignancy (chemotherapy or radiation therapy) in the last 6 months;	-Patients with valvular AF, specifically those with prosthetic heart valves or mitral stenosis. -Patients at low risk for thromboembolism (i.e., those with none of the risk factors listed above). -Patients with only one moderate risk factor. -Postoperative patients. -Patients with transient or reversible causes of AF (e.g., pneumonia or hyperthyroidism). -Patients who are pregnant. -Medical reason(s) documented by a physician, nurse practitioner, or physician assistant for not prescribing warfarin. Examples of medical reasons for not prescribing warfarin include, but are not limited to: -Allergy -Risk of bleeding -Documentation of patient reason(s) for not prescribing warfarin (e.g., economic, social, and/or religious impediments, noncompliance or other reason for refusal to take warfarin)
Exclusion Details	See attachment	None

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	0624 Atrial Fibrillation - Warfarin Therapy	1525 Chronic Anticoagulation Therapy
Risk Adjustment		no risk adjustment necessary N/A
Stratification		None
Type Score		Rate/proportion better quality = higher score
Algorithm		The ACCF Pinnacle Registry flowchart: 1.) Check if patient is documented to be 18 years of age or older; Exclude those patients younger than 18 or NULL 2.) Check encounter date in reporting period; exclude No or NULL 3.) System checks current and all previous encounters for this patient for documentation of atrial fibrillation/atrial flutter; Exclude NULL or no 4.) Check for diagnosis of atrial fibrillation/atrial flutter; Exclude NULL or No 5.) Check for Non-valvular atrial fibrillation/atrial flutter (Include if no documentation); Exclude Valvular atrial fibrillation 6.) Exclude transient/reversible cause (e.g. pneumonia, hyperthyroidism) 7.) Exclude cardiac surgery within past 3 months 8.) Exclude patients who are pregnant 9.) Check for documentation of 1 or more thromembolic high risk factors 10.) Check for documentation of 2 or more thromembolic moderate risk factors 11.) Check for the prescription of warfarin 12.) Exclude patients who have medical reasons (e.g. allergy to warfarin or risk of bleeding) 13.)Exclude patients who have patient reasons for not prescribing warfarin (e.g. economic, social, and/religious impediments, noncompliance) 14.) Exclude patients with system reasons Assumes that if multiple date of births are found for a patient the most recent date of birth will be used.

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	0081 Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction	0610 Heart Failure - Use of ACE Inhibitor (ACEI) or Angiotensin Receptor Blocker (ARB) Therapy
Steward	American Medical Association | 515 N State St | Chicago | Illinois | 60654	Active Health Management
Description	Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge	Percentage of patients with Heart Failure that are on an ACEI or ARB
Type	Process	Process
Status	Maintenance review	Endorsed – not under review
Committee evaluation	IMPORTANCE: Yes -18, No – 1 SCIENTIFIC ACCEPTABILTY: C=19, P=1, M=0, N=0 USABILTY: C=13 , P= 7, M=0, N=0 FEASIBILTY: C=16 , P= 3, M=0 , N=0 Meets criteria: Yes - 19 No- 0	
Differences	Based on medical record/EHR; claims using CPT II codes Captures medication prescribed Includes ambulatory (nursing home also) and hospital discharge Clinician and group level only Specifies LVSD <40% for inclusion. Re-tooled for EHRs.	Electronic administrative data/claims Captures medication dispensed Does not include hospital discharge; ambulatory only All levels of analysis- including plans and systems Heart failure diagnosis, not necessarily LVSD <40%
Data Source	Paper medical record/flow-sheet; Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record; Registry data This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting. URL www.pinnacleregistry.org Attachment NQF 0081_PCPI_HF-7_ACE ARB for LVSD.pdf	Electronic administrative data/claims; Pharmacy data; Lab data
Level	Clinicians: Individual; Clinicians: Group	Can be measured at all levels
Setting	Home; Ambulatory Care: Office; Hospital; Ambulatory Care: Clinic; Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Hospital Outpatient; Assisted Living; Group homes	Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Clinic; Other
Numerator Statement	Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge *Prescribed may include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list	Patients with a current refill for an ACEI or ARB
Numerator Details	Time Window: Once during the measurement period (outpatient/nursing home) OR at each hospital discharge	Time Window: A drug day-supply that extends within 30 days of the measurement date

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	0081 Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction	0610 Heart Failure - Use of ACE Inhibitor (ACEI) or Angiotensin Receptor Blocker (ARB) Therapy
	For Claims/Administrative: Report CPT Category II Code 4009F- Angiotensin converting enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy prescribed.	
Denominator Statement	All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction	All patients, 18 years of age and older, with Heart Failure Time Window: 3 years
Denom Categories	Female; Male 18 years of age and older	
Denominator Details	Time Window: 12 consecutive months Note: For the inpatient setting (CPT 99239, 99239), the diagnosis refers to the principal discharge diagnosis. The principal diagnosis is typically the first listed on the inpatient claim form with secondary or attributed diagnoses to follow in descending order of importance. ICD-9-CM Diagnosis Code: Note: Although this measure is limited to patients with left ventricular systolic dysfunction, diastolic ICD-9-CM codes are included to provide invariability in coding among measures. See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT) AND Report CPT Category II Code (in development) 3021F- Left ventricular ejection fraction (LVEF) < 40% or qualitative documentation of moderate dysfunction or severe dysfunction	Presence of patient data confirming at least 1 PDD- CHF in the past b. Presence of patient data confirming at least 1 PDD- EJECTION FRACTION VALUE < 40 in the past c. All of the following are correct: i. Presence of at least 4 CHF (CONGESTIVE HEART FAILURE) diagnosis in the past 3 years ii. One of the following is correct: 1. Presence of a current refill for DIURETICS/LOOP DIURETICS 2. Presence of a current refill for CARVEDILOL/LONG ACTING METOPROLOL 3. Presence of a current refill for DIGOXIN a. Digoxin Exclusion – Presence of at least 2 ATRIAL FIBRILLATION diagnosis in the past 12 months
Exclusions	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy; Append modifier to CPT II code 4009F-1P Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB; Append modifier to CPT II code 4009F-2P Documentation of system reason(s) for not prescribing ACE inhibitor or ARB; Append modifier to CPT II code 4009F-3P	Contraindications to an ACEI or ARB, including: - Hyperpotassemia - Hypertrophic caardiomyopathy - Aortic stenosis - Hypotension - Pregnancy - Chronic kidney disease stage 3 and 4 - Chronic kidney disease stage 5 in the absence of dialysis - Hydralazine after prior ACE-I/ARB use - 20% increase in creatinine - Aliskerin - Multiple myeloma - Patient data indicating that the member is pregnancy planning Additional denominator exclusions include:

National Quality Forum Cardiovascular Competing Measures

	0081 Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction	0610 Heart Failure - Use of ACE Inhibitor (ACEI) or Angiotensin Receptor Blocker (ARB) Therapy
		- Heart transplant - Pulmonary hypertension treatment - Valve surgery - Patient or provider feedback indicating allergy or intolerance to the drug in the past - Patient or provider feedback indicating that there is a contraindication to adding the drug General exclusions: - Evidence of metastatic disease or active treatment of malignancy (chemotherapy or radiation therapy) in the last 6 months; - Patients who have been in a skilled nursing facility in the last 3 months
Exclusion Details	See attached for EHR specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, SNOMED, CPT)	See attachment
Risk Adjustment	no risk adjustment necessary	
Stratification		
Type Score	Rate/proportion better quality = higher score	
Algorithm	See attached for calculation algorithm	

National Quality Forum Cardiovascular Competing Measures

	0083 Heart Failure : Beta-blocker therapy for Left Ventricular Systolic Dysfunction	0615 Heart Failure - Use of Beta Blocker Therapy
Steward	American Medical Association PCPI	Active Health
Description	Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge	Percentage of adult patients with heart failure that are on a beta blocker
Status	Maintenance review	Endorsed – not under review
Differences	Medical records; re-tooled for EHRs; claims with CPT II codes Clinician-level measure Exclusions for patient, medical and system reasons Heart faliure with LVEF < 40%. Aptured prescriptions prescribed	Based on claims data (encounter and pharmacy) Can be used at multiple levels of analysis List of contraindications as exclusions Heart failure – not LVEF < 40% Captures prescriptions dispensed
Type	Process	Process
Status	Maintenance review	Endorsed – not under review
Committee Evaluation	IMPORTANCE: Yes - 19 , No – 0 SCIENTIFIC ACCEPTABILTY: C=18, P=0, M=0, N=0 USABILTY: C=18 , P=2 , M=0, N=0 FEASIBILTY: C= 19, P=1 , M=0 , N=0 Meets criteria: Yes -17 No-0	
Differences	Based on medical record/EHR; claims using CPT II codes Captures medication prescribed Includes ambulatory (nursing home also) and hospital discharge Clinician and group level only Specifies LVSD <40% for inclusion. Re-tooled for EHRs.	Electronic administrative data/claims Captures medication dispensed Does not include hospital discharge; ambulatory only All levels of analysis- including plans and systems Heart failure diagnosis, not necessarily LVSD <40%
Data Source	Paper medical record/flow-sheet; Electronic administrative data/claims; Electronic clinical data; Electronic Health/Medical Record; Registry data This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting. URL www.pinnacleregistry.org Attachment NQF 0083_PCPI_HF-6_Beta Blocker for LVSD.pdf	Electronic administrative data/claims; Pharmacy data
Level	Clinicians: Individual; Clinicians: Group	Can be measured at all levels
Setting	Home; Ambulatory Care: Office; Hospital; Ambulatory Care: Clinic; Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Hospital Outpatient; Assisted Living; Group homes	Nursing home (NH) /Skilled Nursing Facility (SNF); Ambulatory Care: Clinic; Other
Numerator Statement	Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge *Prescribed may include prescription given to the patient for beta-blocker therapy at one or more visits in the measurement period OR patient already taking beta-blocker therapy as documented in current medication list **Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate.	Patients with a current refill for beta blockers Time Window: A drug day-supply that extends within 30 days of the measurement date
Numerator Details	Time Window: Once during the measurement period See attached for EHR Specifications. For Claims/Administrative: Report CPT Category II Code: 4006F- Beta-blocker therapy prescribed	Time Window: See attachment
Denominator	All patients aged 18 years and older with a diagnosis of heart	All patients, 18 years of age and older, with heart failure

National Quality Forum Cardiovascular Competing Measures

	0083 Heart Failure : Beta-blocker therapy for Left Ventricular Systolic Dysfunction	0615 Heart Failure - Use of Beta Blocker Therapy
Statement	failure with a current or prior LVEF < 40%. LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction	Time Window: 3 years
Denom Categories	Female; Male 18 years and older	
Denominator Details	Time Window: 12 consecutive months See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, SNOMED, CPT) AND Report CPT Category II Code (in development)3021F- Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function	Time Window: See attachment
Exclusions	Documentation of medical reason(s) for not prescribing beta-blocker therapy Documentation of patient reason(s) for not prescribing beta-blocker therapy Documentation of system reason(s) for not prescribing beta-blocker therapy	Contraindications to a beta blocker, including: - Asthma - COPD - Bradycardia - Hypotension - Aortic stenosis - Peripheral artery disease medications - Heart block in the absence of a pacemaker - Cocaine abuse - Pulmonary hypertension medications Additional denominator exclusions include: - Heart transplant - Patient or provider feedback indicating allergy or intolerance to the drug in the past - Patient or provider feedback indicating that there is a contraindication to adding the drug General exclusions: •Evidence of metastatic disease or active treatment of malignancy (chemotherapy or radiation therapy) in the last 6 months; •Patients who have been in a skilled nursing facility in the last 3 months
Exclusion Details	See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, SNOMED, CPT) • Append modifier to CPT II code 4006F-1P • Append modifier to CPT II code 4006F-2P • Append modifier to CPT II code 4006F-3P	See attachment
Risk Adjustment	no risk adjustment necessary	
Stratification		
Type Score	Rate/proportion better quality = higher score	
Algorithm	See attached for calculation algorithm	

NATIONAL QUALITY FORUM

Cardiovascular Endorsement Maintenance 2010

TO: Cardiovascular Endorsement Maintenance Steering Committee

FR: Reva Winkler, MD, MPH; Kathryn Streeter, MS

SU: Follow-up from Phase II

DA: May 6, 2011

After the April 7-8, 2011 meeting, NQF staff contacted the measure developers for follow-up on issues raised by the Steering Committee. The responses from the developers are attached.

MEASURE DEVELOPER RESPONSES

National Committee for Quality Assurance

- 0073 IVD: blood pressure management
- 0018 Controlling high blood pressure

ACC/AHA/PCPI

- 1524 Assessment of Thromboembolic Risk Factors
- 1525 Chronic Anticoagulation Therapy

NATIONAL QUALITY FORUM

Cardiovascular Endorsement Maintenance 2010

Follow-up issues from the April 7-8, 2011 meeting of the Cardiovascular E&M Steering Committee for measures submitted by NCQA:

Measure specific issues:

Of the 3 BP control measures from NCQA :

a. 0073 IVD: Blood pressure management age 18 and above
b. 0018 Controlling high blood pressure ages 18-85 years
c. 0061 Diabetes: BP control (<140/90) ages 18-75 years

Issues raised by Steering Committee	Developer response
Different upper age limits. The committee has concerns about appropriate BP targets in the elderly.	There is no certainty in using an upper cut off level. We are open to suggestions or consensus going forward but the diabetes cut off was set to the same level as the other diabetes measures (inc A1c and cholesterol control) because that was the recommendation of DPRP for a cut for all of the measures. If you used a different cut point for BP in diabetes you would have to use a different sample for that measure so it is largely a measure burden (with paper charts at least) issue.
The Committee questioned the value of having all three measures. What is the additive value (compared to the burden of measurement) of measuring BP control in patients who have IVD but not HTN or diabetes without HTN? Are data available that describe the size of each of these sub populations (IVD and HTN vs IVD without HTN) and the BP control performance in each group?	We have 3 BP measures because each of them are used in a measurement program linked with other measures with the exception of the BP control in hypertension. Also recall that at one point there were different recommendations for BP control in patients with IVD or diabetes than with simple hypertension. Changing especially the diabetes cut off now would cause problems in virtually all the programs using them, so we would probably continue to use regardless.

NATIONAL QUALITY FORUM

Cardiovascular Endorsement Maintenance 2010

May 6, 2011

Follow-up issues from the April 7-8, 2011 meeting of the Cardiovascular E&M Steering Committee for measures submitted by ACCF/AHA/PCPI:

Measure specific issues:

#1525 – Chronic Anticoagulation Therapy	
Issues raised by Steering Committee	**Developer response**
The Steering Committee recommended modifying the numerator to include other FDA approved anticoagulants	Modified the numerator to give credit to clinicians for prescribing newer oral anticoagulants e.g., dabigatran
The Steering Committee recommended using the same CHADS2 scoring as measure 1524 for consistency.	Clarified the risk criteria used in constructing them (CHADS2)

#1524 – Assessment of Thromboembolic Risk Factors	
Issues raised by Steering Committee	**Developer response**
The Steering Committee recommended changing the title to be more specific	Modified the title to explicitly include CHADS2 score

#1525 Chronic Anticoagulation Therapy

Prescription of warfarin or another anticoagulant drug that is FDA approved for the prevention of thromboembolism for all patients with nonvalvular AF or atrial flutter at high risk for thromboembolism, according to CHADS2 risk stratification

Numerator	All patients with nonvalvular AF or atrial flutter at high risk of thromboembolism (*i.e.*, those with any high-risk factor or more than one moderate-risk factor) who are prescribed warfarin OR another anticoagulant drug that is FDA approved for the prevention of thromboembolism
Denominator	**Included population:** Patients with nonvalvular AF or atrial flutter for whom assessment of the specified thromboembolic risk factors documented one or more high-risk factor or more than one moderate-risk factor. The assessment of patients with nonvalvular AF for thromboembolic risk factors should include the following criteria:

Risk Factors	Weighting
Prior stroke, TIA or systemic embolism	High risk
Age ≥75 years	Moderate risk
Hypertension	Moderate risk
Diabetes Mellitus	Moderate risk
Heart failure or impaired left ventricular systolic function	Moderate risk

Excluded Populations:

- Patients with mitral stenosis or prosthetic heart valves
- Patients at low risk for thromboembolism (i.e., those with none of the risk factors listed above).
- Patients with only one moderate risk factor.
- Postoperative patients.
- Patients with transient or reversible causes of AF (e.g., pneumonia or hyperthyroidism).
- Patients who are pregnant.
- Medical reason(s) documented by a physician, nurse practitioner, or physician's assistant for not prescribing warfarin or another anticoagulant drug that is FDA approved for the prevention of thromboembolism. Examples of medical reasons include, but are not limited to:
  - Allergy
  - Risk of bleeding
- Documentation of patient reason(s) for not prescribing warfarin or another anticoagulant drug that is FDA approved for the prevention of thromboembolism (e.g., economic, social, and/or religious impediments, noncompliance or patient refusal)

Period of Assessment	Reporting year
Sources of Data	Prospective flowsheet, retrospective medical record review, electronic medical record.

Rationale

Anticoagulation should be prescribed for all high risk patients with AF or atrial flutter except those with contraindications to anticoagulation. Aspirin is preferred in patients without risk factors or in those with contraindications to anticoagulation, and is an alternative to anticoagulation in those with only one moderate risk factor.

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Clinical Recommendation(s)

2006 ACC/AHA/ESC Guidelines for the Management of Atrial Fibrillation Patients with AF

Chronic Anticoagulation Therapy

(Recommendations other than those listed below pertain to antithrombotic therapy for patients with AF undergoing cardioversion) (4)

Class I

1. Antithrombotic therapy to prevent thromboembolism is recommended for all patients with AF, except those with lone AF or contraindications. (Level of Evidence: A)
2. The selection of the antithrombotic agent should be based upon the absolute risks of stroke and bleeding and the relative risk and benefit for a given patient. (Level of Evidence: A)
3. Anticoagulation with a vitamin K antagonist is recommended for patients with more than one moderate risk factor. Such factors include age 75 y or greater, hypertension, HF, impaired LV systolic function (ejection fraction 35% or less or fractional shortening less than 25%), and diabetes mellitus. (Level of Evidence: A)
4. For patients without mechanical heart valves at high risk of stroke, chronic oral anticoagulant therapy with a vitamin K antagonist is recommended in a dose adjusted to achieve the target intensity INR of 2.0 to 3.0, unless contraindicated. Factors associated with highest risk for stroke in patients with AF are prior thromboembolism (stroke, TIA, or systemic embolism) and rheumatic mitral stenosis. (Level of Evidence: A)
5. The INR should be measured at least weekly during initiation of therapy and monthly when anticoagulation is stable. (Level of Evidence: A)
6. Aspirin, 81–325 mg daily, is recommended as an alternative to vitamin K antagonists in low-risk patients or in those with contraindications to anticoagulation. (Level of Evidence: A)
7. Antithrombotic therapy is recommended for patients with atrial flutter as for those with AF. (Level of Evidence: C)

Antithrombotic Therapy for Patients with Atrial Fibrillation*

	Risk Category	Recommended Therapy
Low risk	No risk factors	Aspirin, 81 to 325 mg daily
Intermediate risk	One moderate-risk factor	Aspirin, 81 to 325 mg daily, or warfarin (INR 2.0 to 3.0, target 2.5)
High risk	Any high-risk factor or more than one moderate-risk factor	Warfarin (INR 2.0 to 3.0, target 2.5)

*Adapted from Fuster et al. (reference 4)

ACCF/AHA/HRS 2011 Focused Update on the Management of Patients with Atrial Fibrillation (Update on Dabigatran)

Emerging Antithrombotic Agents

Class I

Dabigatran is useful as an alternative to warfarin for the prevention of stroke and systemic thromboembolism in patients with paroxysmal to permanent AF and risk factors for stroke or systemic embolization who do not have a prosthetic heart valve or hemodynamically significant valve disease, sever renal failure (Creatinne clearance < 15 mL/min) or advance liver disease (impaired baseline clotting function) ***(Level of Evidence: B)***

Method of Reporting

Comment [jc1]: Wann LS, Curtis AB, Ellenbogen KA, Estes NAM 3rd, Ezekowitz MD, Jackman WM, January CT, Lowe JE, Page RL, Slotwiner DJ, Stevenson WG, Tracy CM, writing on behalf of the 2006 ACC/AHA/ESC Guidelines for the Management of Patients With Atrial Fibrillation Writing Committee. 2011 ACCF/AHA/HRS focused update on the management of patients with atrial fibrillation (update on dabigatran): a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol 2011;57:xxx–xxx.

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Per patient:

- Whether or not warfarin was prescribed for a patient with AF or atrial flutter who has one or more high-risk factors or more than one moderate-risk factor for thromboembolism

Per patient population:

- Percentage of all patients with AF or atrial flutter who have one or more high-risk factors or more than one moderate-risk factor for thromboembolism for whom warfarin was prescribed
- Percentage of all patients with AF or atrial flutter who have one or more high-risk factors or more than one moderate-risk factors for thromboembolism for whom warfarin was prescribed, once all denominator exclusions have been applied

Challenges to Implementation

- Ambiguity regarding medical or patient reasons for not prescribing an anticoagulant drug that is FDA approved for the prevention of thromboembolism for all patients with nonvalvular AF or atrial flutter
- Difficulty locating reasons in the medical record for not prescribing an anticoagulant drug that is FDA approved for the prevention of thromboembolism for all patients with nonvalvular AF or atrial flutter

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#1524 Assessment of Thromboembolic Risk Factors (CHADS$_2$)

Patients with nonvalvular AF or atrial flutter in whom assessment of thromboembolic risk factors using the CHADS$_2$ risk criteria has been documented

Numerator

Patients with nonvalvular AF or atrial flutter in whom assessment of all of the specified thromboembolic risk factors is documented.

For patients with nonvalvular AF or atrial flutter, assessment of thromboembolic risk should include the following factors:

Risk Factors	Weighting
Prior stroke or TIA	High risk
Age ≥75 years	Moderate risk
Hypertension	Moderate risk
Diabetes mellitus	Moderate risk
Heart failure or impaired LV systolic function	Moderate risk

Denominator

All patients 18 years of age or older with nonvalvular AF or atrial flutter other than those specifically excluded.

Excluded Populations:

- Patients with mitral stenosis or prosthetic heart valves
- Patients with transient or reversible causes of AF (e.g., pneumonia or hyperthyroidism)
- Postoperative patients
- Patients who are pregnant.
- Medical reason(s) documented by a physician, nurse practitioner, or physician assistant for not assessing risk factors. Examples of medical reasons for not assessing risk factors include, but are not limited to:
  - Allergy to warfarin and all other anticoagulant drugs that are FDA approved for the prevention of thromboembolism Risk of bleeding

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Period of Assessment

Reporting year

Sources of Data

Prospective flowsheet, retrospective medical record review, electronic medical record.

Rationale

Assessment of thromboembolic risk **and discussion of the potential benefits and risks of anticoagulant therapy** are crucial steps in the evaluation and management of patients with nonvalvular AF or atrial flutter. Identification of factors that increase risk warrants consideration of chronic anticoagulant therapy. Individual risk varies over time, so the need for anticoagulation must be re-evaluated at regular intervals in all patients with AF or atrial flutter.

Clinical Recommendation(s)

2006 ACC/AHA/ESC Guidelines for the Management of Patients with AF:

Preventing Thromboembolism

(Recommendations regarding antithrombotic therapy other than those listed below pertain to patients with AF or atrial flutter undergoing cardioversion) (4)

Class I

1. Antithrombotic therapy to prevent thromboembolism is recommended for all patients with AF, except those with lone AF or contraindications. (Level of Evidence: A)

2. The selection of the antithrombotic agent should be based upon the absolute risks of stroke and bleeding and the relative risk and benefit for a given patient. (Level of Evidence: A)

3. Anticoagulation with a vitamin K antagonist is recommended for patients with more than one moderate risk factor. Such factors include age 75 y or greater, hypertension, HF, impaired LV systolic function (ejection fraction 35% or less or fractional shortening less than 25%), and diabetes mellitus. (Level of Evidence: A)

4. For patients without mechanical heart valves at high risk of stroke, chronic oral anticoagulant therapy with a vitamin K antagonist is recommended in a dose adjusted to achieve the target intensity INR of 2.0 to 3.0, unless contraindicated. Factors associated with highest risk for stroke in patients with AF are prior thromboembolism (stroke, TIA, or systemic embolism) and rheumatic mitral stenosis. (Level of Evidence: A)

5. The INR should be determined at least weekly during initiation of therapy and monthly when anticoagulation is stable. (Level of Evidence: A)

6. Aspirin, 81–325 mg daily, is recommended as an alternative to vitamin K antagonists in low-risk patients or in those with contraindications to oral anticoagulation. (Level of Evidence: A)

7. Antithrombotic therapy is recommended for patients with atrial flutter as for those with AF. (Level of Evidence: C)

Method of Reporting

Per patient:

- Documentation that thromboembolic risk using the CHADS2 risk criteria was assessed

Per patient population:

- Percentage of patients assessed for thromboembolic risk factors using the CHADS2 risk criteria.

Challenges to Implementation

- Lack of documentation regarding medical or patient reasons for not prescribing an anticoagulant drug that is FDA approved for the prevention of thromboembolism
- Difficulty locating reasons in the medical record for not prescribing an anticoagulant drug that is FDA approved for the prevention of thromboembolism.
- Lack of documentation regarding assessment of patient risk factors

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